

# Alibaba Cloud Elastic Compute Service

API Reference

Issue: 20181220

# Legal disclaimer

---

Alibaba Cloud reminds you to carefully read and fully understand the terms and conditions of this legal disclaimer before you read or use this document. If you have read or used this document, it shall be deemed as your total acceptance of this legal disclaimer.

1. You shall download and obtain this document from the Alibaba Cloud website or other Alibaba Cloud-authorized channels, and use this document for your own legal business activities only. The content of this document is considered confidential information of Alibaba Cloud. You shall strictly abide by the confidentiality obligations. No part of this document shall be disclosed or provided to any third party for use without the prior written consent of Alibaba Cloud.
2. No part of this document shall be excerpted, translated, reproduced, transmitted, or disseminated by any organization, company, or individual in any form or by any means without the prior written consent of Alibaba Cloud.
3. The content of this document may be changed due to product version upgrades, adjustments, or other reasons. Alibaba Cloud reserves the right to modify the content of this document without notice and the updated versions of this document will be occasionally released through Alibaba Cloud-authorized channels. You shall pay attention to the version changes of this document as they occur and download and obtain the most up-to-date version of this document from Alibaba Cloud-authorized channels.
4. This document serves only as a reference guide for your use of Alibaba Cloud products and services. Alibaba Cloud provides the document in the context that Alibaba Cloud products and services are provided on an "as is", "with all faults" and "as available" basis. Alibaba Cloud makes every effort to provide relevant operational guidance based on existing technologies. However, Alibaba Cloud hereby makes a clear statement that it in no way guarantees the accuracy, integrity, applicability, and reliability of the content of this document, either explicitly or implicitly. Alibaba Cloud shall not bear any liability for any errors or financial losses incurred by any organizations, companies, or individuals arising from their download, use, or trust in this document. Alibaba Cloud shall not, under any circumstances, bear responsibility for any indirect, consequential, exemplary, incidental, special, or punitive damages, including lost profits arising from the use or trust in this document, even if Alibaba Cloud has been notified of the possibility of such a loss.
5. By law, all the content of the Alibaba Cloud website, including but not limited to works, products, images, archives, information, materials, website architecture, website graphic layout, and webpage design, are intellectual property of Alibaba Cloud and/or its affiliates. This intellectual property includes, but is not limited to, trademark rights, patent rights, copyrights, and trade

secrets. No part of the Alibaba Cloud website, product programs, or content shall be used, modified, reproduced, publicly transmitted, changed, disseminated, distributed, or published without the prior written consent of Alibaba Cloud and/or its affiliates. The names owned by Alibaba Cloud shall not be used, published, or reproduced for marketing, advertising, promotion, or other purposes without the prior written consent of Alibaba Cloud. The names owned by Alibaba Cloud include, but are not limited to, "Alibaba Cloud", "Aliyun", "HiChina", and other brands of Alibaba Cloud and/or its affiliates, which appear separately or in combination, as well as the auxiliary signs and patterns of the preceding brands, or anything similar to the company names, trade names, trademarks, product or service names, domain names, patterns, logos, marks, signs, or special descriptions that third parties identify as Alibaba Cloud and/or its affiliates).

6. Please contact Alibaba Cloud directly if you discover any errors in this document.



# Generic conventions

**Table -1: Style conventions**

| Style                                                                             | Description                                                                                                                                | Example                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | This warning information indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results. |  <b>Danger:</b><br>Resetting will result in the loss of user configuration data.                                    |
|  | This warning information indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.  |  <b>Warning:</b><br>Restarting will cause business interruption. About 10 minutes are required to restore business. |
|  | This indicates warning information, supplementary instructions, and other content that the user must understand.                           |  <b>Note:</b><br>Take the necessary precautions to save exported data containing sensitive information.             |
|                                                                                   | This indicates supplemental instructions, best practices, tips, and other content that is good to know for the user.                       |  <b>Note:</b><br>You can use <b>Ctrl + A</b> to select all files.                                                 |
| >                                                                                 | Multi-level menu cascade.                                                                                                                  | <b>Settings &gt; Network &gt; Set network type</b>                                                                                                                                                   |
| <b>Bold</b>                                                                       | It is used for buttons, menus, page names, and other UI elements.                                                                          | Click <b>OK</b> .                                                                                                                                                                                    |
| Courier font                                                                      | It is used for commands.                                                                                                                   | Run the <code>cd /d C:/windows</code> command to enter the Windows system folder.                                                                                                                    |
| <i>Italics</i>                                                                    | It is used for parameters and variables.                                                                                                   | <code>bae log list --instanceid Instance_ID</code>                                                                                                                                                   |
| [] or [a b]                                                                       | It indicates that it is a optional value, and only one item can be selected.                                                               | <code>ipconfig [-all -t]</code>                                                                                                                                                                      |
| { } or {a b}                                                                      | It indicates that it is a required value, and only one item can be selected.                                                               | <code>swich {stand   slave}</code>                                                                                                                                                                   |

# Contents

---

|                                              |            |
|----------------------------------------------|------------|
| <b>Legal disclaimer.....</b>                 | <b>I</b>   |
| <b>Generic conventions.....</b>              | <b>I</b>   |
| <b>1 Introduction.....</b>                   | <b>1</b>   |
| <b>2 API overview.....</b>                   | <b>3</b>   |
| <b>3 Getting started.....</b>                | <b>11</b>  |
| 3.1 How to make a request.....               | 11         |
| 3.2 Request structure.....                   | 11         |
| 3.3 Common parameters.....                   | 13         |
| 3.4 Digital signature.....                   | 14         |
| 3.5 Response results.....                    | 18         |
| <b>4 Authorization rules.....</b>            | <b>24</b>  |
| <b>5 Instances.....</b>                      | <b>30</b>  |
| 5.1 RunInstances.....                        | 30         |
| 5.2 CreateInstance.....                      | 51         |
| 5.3 StartInstance.....                       | 75         |
| 5.4 StopInstance.....                        | 78         |
| 5.5 RebootInstance.....                      | 81         |
| 5.6 DeleteInstance.....                      | 83         |
| 5.7 AttachInstanceRamRole.....               | 85         |
| 5.8 DetachInstanceRamRole.....               | 88         |
| 5.9 DescribeInstances.....                   | 91         |
| 5.10 DescribeInstanceVncUrl.....             | 98         |
| 5.11 DescribeInstanceAutoRenewAttribute..... | 100        |
| 5.12 DescribeInstanceRamRole.....            | 104        |
| 5.13 ModifyInstanceVpcAttribute.....         | 106        |
| 5.14 ModifyInstanceAttribute.....            | 109        |
| 5.15 ModifyInstanceChargeType.....           | 113        |
| 5.16 ModifyInstanceSpec.....                 | 118        |
| 5.17 ModifyPrepayInstanceSpec.....           | 123        |
| 5.18 ReactivateInstances.....                | 128        |
| 5.19 RenewInstance.....                      | 130        |
| <b>6 Launch templates.....</b>               | <b>134</b> |
| 6.1 CreateLaunchTemplate.....                | 134        |
| 6.2 CreateLaunchTemplateVersion.....         | 141        |
| 6.3 DeleteLaunchTemplate.....                | 147        |
| 6.4 DeleteLaunchTemplateVersion.....         | 148        |
| 6.5 DescribeLaunchTemplates.....             | 150        |
| 6.6 DescribeLaunchTemplateVersions.....      | 153        |
| 6.7 ModifyLaunchTemplateDefaultVersion.....  | 161        |

|                                           |            |
|-------------------------------------------|------------|
| <b>7 Disks.....</b>                       | <b>164</b> |
| 7.1 CreateDisk.....                       | 164        |
| 7.2 DescribeDisks.....                    | 170        |
| 7.3 AttachDisk.....                       | 176        |
| 7.4 DetachDisk.....                       | 179        |
| 7.5 ModifyDiskChargeType.....             | 181        |
| 7.6 ModifyDiskAttribute.....              | 186        |
| 7.7 ReplaceSystemDisk.....                | 191        |
| 7.8 ResetDisk.....                        | 196        |
| 7.9 ResizeDisk.....                       | 199        |
| <b>8 Images.....</b>                      | <b>203</b> |
| 8.1 CreateImage.....                      | 203        |
| 8.2 ImportImage.....                      | 209        |
| 8.3 CopyImage.....                        | 214        |
| 8.4 DescribeImages.....                   | 218        |
| <b>9 Snapshots.....</b>                   | <b>223</b> |
| 9.1 CreateSnapshot.....                   | 223        |
| 9.2 ApplyAutoSnapshotPolicy.....          | 227        |
| 9.3 DescribeSnapshots.....                | 229        |
| 9.4 DescribeSnapshotLinks.....            | 233        |
| 9.5 ModifyAutoSnapshotPolicyEx.....       | 237        |
| 9.6 DescribeSnapshotsUsage.....           | 241        |
| 9.7 DescribeSnapshotPackage.....          | 242        |
| <b>10 Security groups.....</b>            | <b>245</b> |
| 10.1 CreateSecurityGroup.....             | 245        |
| 10.2 AuthorizeSecurityGroup.....          | 247        |
| 10.3 JoinSecurityGroup.....               | 254        |
| 10.4 DescribeSecurityGroups.....          | 257        |
| 10.5 DescribeSecurityGroupReferences..... | 259        |
| 10.6 ModifySecurityGroupPolicy.....       | 261        |
| 10.7 ModifySecurityGroupRule.....         | 264        |
| <b>11 Deployment sets.....</b>            | <b>270</b> |
| 11.1 CreateDeploymentSet.....             | 270        |
| 11.2 ModifyInstanceDeployment.....        | 272        |
| 11.3 ModifyDeploymentSetAttributes.....   | 274        |
| 11.4 DeleteDeploymentSet.....             | 276        |
| 11.5 DescribeDeploymentSets.....          | 277        |
| <b>12 SSH key pairs.....</b>              | <b>281</b> |
| 12.1 CreateKeyPair.....                   | 281        |
| 12.2 ImportKeyPair.....                   | 283        |
| 12.3 AttachKeyPair.....                   | 286        |
| 12.4 DetachKeyPair.....                   | 288        |

|                                           |            |
|-------------------------------------------|------------|
| 12.5 DeleteKeyPairs.....                  | 290        |
| 12.6 DescribeKeyPairs.....                | 292        |
| <b>13 Networks.....</b>                   | <b>296</b> |
| 13.1 AllocatePublicIpAddress.....         | 296        |
| 13.2 ConvertNatPublicIpToEip.....         | 298        |
| 13.3 AttachClassicLinkVpc.....            | 300        |
| 13.4 DetachClassicLinkVpc.....            | 303        |
| 13.5 DescribeBandwidthLimitation.....     | 305        |
| 13.6 DescribeClassicLinkInstances.....    | 309        |
| 13.7 ModifyInstanceNetworkSpec.....       | 313        |
| <b>14 Elastic network interfaces.....</b> | <b>319</b> |
| 14.1 CreateNetworkInterface.....          | 319        |
| 14.2 AssignPrivateIpAddresses.....        | 322        |
| 14.3 UnassignPrivateIpAddresses.....      | 325        |
| 14.4 DetachNetworkInterface.....          | 327        |
| 14.5 DescribeNetworkInterfaces.....       | 329        |
| <b>15 System event.....</b>               | <b>334</b> |
| 15.1 DescribeInstancesFullStatus.....     | 334        |
| 15.2 DescribeInstanceHistoryEvents.....   | 342        |
| 15.3 CancelSimulatedSystemEvents.....     | 348        |
| 15.4 CreateSimulatedSystemEvents.....     | 349        |
| 15.5 DescribeDisksFullStatus.....         | 352        |
| <b>16 Monitoring.....</b>                 | <b>359</b> |
| 16.1 DescribeEniMonitorData.....          | 359        |
| 16.2 DescribeDiskMonitorData.....         | 363        |
| 16.3 GetInstanceScreenshot.....           | 367        |
| 16.4 GetInstanceConsoleOutput.....        | 370        |
| <b>17 Cloud assistants.....</b>           | <b>373</b> |
| 17.1 CreateCommand.....                   | 373        |
| 17.2 InstallCloudAssistant.....           | 377        |
| 17.3 InvokeCommand.....                   | 378        |
| 17.4 StopInvocation.....                  | 382        |
| 17.5 DeleteCommand.....                   | 384        |
| 17.6 DescribeCloudAssistantStatus.....    | 386        |
| 17.7 DescribeCommands.....                | 388        |
| 17.8 DescribeInvocations.....             | 393        |
| 17.9 DescribeInvocationResults.....       | 404        |
| 17.10 ModifyCommand.....                  | 409        |
| <b>18 Tags.....</b>                       | <b>414</b> |
| 18.1 AddTags.....                         | 414        |
| 18.2 RemoveTags.....                      | 416        |
| 18.3 DescribeTags.....                    | 418        |



|                                                                                    |            |
|------------------------------------------------------------------------------------|------------|
| <b>19 Regions.....</b>                                                             | <b>422</b> |
| 19.1 DescribeZones.....                                                            | 422        |
| 19.2 DescribeResourcesModification.....                                            | 424        |
| 19.3 DescribeAvailableResource.....                                                | 429        |
| <b>20 Others.....</b>                                                              | <b>436</b> |
| 20.1 DescribeTasks.....                                                            | 436        |
| 20.2 DescribeTaskAttribute.....                                                    | 439        |
| 20.3 DescribeAccountAttributes.....                                                | 442        |
| <b>21 Data types.....</b>                                                          | <b>447</b> |
| 21.1 AccessPointType.....                                                          | 447        |
| 21.2 DiskMonitorDataType.....                                                      | 447        |
| 21.3 EipAddressAssociateType.....                                                  | 448        |
| 21.4 InstanceAttributesType.....                                                   | 449        |
| 21.5 InstanceRamRoleSetType.....                                                   | 452        |
| 21.6 KeyPairItemType.....                                                          | 452        |
| 21.7 KeyPairSetType.....                                                           | 452        |
| 21.8 SnapshotLinkType.....                                                         | 453        |
| 21.9 VpcAttributesType.....                                                        | 453        |
| 21.10 AssociatedPublicIp.....                                                      | 454        |
| 21.11 Link.....                                                                    | 454        |
| 21.12 PriceInfoType.....                                                           | 454        |
| 21.13 PriceType.....                                                               | 455        |
| 21.14 PrivateIpSet.....                                                            | 455        |
| 21.15 ReferencingSecurityGroup.....                                                | 456        |
| 21.16 RulesType.....                                                               | 456        |
| 21.17 SecurityGroupReference.....                                                  | 456        |
| <b>22 Appendix.....</b>                                                            | <b>458</b> |
| 22.1 Why only ten entries are returned for query request by using APIs or SDK..... | 458        |
| 22.2 API behavior for accounts with overdue payment.....                           | 459        |
| 22.3 API behavior when an instance is locked for security reasons.....             | 463        |
| 22.4 Update history.....                                                           | 464        |



# 1 Introduction

---

This topic provides the API reference of Alibaba Cloud Elastic Compute Service (ECS). If you are familiar with Web service and one or more programming languages, we recommend that you use APIs to manage your ECS resources or develop applications. For more information, see [API overview](#).

## Limits

We set limits on the number and specification for the ECS instance, disk, security group, snapshot, and network bandwidth that you can create. For more information, see [Limits](#).

Whenever the API description, optional parameter values, and available specifications conflict with the resource or specification limits described in the [Limits](#), the *Cite LeftLimitsCite Right* topic always takes the precedence.

## Methods

We allow HTTP or HTTPS requests, and so are the methods GET or POST. You can make a request by using the following approaches:

- (Recommended) Programming language-specific ECS [SDK](#)
- [Alibaba Cloud CLI](#)
- Alibaba Cloud [API Explorer](#)
- [API URL request](#)

In particular, you can skip the authentication process by using the SDK, CLI, and API Explorer. It is easier for you to get started by using the language-specific SDK instead of making a request over HTTP or HTTPS.

**Note:**

When you call API in the Alibaba Cloud CLI and SDK, remove the period (.) from the request parameters. For example, use `SystemDiskCategory` instead of `SystemDisk.Category`.

However, you must complete the authentication process for every request if you make an API URL request over the HTTP or HTTPS protocol. For more information, see [Digital signature](#) and [Create an AccessKey](#).

## Glossary

| Item                     | Abbreviation          | Meaning                                                                                                                                                                                                                                                                                    |
|--------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Region</i>            | <i>Region</i>         | A specific data center established by Alibaba Cloud in which you can run your business. To decrease network latency, we have linked the regions all over the world. However, the region cannot be changed once an ECS resource is create in it.                                            |
| <i>Availability Zone</i> | <i>Zone</i>           | Zone for short. An area with independent power grids and networks in a specified region. Each region has one or more zones. The network latency for ECS resources within a specific zone is reduced.                                                                                       |
| <i>Instance</i>          | <i>Instance</i>       | A virtual computing environment that includes CPU, memory, operating system, bandwidth, disks, and other basic computing components. An ECS instance is an independent virtual machine, and is the core element of ECS. For more information, see <a href="#">Instance type families</a> . |
| <i>Image</i>             | <i>Image</i>          | A running environment template for an instance. It includes an operating system and preinstalled software. You can use an image either to create an instance or change the system disk of an instance.                                                                                     |
| <i>Disk</i>              | <i>Disk</i>           | The storage device of instances.                                                                                                                                                                                                                                                           |
| <i>Security group</i>    | <i>Security group</i> | An instance-related security group. An instance must belong to at least one security group. The security policies of a security group apply to all instances in the group.                                                                                                                 |
| <i>Snapshot</i>          | <i>Snapshot</i>       | A restore point created for a disk. It contains the disk data at a specified time and can be used to restore disk data or create custom images.                                                                                                                                            |
| <i>Tag</i>               | <i>Tag</i>            | Consists of a key-value pair. You can assign tags to ECS resources for fast listing and filtering.                                                                                                                                                                                         |
| <i>IP address</i>        | <i>IP address</i>     | The Internet or intranet IP address of an instance.                                                                                                                                                                                                                                        |

## 2 API overview

---

See the following tables for the ECS APIs that are available to use.

For more information, see the [API Explorer](#).

### Instances

| Action                                             | Description                                                                                                       |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <a href="#">RunInstances</a>                       | Creates a specified number of instances.                                                                          |
| <a href="#">CreateInstance</a>                     | Creates an instance.                                                                                              |
| <a href="#">StartInstance</a>                      | Starts a specified instance.                                                                                      |
| <a href="#">StopInstance</a>                       | Stops a specified instance.                                                                                       |
| <a href="#">RebootInstance</a>                     | Restarts an instance.                                                                                             |
| <a href="#">DeleteInstance</a>                     | Releases an instance.                                                                                             |
| <a href="#">AttachInstanceRamRole</a>              | Attaches an instance RAM role to your Instance.                                                                   |
| <a href="#">DetachInstanceRamRole</a>              | Detaches a RAM role from an instance.                                                                             |
| <a href="#">DescribeInstanceStatus</a>             | Obtains the list of all your instances in batches with status information.                                        |
| <a href="#">DescribeInstances</a>                  | Describes details of your instances.                                                                              |
| <a href="#">DescribeInstanceVncUrl</a>             | Describes the management terminal URL before connecting to an instance.                                           |
| <a href="#">DescribeUserData</a>                   | Describes the user-defined data of an Instance.                                                                   |
| <a href="#">DescribeInstanceAutoRenewAttribute</a> | Queries the automatic renewal status of an instance.                                                              |
| <a href="#">DescribeInstanceRamRole</a>            | Describes information related to the instance RAM role.                                                           |
| <a href="#">DescribeSpotPriceHistory</a>           | Describes the price history of the preemptible instances. You can query the price records within 30 days at most. |
| <a href="#">DescribeInstanceTypeFamilies</a>       | Describes the resources list of instance type families provided by Alibaba Cloud ECS.                             |
| <a href="#">DescribeInstanceTypes</a>              | Describes the resources list of instance types provided by Alibaba Cloud ECS.                                     |

| Action                                                  | Description                                                                                                     |
|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <a href="#"><i>ModifyInstanceVpcAttribute</i></a>       | Modifies the attributes of a VPC to which a specified instance is connected.                                    |
| <a href="#"><i>ModifyInstanceAttribute</i></a>          | Modifies the information of an Instance, such as the name, password, host name, and description of an instance. |
| <a href="#"><i>ModifyInstanceVncPasswd</i></a>          | Changes the password of management terminal used to connect a specified Instance.                               |
| <a href="#"><i>ModifyInstanceAutoReleaseTime</i></a>    | Sets the automatic release time for a specified instance.                                                       |
| <a href="#"><i>ModifyInstanceAutoRenewAttribute</i></a> | Modifies the information of an Instance, such as the name, password, host name, and description of an instance. |
| <a href="#"><i>ModifyInstanceSpec</i></a>               | Changes the instance type or modifies the Internet bandwidth of a Pay-As-You-Go instance.                       |

## Launch templates

| Action                                                    | Description                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#"><i>CreateLaunchTemplate</i></a>               | Creates an instance launch template, or launch template for short. An instance launch template saves you the trouble of entering a large number of configuration parameters each time you create an instance.                                                       |
| <a href="#"><i>CreateLaunchTemplateVersion</i></a>        | Creates a version based on the specified instance launch template.                                                                                                                                                                                                  |
| <a href="#"><i>DeleteLaunchTemplate</i></a>               | Deletes an instance launch template.                                                                                                                                                                                                                                |
| <a href="#"><i>DeleteLaunchTemplateVersion</i></a>        | Deletes a specified instance launch template version. However, if the instance launch template version you intend to delete is the default version, you must use the <a href="#"><i>DeleteLaunchTemplate</i></a> API to delete the entire instance launch template. |
| <a href="#"><i>DescribeLaunchTemplates</i></a>            | Queries available instance launch templates.                                                                                                                                                                                                                        |
| <a href="#"><i>DescribeLaunchTemplateVersions</i></a>     | Queries instance launch template versions.                                                                                                                                                                                                                          |
| <a href="#"><i>ModifyLaunchTemplateDefaultVersion</i></a> | Sets a specified version of this template as the default version. If you do not specify a template                                                                                                                                                                  |

| Action | Description                                                                                         |
|--------|-----------------------------------------------------------------------------------------------------|
|        | version number when creating an instance ( <a href="#">RunInstances</a> ), default version is used. |

## Disks

| Action                              | Description                                                                             |
|-------------------------------------|-----------------------------------------------------------------------------------------|
| <a href="#">CreateDisk</a>          | Creates a portable data disk.                                                           |
| <a href="#">DeleteDisk</a>          | Releases an independent cloud disk when it is no longer in use.                         |
| <a href="#">DescribeDisks</a>       | Describes your available cloud disks.                                                   |
| <a href="#">AttachDisk</a>          | Attaches a data disk to your Instance.                                                  |
| <a href="#">DetachDisk</a>          | Detaches a cloud disk from a specified instance.                                        |
| <a href="#">ModifyDiskAttribute</a> | Modifies the attribute of your cloud disk.                                              |
| <a href="#">ReplaceSystemDisk</a>   | Replaces the system disk or the operating system of an Instance.                        |
| <a href="#">ReInitDisk</a>          | Initializes a cloud disk to the initial state.                                          |
| <a href="#">ResetDisk</a>           | Rolls back a disk to a specified disk state by using one of its history disk snapshots. |
| <a href="#">ResizeDisk</a>          | Extends the size of a cloud disk.                                                       |

## Images

| Action                          | Description                                                                     |
|---------------------------------|---------------------------------------------------------------------------------|
| <a href="#">CreateImage</a>     | Creates a custom image.                                                         |
| <a href="#">ImportImage</a>     | Imports on-premises image files to the Alibaba Cloud ECS.                       |
| <a href="#">ExportImage</a>     | Exports a custom image to an OSS bucket in the same region as the custom image. |
| <a href="#">CopyImage</a>       | Copies a custom image from one region to other regions.                         |
| <a href="#">CancelCopyImage</a> | Cancels a pending image copy ( <a href="#">CopyImage</a> ) operation.           |
| <a href="#">DescribeImages</a>  | Describes your available image.                                                 |
| <a href="#">DeleteImage</a>     | Deletes a specified custom image.                                               |

| Action                                              | Description                                                                    |
|-----------------------------------------------------|--------------------------------------------------------------------------------|
| <a href="#"><i>DescribeImageSharePermission</i></a> | Describes all the authorized users to whom one of your custom image is shared. |
| <a href="#"><i>ModifyImageAttribute</i></a>         | Modifies the name and description of a custom image.                           |
| <a href="#"><i>ModifyImageSharePermission</i></a>   | Shares a custom image to other Alibaba Cloud users.                            |

## Snapshots

| Actions                                             | Description                                                  |
|-----------------------------------------------------|--------------------------------------------------------------|
| <a href="#"><i>CreateSnapshot</i></a>               | Creates a snapshot for a specified disk device.              |
| <a href="#"><i>CreateAutoSnapshotPolicy</i></a>     | Creates an automatic snapshot policy.                        |
| <a href="#"><i>ApplyAutoSnapshotPolicy</i></a>      | Applies automatic snapshot policies to one or more disks.    |
| <a href="#"><i>DeleteSnapshot</i></a>               | Deletes a specified snapshot.                                |
| <a href="#"><i>CancelAutoSnapshotPolicy</i></a>     | Cancels the automatic snapshot policy for one or more disks. |
| <a href="#"><i>DeleteAutoSnapshotPolicy</i></a>     | Creates an automatic snapshot policy.                        |
| <a href="#"><i>DescribeAutoSnapshotPolicyEx</i></a> | Describes your available automatic snapshot policies.        |
| <a href="#"><i>DescribeSnapshots</i></a>            | Describes one or more of your available snapshots.           |
| <a href="#"><i>DescribeSnapshotLinks</i></a>        | Describes the snapshot chains of one or more disks.          |
| <a href="#"><i>ModifyAutoSnapshotPolicyEx</i></a>   | Creates an automatic snapshot policy.                        |

## Network

| Action                                         | Description                                                                             |
|------------------------------------------------|-----------------------------------------------------------------------------------------|
| <a href="#"><i>AllocatePublicIpAddress</i></a> | Assigns an Internet IP address to an instance.                                          |
| <a href="#"><i>ConvertNatPublicIpToEip</i></a> | Changes the public IP (NatPublicIp) of a VPC-Connected instance to an Elastic IP (EIP). |
| <a href="#"><i>AttachClassicLinkVpc</i></a>    | Links a classic network instance to a VPC, which allows the classic network instance    |



| Action                                              | Description                                                                                                     |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
|                                                     | communicating with the resources that are in the intranet of a VPC.                                             |
| <a href="#"><i>DetachClassicLinkVpc</i></a>         | Unlinks a classic network-connected instance from the VPC.                                                      |
| <a href="#"><i>DescribeBandwidthLimitation</i></a>  | Describes a list of bandwidth resources.                                                                        |
| <a href="#"><i>DescribeClassicLinkInstances</i></a> | Describes one or more of your classic network-connected instances that have established ClassicLink with a VPC. |
| <a href="#"><i>ModifyInstanceNetworkSpec</i></a>    | Modifies the bandwidth configuration of your ECS instance.                                                      |

For more information about the APIs for Virtual Private Cloud (VPC), see [VPC API References](#).

## Security groups

| Action                                                 | Description                                                                                                |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <a href="#"><i>CreateSecurityGroup</i></a>             | Creates a security group.                                                                                  |
| <a href="#"><i>AuthorizeSecurityGroup</i></a>          | Adds an inbound rule for a security group.                                                                 |
| <a href="#"><i>AuthorizeSecurityGroupEgress</i></a>    | Adds an outbound rule for a security group.                                                                |
| <a href="#"><i>RevokeSecurityGroup</i></a>             | Deletes an inbound rule from a security group.                                                             |
| <a href="#"><i>RevokeSecurityGroupEgress</i></a>       | Deletes an outbound rule from a security group.                                                            |
| <a href="#"><i>JoinSecurityGroup</i></a>               | Adds an instance to a specified security group.                                                            |
| <a href="#"><i>LeaveSecurityGroup</i></a>              | Removes an instance from a specified security group.                                                       |
| <a href="#"><i>DeleteSecurityGroup</i></a>             | Deletes a security group.                                                                                  |
| <a href="#"><i>DescribeSecurityGroupAttribute</i></a>  | Describes your security groups.                                                                            |
| <a href="#"><i>DescribeSecurityGroups</i></a>          | Describes the basic information about your security groups, such as the security group ID and description. |
| <a href="#"><i>DescribeSecurityGroupReferences</i></a> | Describes whether a specified security group has been authorized by other security group or not.           |

| Action                                              | Description                                                                                                 |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| <a href="#"><i>ModifySecurityGroupAttribute</i></a> | Modifies the properties of the specified security group, including the security group name and description. |
| <a href="#"><i>ModifySecurityGroupPolicy</i></a>    | Modifies the intranet communication policy of a security group.                                             |
| <a href="#"><i>ModifySecurityGroupRule</i></a>      | Modifies the description of a security group inbound rule.                                                  |

### SSH key pair

| Action                                  | Description                                                                                                                     |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <a href="#"><i>CreateKeyPair</i></a>    | Creates an SSH key pair.                                                                                                        |
| <a href="#"><i>ImportKeyPair</i></a>    | Imports the public key of an SSH key pair that you create with other key pair generators into one of the Alibaba Cloud regions. |
| <a href="#"><i>AttachKeyPair</i></a>    | Attaches an SSH key pair to one or more of your Linux instances.                                                                |
| <a href="#"><i>DetachKeyPair</i></a>    | Detaches an SSH key pair from one or more of your Linux instances.                                                              |
| <a href="#"><i>DeleteKeyPairs</i></a>   | Deletes one or more of your SSH key pairs.                                                                                      |
| <a href="#"><i>DescribeKeyPairs</i></a> | Describes one or more of your SSH key pairs.                                                                                    |

### ENI

| Action                                                 | Description                                  |
|--------------------------------------------------------|----------------------------------------------|
| <a href="#"><i>CreateNetworkInterface</i></a>          | Creates an ENI (Elastic Network Interface).  |
| <a href="#"><i>AttachNetworkInterface</i></a>          | Attaches an ENI to a VPC-connected instance. |
| <a href="#"><i>DetachNetworkInterface</i></a>          | Detaches an ENI from your Instance.          |
| <a href="#"><i>DeleteNetworkInterface</i></a>          | Deletes an ENI.                              |
| <a href="#"><i>DescribeNetworkInterfaces</i></a>       | Describes the list of your ENIs.             |
| <a href="#"><i>ModifyNetworkInterfaceAttribute</i></a> | Modifies the attribute of an ENI.            |

## Monitoring

| Action                                               | Description                                                             |
|------------------------------------------------------|-------------------------------------------------------------------------|
| <a href="#"><i>DescribeDisksFullStatus</i></a>       | Describes the lifecycle status and health status information of a disk. |
| <a href="#"><i>DescribeDiskMonitorData</i></a>       | Queries the monitoring data of a specified disk.                        |
| <a href="#"><i>DescribeInstancesFullStatus</i></a>   | Describes the full status information of the specified Instance.        |
| <a href="#"><i>DescribeInstanceHistoryEvents</i></a> | Describes the history events of a specified Instance.                   |
| <a href="#"><i>DescribeInstanceMonitorData</i></a>   | Describes all the instance-related monitoring data.                     |

## Tags

| Action                              | Description                                                                                                                 |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <a href="#"><i>AddTags</i></a>      | Adds or overwrites one or more tags to your ECS resource.                                                                   |
| <a href="#"><i>RemoveTags</i></a>   | Removes one or more tags from the specified ECS resource, such as instances, disks, snapshots, images, and security groups. |
| <a href="#"><i>DescribeTags</i></a> | Describes one or more of your available tags.                                                                               |

## Cloud assistant

| Action                                     | Description                                                                                   |
|--------------------------------------------|-----------------------------------------------------------------------------------------------|
| <a href="#"><i>CreateCommand</i></a>       | Creates a <a href="#"><i>cloud assistant</i></a> command.                                     |
| <a href="#"><i>InvokeCommand</i></a>       | Performs a specified command on the target Instances.                                         |
| <a href="#"><i>StopInvocation</i></a>      | Stops cloud assistant command processes that are in Running status for one or more instances. |
| <a href="#"><i>DeleteCommand</i></a>       | Deletes a created cloud assistant command.                                                    |
| <a href="#"><i>DescribeCommands</i></a>    | Describes the cloud assistant commands that you have created.                                 |
| <a href="#"><i>DescribeInvocations</i></a> | Describes the cloud assistant command invocation list and status on your Instances.           |

| Action                                           | Description                                                                                                                      |
|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <a href="#"><i>DescribeInvocationResults</i></a> | Describes the invocation result of a cloud assistant command. The actual output information of a specified instance is returned. |
| <a href="#"><i>ModifyCommand</i></a>             | Modifies the parameters and content of a cloud assistant command.                                                                |

## Others

| Action                                       | Description                                                                                                                                                                                                                   |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#"><i>CancelTask</i></a>            | Cancels a specified active task.                                                                                                                                                                                              |
| <a href="#"><i>DescribeTasks</i></a>         | Describes the progress of a specified asynchronous request.                                                                                                                                                                   |
| <a href="#"><i>DescribeTaskAttribute</i></a> | Describes the details about one or more tasks. Currently, the tasks that can be queried are the importing image action <a href="#"><i>ImportImage</i></a> and the exporting image action <a href="#"><i>ExportImage</i></a> . |

## Regions and zones

| Action                                               | Description                                                           |
|------------------------------------------------------|-----------------------------------------------------------------------|
| <a href="#"><i>DescribeRegions</i></a>               | Describes the latest Alibaba Cloud regions that are available to you. |
| <a href="#"><i>DescribeZones</i></a>                 | Describes the zones that are available to you in a specified region.  |
| <a href="#"><i>DescribeAvailableResource</i></a>     | Describes a list of the resources available in a certain zone.        |
| <a href="#"><i>DescribeResourcesModification</i></a> | Describes a list of the resources available in a certain zone.        |

## 3 Getting started

---

### 3.1 How to make a request

This section is applicable for users who make a GET request over HTTP or HTTPS protocol by sending a URL. If you prefer using [SDK](#), Alibaba Cloud [CLI](#), or [API Explorer](#), skip this section.

The GET request URL, which can be directly used in a browser, has a formulated [request structure](#). The URL consists of several parameters, such as the [common request parameters](#), your [signature](#), and some API-specific parameters. We provide URL request example for every API. However, these URL examples are not encoded to make them easy to read. Thus, you must encode the URL before making a request. After the authentication process is complete, we [return the results](#) to you. The response parameters are displayed if it is a success response, and the error message is displayed if it is an error response. You can fix the error according to the common error codes and API-specific error codes.

**Note:**

We recommend that you use SDK to manage your ECS resources or develop applications. It is easier for you to get started by using the language-specific SDK instead of making a request over HTTP or HTTPS. For more information, see Developer Resources.

### 3.2 Request structure

GET requests by sending a URL over the HTTP or HTTPS protocol are allowed. The request parameters must be included in the request URL.

See the following unencoded URL of [CreateSnapshot](#) as a request example.

```
https://ecs.aliyuncs.com/?Action=CreateSnapshot
&DiskId=1033-60053321
&<Common Request Parameters>
```

- `https` specifies the communication protocol.
- `ecs.aliyuncs.com` is one of the ECS service endpoints.
- `Action=CreateSnapshot` specifies the target API, and `DiskId=1033-60053321` is one of the [CreateSnapshot](#) parameters.
- `<Common Request Parameters>` are the headers, common parameters, and authentication parameters.

## Communication protocol

Request over HTTP or HTTPS is supported. We recommend that you send requests over HTTPS to enhance security.

Especially, when you invoke the SSH key pairs APIs, or password exists in your request, such as the parameter `Password` in the [CreateInstance](#) operation, we recommend that you choose the HTTPS protocol.

## Service endpoints

See the following table for the API service access endpoints of ECS.

| Region (Location)                | Endpoint                        |
|----------------------------------|---------------------------------|
| Default                          | ecs.aliyuncs.com                |
| China North 3 (Zhangjiakou)      | ecs.cn-zhangjiakou.aliyuncs.com |
| China North 5 (Hohhot)           | ecs.cn-huhehaote.aliyuncs.com   |
| Asia Pacific NE 1 (Tokyo)        | ecs.ap-northeast-1.aliyuncs.com |
| Asia Pacific SE 2 (Sydney)       | ecs.ap-southeast-2.aliyuncs.com |
| Asia Pacific SE 3 (Kuala Lumpur) | ecs.ap-southeast-3.aliyuncs.com |
| Asia Pacific SE 5 (Jakarta)      | ecs.ap-southeast-5.aliyuncs.com |
| Asia Pacific SOU 1 (Mumbai)      | ecs.ap-south-1.aliyuncs.com     |
| Middle East 1 (Dubai)            | ecs.me-east-1.aliyuncs.com      |
| Germany 1 (Frankfurt)            | ecs.eu-central-1.aliyuncs.com   |

Specifically, if you are from international regions, we recommend that you use the following central endpoints to avoid latency.

| Region (Location)                          | Endpoint                        |
|--------------------------------------------|---------------------------------|
| Default ( <b>US West 1</b> Silicon Valley) | ecs.us-west-1.aliyuncs.com      |
| Default (US East 1 Virginia)               | ecs.us-east-1.aliyuncs.com      |
| Default (Hong Kong)                        | ecs.cn-hongkong.aliyuncs.com    |
| Default (Asia Pacific SE 1 Singapore)      | ecs.ap-southeast-1.aliyuncs.com |

## Request Parameters

You must specify the target API for each request by passing in the `Action` parameter. For example, `Action=StartInstance`. Each URL must contain the [common request parameters](#) and the specific request parameters of the target operation.

## Character encoding

Request parameters and response results are encoded by using the UTF-8 character set.

## 3.3 Common parameters

Both request and response have common parameters, they appear in every round of API action..

### Common request parameters

The following table describes the common parameters that comprise of a URL for a GET request over HTTP or HTTPS protocol.

| Name             | Type   | Required | Description                                                                                                                                                                                                                               |
|------------------|--------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action           | String | Yes      | The target API. For more information about the optional values, see <a href="#">API overview</a> .                                                                                                                                        |
| AccessKeyId      | String | Yes      | Equivalent to a logon password. However, an AccessKey is used to call APIs, while logon password is used to log on to the <a href="#">ECS console</a> . For more information, see <a href="#">Create an AccessKey</a> .                   |
| Signature        | String | Yes      | Your signature. For more information, see <a href="#">Signature</a> .                                                                                                                                                                     |
| SignatureMethod  | String | Yes      | Signature method. Value: HMAC-SHA1.                                                                                                                                                                                                       |
| SignatureVersion | String | Yes      | Signature algorithm version. Value: 1.0.                                                                                                                                                                                                  |
| SignatureNonce   | String | Yes      | Unique random number, which is used to prevent network replay attacks. Different random numbers must be used for different requests.                                                                                                      |
| Timestamp        | String | Yes      | Request time stamp. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is yyyy-MM-ddTHH:mm:ssZ. For example, 2018-01-01T12:00:00Z indicates 20:00:00, Jan 01, 2018, Beijing time (UTC+8). |
| Version          | String | Yes      | The API version to use. Value: 2014-05-26.                                                                                                                                                                                                |
| Format           | String | No       | Type of the response parameters. Optional values: json   xml. Default value: xml.                                                                                                                                                         |

## Request example

```
https://ecs.aliyuncs.com/?Action=XXXXXX
&Format=xml
&Version=2014-05-26
&Signature=Pc5WB8gokVn0xfeu%2FZV%2BiNM1dgI%3D
&SignatureMethod=HMAC-SHA1
&SignatureNonce=15215528852396
&SignatureVersion=1.0
&AccessKeyId=key-test
&Timestamp=2018-01-01T12:00:00Z
...
```

## Common response parameters

| Name      | Type   | Description                                                                                               |
|-----------|--------|-----------------------------------------------------------------------------------------------------------|
| RequestId | String | Request ID. We return a unique RequestId for every API request, whether the request is successful or not. |

## 3.4 Digital signature

We perform the sender authentication for each request. Therefore, a signature information must be included in the request, irrespective of the use of HTTP or HTTPS protocol. By using the AccessKeyId and AccessKeySecret, we perform symmetric encryption to authenticate the sender request.

The AccessKey is equivalent to a logon password. However, an AccessKey is used to call APIs, while the logon password is used to log on to the [ECS console](#). Where an AccessKeyId is the visitor identity, an AccessKeySecret is the secret key to encrypt the signature string and to verify the signature string sent to our server. You must keep your AccessKey confidential to prevent possible data breach event.



### Note:

We provide SDKs and third-party SDKs for multiple programming languages to help you skip the authentication process. For more information, see [SDK](#).

### Step 1. Compose a standardized request URL

1. Sort the request parameters in a lexicographical order. The request parameters include the API-specific parameters and [common parameters](#) except for the `Signature` parameter.



### Note:



For example, if you make a request by using the GET method, these parameters are in the section of the URL followed by a question mark ? and connected by ampersands &.

2. Encode the request parameters by using the UTF-8 character set and according to the [RFC3986](#) rules.

- Do not encode the A~Z and a~z characters, numbers (0~9), hyphens -, underscores \_, periods ., and tildes ~.
- Encode other characters in the %XY format, with XY representing the hexadecimal ASCII value of the characters. For example, the half-width double quotes (") are encoded as %22.
- Encode the extended UTF-8 characters in %XY%ZA... format.
- Encode the whitespaces ( ) to %20 instead of the plus signs (+).

Alternatively, you can use libraries that support the `application/x-www-form-urlencoded` MIME-type URL encoding,

for example the `java.net.URLEncoder` of Java language. If so, use the `percentEncode` Java method, in the encoded strings, replace the plus signs (+) with %20, the asterisks (\*) with %2A, and %7E to the tildes (~). See the following example:

```
private static final String ENCODING = "UTF-8";
private static String percentEncode(String value) throws
UnsupportedEncodingException {
    return value != null ? URLEncoder.encode(value, ENCODING).replace(
        "+", "%20").replace("*", "%2A").replace("%7E", "~") : null;
}
```

3. Connect the encoded parameters and their values with the equal signs (=).
4. Concatenate the encoded parameters with ampersands (&).

Now, you get a canonicalized query string, and its structure must be the same as described in [request structure](#).

## Step 2. Construct a signature string

1. Create a variable `StringToSign` by using the canonicalized query string. You can use the aforementioned [percentEncode](#) to handle the standardization request string that was constructed by the previous steps, with the following rules:

```
StringToSign=
    HTTPMethod + "&" + //HTTPMethod: HTTP method used for making
    request, for example GET.
    percentEncode("/") + "&" + //percentEncode("/"): Encode backslash
    (/) to %2F.
```

```
percentEncode(CanonicalizedQueryString) //Encode the canonicalized
query string created in the Step 1.
```

2. Create a variable `Signature` by calculating the HMAC-SHA1 value of the `StringToSign` according to the [RFC2104](#) rules. Here we use the Java Base64 encoding method.

```
Signature = Base64( HMAC-SHA1( AccessSecret, UTF-8-Encoding-Of(
StringToSign) ) )
```

**Note:**

RFC2104 when calculating signatures `AccessKeySecret` followed by the ampersand (&), and the hexadecimal ASCII value of an ampersand is 38.

3. Encode the value of `Signature` according to the [RFC3986](#) rules to the canonicalized query string URL.

**Sample 1. Parameter Concatenation Method**

Take calling [DescribeRegions](#) as an example. You have the `AccessKeyId=testid` and `AccessKeySecret=testsecret` created in the console.

1. Create a canonicalized query string.

```
http://ecs.aliyuncs.com/?Timestamp=2016-02-23T12:46:24Z&Format=XML&
AccessKeyId=testid&Action=DescribeRegions&SignatureMethod=HMAC-SHA1&
SignatureNonce=3ee8c1b8-83d3-44af-a94f-4e0ad82fd6cf&Version=2014-05-
26&SignatureVersion=1.0
```

2. Create a variable `StringToSign` to be calculated by using the canonicalized query string.

```
GET&%2F&AccessKeyId%3Dtestid%26Action%3DDescribeRegions%26Format%
3DXML%26SignatureMethod%3DHMAC-SHA1%26SignatureNonce%3D3ee8c1b8-83d3-
44af-a94f-4e0ad82fd6cf%26SignatureVersion%3D1.0%26Timestamp%3D2016-
02-23T12%253A46%253A24Z%26Version%3D2014-05-26
```

3. Calculate the HMAC-SHA1 value. Because you have the `AccessKeySecret=testsecret`, the Key used in the RFC2104 rules is `testsecret&`, and the HMAC-SHA1 value is `0LeaidS1Jv xuMvnyH0wuJ+uX5qY=`. Here we use the Java Base64 encoding method.

```
Signature = Base64( HMAC-SHA1( AccessSecret, UTF-8-Encoding-Of(
StringToSign) ) )
```

4. Encode the value of `Signature` according to the [RFC3986](#) rules and add `Signature=0LeaidS1JvxuMvnyH0wuJ%2BuX5qY%3D` to the URL in [Step 1](#).

```
http://ecs.aliyuncs.com/?SignatureVersion=1.0&Action=DescribeRegions
&Format=XML&SignatureNonce=3ee8c1b8-83d3-44af-a94f-4e0ad82fd6cf&
Version=2014-05-26&AccessKeyId=testid&Signature=0LeaidS1JvxuMvnyH0wu
```

```
J%2BuX5qY%3D&SignatureMethod=HMAC-SHA1&Timestamp=2016-02-23T12%
253A46%253A24Z
```

Now you can use a Web browser, curl, wget or other tools to send HTTP request for calling `DescribeRegions` and view the Alibaba Cloud region list.

## Sample 2. Programming Language Method

Assume that you are calling the [DescribeRegions](#) to describe the Alibaba Cloud region list. You have the `AccessKeyId=testid` and `AccessKeySecret=testsecret` created in the console, and all request parameters are stored in a Java `Map<String, String>` object.

### 1. Predefined encoding methods.

```
private static final String ENCODING = "UTF-8";
private static String percentEncode(String value) throws UnsupportedEncodingException {
    return value != null ? URLEncoder.encode(value, ENCODING).replace(
        "+", "%20").replace("*", "%2A").replace("%7E", "~") : null;
}
```

### 2. Predefine the format of the parameter `Timestamp`. The parameter `Timestamp` must conform to the [ISO8601](#), and use the offset from Coordinated Universal Time (UTC) for the date time.

```
private static final String ISO8601_DATE_FORMAT = "yyyy-MM-dd'T'HH:mm:ss'Z'";
private static String formatIso8601Date(Date date) {
    SimpleDateFormat df = new SimpleDateFormat(ISO8601_DATE_FORMAT);
    df.setTimeZone(new SimpleTimeZone(0, "GMT"));
    return df.format(date);
}
```

### 3. Construct a request string.

```
final String HTTP_METHOD = "GET";
Map parameters = new HashMap();
// Add request parameters
parameters.put("Action", "DescribeRegions");
parameters.put("Version", "2014-05-26");
parameters.put("AccessKeyId", "testid");
parameters.put("Timestamp", formatIso8601Date(new Date()));
parameters.put("SignatureMethod", "HMAC-SHA1");
parameters.put("SignatureVersion", "1.0");
parameters.put("SignatureNonce", UUID.randomUUID().toString());
parameters.put("Format", "XML");
// Sort the parameters
String[] sortedKeys = parameters.keySet().toArray(new String[]{});
Arrays.sort(sortedKeys);
final String SEPARATOR = "&";
// Create the variable stringToSign
StringBuilder stringToSign = new StringBuilder();
stringToSign.append(HTTP_METHOD).append(SEPARATOR);
stringToSign.append(percentEncode("/")).append(SEPARATOR);
StringBuilder canonicalizedQueryString = new StringBuilder();
for(String key : sortedKeys) {
    // Encode the key and its value
```

```
canonicalizedQueryString.append("&")
    .append(percentEncode(key)).append("=")
    .append(percentEncode(parameters.get(key)));
}
// Encode the variable canonicalizedQueryString
stringToSign.append(percentEncode(
    canonicalizedQueryString.toString().substring(1)));
```

4. Sign and encode the signature. Because you have the AccessKeySecret=testsecret, the Key for computing HMAC is testsecret& and the value of signature after calculation is 0LeaidS1JvxuMvnyH0wuJ%2BuX5qY%3D.

```
// A sample code for calculating the signature
final String ALGORITHM = "HmacSHA1";
final String ENCODING = "UTF-8";
key = "testsecret&";
Mac mac = Mac.getInstance(ALGORITHM);
mac.init(new SecretKeySpec(key.getBytes(ENCODING), ALGORITHM));
byte[] signData = mac.doFinal(stringToSign.getBytes(ENCODING));
String signature = new String(Base64.encodeBase64(signData));
```

After adding the Signature parameter, the request URL encoded according to [RFC3986](#) rules is ready to use.

```
http://ecs.aliyuncs.com/?SignatureVersion=1.0&Action=DescribeRegions
&Format=XML&SignatureNonce=3ee8c1b8-83d3-44af-a94f-4e0ad82fd6cf&
Version=2014-05-26&AccessKeyId=testid&Signature=0LeaidS1JvxuMvnyH0wu
J%2BuX5qY%3D&SignatureMethod=HMAC-SHA1&Timestamp=2016-02-23T12%
253A46%253A24Z
```

5. Use a Web browser, curl, wget or other tools to send HTTP Request.

```
<DescribeRegionsResponse>
  <Regions>
    <Region>
      <LocalName>Qingdao</LocalName>
      <RegionId>cn-qingdao</RegionId>
    </Region>
    <Region>
      <LocalName>Hangzhou</LocalName>
      <RegionId>cn-hangzhou</RegionId>
    </Region>
  </Regions>
  <RequestId>833C6B2C-E309-45D4-A5C3-03A7A7A48ACF</RequestId>
</DescribeRegionsResponse>
```

By parsing this XML schema output, you can obtain the region and region ID list of Alibaba Cloud. If you set the Format=JSON, the response results are in JSON format. For more information, see [response results](#).

## 3.5 Response results

We return the results in either XML or JSON format, but XML is the default choice. You can switch to XML schema by specifying the request parameter Format. For more information, see [common](#)

[parameters](#). Response examples in our API documents have line breaks and indentation to make them easy to read. The actual response results are not formatted.

### Success response example

Every successful response has a request ID in the RequestId element and other API-specific response parameters. The HTTP status code for a success response is 2XX.

- XML format

```
<?xml version="1.0" encoding="UTF-8"?> <!--Result root node-->
<ActionResponse> <!--Response request tag-->
  <RequestId>4C467B38-3910-447D-87BC-AC049166F216</RequestId> <!--Response result data-->
</ActionResponse>
```

- JSON format

```
{
  "RequestId": "4C467B38-3910-447D-87BC-AC049166F216" /* Response
result data */
}
```

### Error response example

Every error response consists of a request ID in the RequestId element and access endpoint in the HostId element, the error code, and the error message. The HTTP status code for an error response is 4xx or 5xx.

You can fix the exception according to the API-specific error codes, [common error codes](#), or [API Error Center](#) and try the request again. Alternatively, you can [open a ticket](#) and provide additional inputs such as the HostId and RequestId to get technical support from ECS.

- XML format

```
<?xml version="1.0" encoding="UTF-8"?><!--Result root node-->
<Error>
  <RequestId>540CFF28-407A-40B5-B6A5-74Bxxxxxxxxxx</RequestId> <!--Request ID-->
  <HostId>ecs.aliyuncs.com</HostId> <!--Endpoint-->
  <Code>MissingParameter.CommandId</Code> <!--Error code-->
  <Message>The input parameter "CommandId" that is mandatory
for processing this request is not supplied.</Message> <!--Error
message-->
</Error>
```

- JSON format

```
{
  "RequestId": "540CFF28-407A-40B5-B6A5-74Bxxxxxxxxxx", /* Request
ID */
  "HostId": "ecs.aliyuncs.com", /* Endpoint */
}
```

```

"Code": "MissingParameter.CommandId", /* Error code */
"Message": "The input parameter \"CommandId\" that is mandatory
for processing this request is not supplied." /* Error message */
}

```

### Common error codes

| Error code                  | HTTP status code | Error code                                                                                                 |
|-----------------------------|------------------|------------------------------------------------------------------------------------------------------------|
| IdempotentParameterMismatch | 400              | The request is retried with updated parameters.                                                            |
| IllegalTimestamp            | 400              | The input parameter <code>Timestamp</code> that is required for processing this request is not supplied.   |
| IncompleteSignature         | 400              | The request signature does not conform to Aliyun standards.                                                |
| InsufficientBalance         | 400              | Your account does not have enough balance.                                                                 |
| InvalidAccessKeyId.NotFound | 400              | The specified AccessKey ID does not exist.                                                                 |
| InvalidOwner                | 400              | OwnerId and OwnerAccount can't be used at one API access.                                                  |
| InvalidOwnerAccount         | 400              | The specified OwnerAccount is not valid.                                                                   |
| InvalidOwnerId              | 400              | The specified OwnerId is not valid.                                                                        |
| InvalidParamater            | 400              | The specified parameter <code>SignatureMethod</code> is not valid.                                         |
| InvalidParamater            | 400              | The specified parameter <code>SignatureVersion</code> is not valid.                                        |
| InvalidParameter            | 400              | The specified parameter is not valid                                                                       |
| InvalidParameter            | 400              | The specified parameter <code>Action</code> or <code>Version</code> is not valid.                          |
| InvalidParameter.IsNull     | 400              | The required parameter must be not null.                                                                   |
| MissingParameter            | 400              | The input parameter <code>Action</code> that is mandatory for processing this request is not supplied      |
| MissingParameter            | 400              | The input parameter <code>AccessKeyId</code> that is mandatory for processing this request is not supplied |

| Error code                  | HTTP status code | Error code                                                                                               |
|-----------------------------|------------------|----------------------------------------------------------------------------------------------------------|
| MissingParameter            | 400              | The input parameter <code>Signature</code> that is mandatory for processing the request is not supplied. |
| MissingParameter            | 400              | The input parameter <code>TimeStamp</code> that is mandatory for processing this request is not supplied |
| MissingParameter            | 400              | The input parameter <code>Version</code> that is mandatory for processing this request is not supplied   |
| SignatureNonceUsed          | 400              | The request signature nonce has been used.                                                               |
| Throttling                  | 400              | You have made too many requests within a short time; your request is denied due to request throttling.   |
| UnsupportedParameter        | 400              | The parameters is unsupported.                                                                           |
| UnknownError                | 400              | The request processing has failed due to some unknown error.                                             |
| ChargeTypeViolation         | 403              | The operation is not permitted due to charge type of the instance.                                       |
| Forbidden.AccessKeyDisabled | 403              | The <code>AccessKey</code> is disabled.                                                                  |
| Forbidden.NotSupportRAM     | 403              | This action does not support accessed by RAM mode.                                                       |
| Forbidden.RAM               | 403              | User not authorized to operate on the specified resource , or this API doesn't support RAM.              |
| Forbidden.RiskControl       | 403              | This operation is forbidden by Aliyun RiskControl system.                                                |
| Forbidden.SubUser           | 403              | The specified action is not available for you.                                                           |
| Forbidden.Unauthorized      | 403              | User not authorized to operate on the specified resource.                                                |
| InvalidAccount.NotFound     | 403              | The specified Account does not exist.                                                                    |
| InvalidAction               | 403              | Specified action is not valid.                                                                           |

| Error code                            | HTTP status code | Error code                                                                                              |
|---------------------------------------|------------------|---------------------------------------------------------------------------------------------------------|
| InvalidIdempotenceParameter.Mismatch  | 403              | The specified parameters are different from before.                                                     |
| InvalidParameter.OwnerAccount         | 403              | OwnerAccount is Invalid.                                                                                |
| InvalidParameter.ResourceOwnerAccount | 403              | ResourceOwnerAccount is Invalid.                                                                        |
| LastTokenProcessing                   | 403              | The last token request is processing.                                                                   |
| MissingParameter                      | 403              | The input parameter OwnerId,OwnerAccount that is mandatory for processing this request is not supplied. |
| RealNameAuthenticationError           | 403              | Your account has not passed the real-name authentication yet.                                           |
| UnsupportedHTTPMethod                 | 403              | This HTTP method is not supported.                                                                      |
| InvalidDiskId.NotFound                | 404              | The specified DiskId does not exist.                                                                    |
| InvalidImageId.NotFound               | 404              | The specified ImageId does not exist.                                                                   |
| InvalidInstanceId.NotFound            | 404              | The specified InstanceId does not exist.                                                                |
| InvalidRegionId.NotFound              | 404              | The specified RegionId does not exist.                                                                  |
| InvalidSecurityGroupId.NotFound       | 404              | The specified SecurityGroupId does not exist.                                                           |
| InvalidSnapshotId.NotFound            | 404              | The specified SnapshotId does not exist.                                                                |
| OperationConflict                     | 409              | Request was denied due to conflict with a previous request.                                             |
| InternalError                         | 500              | The request processing has failed due to some unknown error, exception or failure.                      |



| Error code                               | HTTP status code | Error code                                                                                               |
|------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------|
| ServiceUnavailable                       | 503              | The request has failed due to a temporary failure of the server.                                         |
| ServiceUnavailable.<br>RegionMaintaining | 503              | System maintenance is in progress on the selected region, please wait a few minutes before trying again. |

## 4 Authorization rules

By default, all operation permissions are granted, and you can use all the ECS APIs to operate on your resources. If a RAM user is unauthorized, however, then they cannot operate on the resources of an Alibaba Cloud account. In this case, you can authorize a RAM user by granting them permission to operate on the resources. Skip this section if you do not need to grant a RAM user access to the ECS instance resources of an Alibaba Cloud Account. Skipping this section does not affect your understanding and usage of the ECS API.

Make sure that you have read the [RAM documentation](#) and [API reference](#) carefully before you use RAM to authorize access to ECS instances.

When a RAM user requests access to ECS resources owned by an Alibaba Cloud user by using ECS APIs, ECS sends a request to the RAM service to check access permission and make sure that the resource owner allows the caller to access the resources. Each ECS API requires different authentication rules for the requested resources. The required rules depend on the resources specification and the definition of the API. See the following table for specific authentication rules.

| Action                  | Authorization rule                                                                                                                                                |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AddTags                 | acs:ecs:\$regionid:\$accountid:\$resourceType/\$resourceId                                                                                                        |
| AllocatePublicIpAddress | acs:ecs:\$regionid:\$accountid:instance/\$instanceId                                                                                                              |
| ApplyAutoSnapshotPolicy | acs:ecs:*\$accountid:snapshot/*                                                                                                                                   |
| AttachClassicLinkVpc    | acs:ecs:\$regionid:\$accountid:instance/\$instanceId                                                                                                              |
| AttachDisk              | <ul style="list-style-type: none"><li>acs:ecs:\$regionid:\$accountid:instance/\$instanceId</li><li>acs:ecs:\$regionid:\$accountid:instance/\$diskId</li></ul>     |
| AttachKeyPair           | <ul style="list-style-type: none"><li>acs:ecs:\$regionid:\$accountid:instance/\$instanceId</li><li>acs:ecs:\$regionid:\$accountid:keypair/\$keypairName</li></ul> |
| AuthorizeSecurityGroup  | acs:ecs:\$regionid:\$accountid:securitygroup/\$groupNo                                                                                                            |

| Action                       | Authorization rule                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AuthorizeSecurityGroupEgress | acs:ecs:\$regionid:\$accountid:securitygroup/\$groupNo                                                                                                                                                                                                                                                                                                                                                                                                                     |
| CancelAutoSnapshotPolicy     | acs:ecs:*. \$accountid:snapshot/*                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| CancelCopyImage              | acs:ecs:\$regionid:\$accountid:image/\$imageNo                                                                                                                                                                                                                                                                                                                                                                                                                             |
| CopyImage                    | <ul style="list-style-type: none"> <li>acs:ecs:\$fromRegionid:\$accountid:image/\$imageNo</li> <li>acs:ecs:\$toRegionid:\$accountid:image/*</li> </ul>                                                                                                                                                                                                                                                                                                                     |
| ConvertNatPublicIpToEip      | acs:ecs:\$regionid:\$accountid:instance/\$instanceId                                                                                                                                                                                                                                                                                                                                                                                                                       |
| CreateAutoSnapshotPolicy     | acs:ecs:*. \$accountid:snapshot/*                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| CreateDisk                   | <ul style="list-style-type: none"> <li>acs:ecs:\$regionid:\$accountid:disk/*</li> <li>acs:ecs:\$regionid:\$accountid:snapshot/\$snapshotId</li> </ul>                                                                                                                                                                                                                                                                                                                      |
| CreateImage                  | <ul style="list-style-type: none"> <li>acs:ecs:\$regionid:\$accountid:image/*</li> <li>acs:ecs:\$regionid:\$accountid:snapshot/\$snapshotId</li> <li>acs:ecs:\$regionid:\$accountid:instance/\$instanceId</li> </ul>                                                                                                                                                                                                                                                       |
| CreateInstance               | <ul style="list-style-type: none"> <li>acs:ecs:\$regionid:\$accountid:instance/*</li> <li>acs:ecs:\$regionid:\$accountid:image/\$imageNo</li> <li>acs:ecs:\$regionid:\$accountid:securitygroup/\$groupNo</li> <li>acs:ecs:\$regionid:\$accountid:snapshot/\$snapshotId</li> <li>(Optional) acs:ecs:\$regionid:\$accountid:keypair/\$keyPairName</li> <li>acs:vpc:\$regionid:\$accountid:vswitch/\$vswitchId</li> <li>acs:vpc:\$regionid:\$accountid:vpc/\$vpcId</li> </ul> |
| CreateKeyPair                | acs:ecs:\$regionid:\$accountid:keypair/*                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| CreateSecurityGroup          | acs:ecs:\$regionid:\$accountid:securitygroup/*                                                                                                                                                                                                                                                                                                                                                                                                                             |
| CreateSnapshot               | <ul style="list-style-type: none"> <li>acs:ecs:\$regionid:\$accountid:snapshot/*</li> <li>acs:ecs:\$regionid:\$accountid:disk/\$diskId</li> </ul>                                                                                                                                                                                                                                                                                                                          |

| Action                       | Authorization rule                                                                                                                                        |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | <ul style="list-style-type: none"> <li>acs:ecs:\$regionid:\$accountid:volume/\$volumeld</li> </ul>                                                        |
| DeleteAutoSnapshotPolicy     | acs:ecs:*.:\$accountid:snapshot/*                                                                                                                         |
| DeleteDisk                   | acs:ecs:\$regionid:\$accountid:disk/\$diskld                                                                                                              |
| DeleteImage                  | acs:ecs:\$regionid:\$accountid:image/\$imageNo                                                                                                            |
| DeleteInstance               | acs:ecs:\$regionid:\$accountid:instance/\$instanceld                                                                                                      |
| DeleteKeyPairs               | acs:ecs:\$regionid:\$accountid:keypair/\$keyPairName                                                                                                      |
| DeleteSecurityGroup          | acs:ecs:\$regionid:\$accountid:securitygroup/\$groupNo                                                                                                    |
| DeleteSnapshot               | acs:ecs:\$regionid:\$accountid:snapshot/\$snapshotld                                                                                                      |
| DescribeClassicLinkInstances | acs:ecs:\$regionid:\$accountid:instance/*                                                                                                                 |
| DescribeDiskMonitorData      | acs:ecs:\$regionid:\$accountid:disk/\$diskld                                                                                                              |
| DescribeDisks                | <ul style="list-style-type: none"> <li>acs:ecs:\$regionid:\$accountid:disk/\$diskld</li> <li>acs:ecs:\$regionid:\$accountid:disk/*</li> </ul>             |
| DescribeImages               | <ul style="list-style-type: none"> <li>acs:ecs:\$regionid:\$accountid:image/\$imageNo</li> <li>acs:ecs:\$regionid:\$accountid:image/*</li> </ul>          |
| DescribeInstanceMonitorData  | acs:ecs:\$regionid:\$accountid:instance/\$instanceld                                                                                                      |
| DescribeInstances            | <ul style="list-style-type: none"> <li>acs:ecs:\$regionid:\$accountid:instance/\$instanceld</li> <li>acs:ecs:\$regionid:\$accountid:instance/*</li> </ul> |
| DescribeInstanceStatus       | acs:ecs:\$regionid:\$accountid:instance/*                                                                                                                 |
| DescribeInstanceVncPasswd    | acs:ecs:\$regionid:\$accountid:instance/\$instanceld                                                                                                      |
| DescribeInstanceVncUrl       | acs:ecs:\$regionid:\$accountid:instance/\$instanceld                                                                                                      |
| DescribeKeyPairs             | <ul style="list-style-type: none"> <li>acs:ecs:\$regionid:\$accountid:keypair/\$keyPairName</li> </ul>                                                    |

| Action                         | Authorization rule                                                                                                                                                   |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | <ul style="list-style-type: none"> <li>acs:ecs:\$regionid:\$accountid:keypair/*</li> </ul>                                                                           |
| DescribePrice                  | acs:ecs:*\$accountid:*                                                                                                                                               |
| DescribeRenewalPrice           | acs:ecs:\$regionid:\$accountid:instance/\$instancetype                                                                                                               |
| DescribeSecurityGroupAttribute | acs:ecs:\$regionid:\$accountid:securitygroup/\$groupNo                                                                                                               |
| DescribeSecurityGroups         | <ul style="list-style-type: none"> <li>acs:ecs:\$regionid:\$accountid:securitygroup/\$groupNo</li> <li>acs:ecs:\$regionid:\$accountid:securitygroup/*</li> </ul>     |
| DescribeSnapshotAttribute      | acs:ecs:\$regionid:\$accountid:snapshot/\$snapshotId                                                                                                                 |
| DescribeSnapshotLinks          | <ul style="list-style-type: none"> <li>acs:ecs:\$regionid:\$accountid:disk/\$diskId</li> <li>acs:ecs:\$regionid:\$accountid:disk/*</li> </ul>                        |
| DescribeSnapshotMonitorData    | acs:ecs:*\$accountid:snapshot/*                                                                                                                                      |
| DescribeSnapshots              | <ul style="list-style-type: none"> <li>acs:ecs:\$regionid:\$accountid:snapshot/\$snapshotId</li> <li>acs:ecs:\$regionid:\$accountid:snapshot/*</li> </ul>            |
| DescribeTags                   | acs:ecs:\$regionid:\$accountid:\$resourceType/\$resourceId                                                                                                           |
| DetachClassicLinkVpc           | acs:ecs:\$regionid:\$accountid:instance/\$instanceId                                                                                                                 |
| DetachDisk                     | <ul style="list-style-type: none"> <li>acs:ecs:\$regionid:\$accountid:instance/\$instanceId</li> <li>acs:ecs:\$regionid:\$accountid:instance/\$diskId</li> </ul>     |
| DetachKeyPair                  | <ul style="list-style-type: none"> <li>acs:ecs:\$regionid:\$accountid:instance/\$instanceId</li> <li>acs:ecs:\$regionid:\$accountid:keypair/\$keypairName</li> </ul> |
| ExportImage                    | acs:ecs:\$regionid:\$accountid:image/\$imageNo                                                                                                                       |
| ImportImage                    | acs:ecs:\$regionid:\$accountid:image/*                                                                                                                               |
| ImportKeyPair                  | acs:ecs:\$regionid:\$accountid:keypair/*                                                                                                                             |

| Action                        | Authorization rule                                                                                                                                                     |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| JoinSecurityGroup             | <ul style="list-style-type: none"> <li>acs:ecs:\$regionid:\$accountid:instance/\$instanceId</li> <li>acs:ecs:\$regionid:\$accountid:securitygroup/\$groupNo</li> </ul> |
| LeaveSecurityGroup            | <ul style="list-style-type: none"> <li>acs:ecs:\$regionid:\$accountid:instance/\$instanceId</li> <li>acs:ecs:\$regionid:\$accountid:securitygroup/\$groupNo</li> </ul> |
| ModifyAutoSnapshotPolicy      | acs:ecs:*\$accountid:snapshot/*                                                                                                                                        |
| ModifyDiskAttribute           | acs:ecs:\$regionid:\$accountid:disk/\$diskId                                                                                                                           |
| ModifyImageAttribute          | acs:ecs:\$regionid:\$accountid:image/\$imageNo                                                                                                                         |
| ModifyInstanceAttribute       | acs:ecs:\$regionid:\$accountid:instance/\$instanceId                                                                                                                   |
| ModifyInstanceAutoReleaseTime | acs:ecs:\$regionid:\$accountid:instance/\$instanceId                                                                                                                   |
| ModifyInstanceChargeType      | acs:ecs:\$regionid:\$accountid:instance/\$instanceId                                                                                                                   |
| ModifyInstanceNetworkSpec     | acs:ecs:\$regionid:\$accountid:instance/\$instanceId                                                                                                                   |
| ModifyInstanceVncPasswd       | acs:ecs:\$regionid:\$accountid:instance/\$instanceId                                                                                                                   |
| ModifyInstanceVpcAttribute    | <ul style="list-style-type: none"> <li>acs:ecs:\$regionid:\$accountid:instance/\$instanceId</li> <li>acs:ecs:\$regionid:\$accountid:vswitch/\$vSwitchId</li> </ul>     |
| ModifySecurityGroupAttribute  | acs:ecs:\$regionid:\$accountid:securitygroup/\$groupNo                                                                                                                 |
| ModifySecurityGroupEgressRule | acs:ecs:\$regionid:\$accountid:securitygroup/\$groupNo                                                                                                                 |
| ModifySecurityGroupRule       | acs:ecs:\$regionid:\$accountid:securitygroup/\$groupNo                                                                                                                 |
| ModifyPrepayInstanceSpec      | acs:ecs:\$regionid:\$accountid:                                                                                                                                        |
| ModifySnapshotAttribute       | acs:ecs:\$regionid:\$accountid:snapshot/\$snapshotId                                                                                                                   |

| Action                    | Authorization rule                                                                                                                                                                                                                                                                                                                              |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RebootInstance            | acs:ecs:\$regionid:\$accountid:instance/\$instanceId                                                                                                                                                                                                                                                                                            |
| ReInitDisk                | acs:ecs:\$regionid:\$accountid:disk/\$diskId                                                                                                                                                                                                                                                                                                    |
| ReleasePublicIpAddress    | acs:ecs:\$regionid:\$accountid:instance/\$instanceId                                                                                                                                                                                                                                                                                            |
| RemoveTags                | acs:ecs:\$regionid:\$accountid:\$resourceType/\$resourceId                                                                                                                                                                                                                                                                                      |
| ReplaceSystemDisk         | <ul style="list-style-type: none"> <li>acs:ecs:\$regionid:\$accountid:instance/\$instanceId</li> <li>acs:ecs:\$regionid:\$accountid:image/\$imageNo</li> </ul>                                                                                                                                                                                  |
| ResetDisk                 | acs:ecs:\$regionid:\$accountid:disk/\$diskId                                                                                                                                                                                                                                                                                                    |
| ResizeDisk                | acs:ecs:\$regionid:\$accountid:disk/\$diskId                                                                                                                                                                                                                                                                                                    |
| RevokeSecurityGroup       | acs:ecs:\$regionid:\$accountid:securitygroup/\$groupNo                                                                                                                                                                                                                                                                                          |
| RevokeSecurityGroupEgress | acs:ecs:\$regionid:\$accountid:securitygroup/\$groupNo                                                                                                                                                                                                                                                                                          |
| RunInstances              | <ul style="list-style-type: none"> <li>acs:ecs:\$regionid:\$accountid:instance/*</li> <li>acs:ecs:\$regionid:\$accountid:image/\$imageNo</li> <li>acs:ecs:\$regionid:\$accountid:securitygroup/\$groupNo</li> <li>acs:ecs:\$regionid:\$accountid:snapshot/\$snapshotId</li> <li>acs:ecs:\$regionid:\$accountid:keypair/\$keyPairName</li> </ul> |
| StartInstance             | acs:ecs:\$regionid:\$accountid:instance/\$instanceId                                                                                                                                                                                                                                                                                            |
| StopInstance              | acs:ecs:\$regionid:\$accountid:instance/\$instanceId                                                                                                                                                                                                                                                                                            |

## 5 Instances

---

### 5.1 RunInstances

Creates a specified number of Pay-As-You-Go instances.

#### Description

You can call [DescribeAvailableResource](#) to view the available resources in a specified region.

We recommend that you maintain a sufficient balance in the linked credit card or PayPal account to complete the payment or preauthorization. For more information, see [Pricing overview](#).

When you use this operation, consider the following:

- You can create a maximum number of 100 instances each time.
- You can set the release time for the instances by specifying the parameter `AutoReleaseTime` in your request.
- You can call [DescribeInstances](#) to check the status of your instance.
- Make sure you have created a security group. For more information, see [CreateSecurityGroup](#).
- After a successful request, the instances that are created by you start automatically. An instance is ready to use when it is in the `Running` status.
- Before creating a VPC-Connected instance, you must [Create a VPC](#). We can create a default VPC and VSwitch for you if needed.
- Unlike [CreateInstance](#), instances created by calling the `RunInstances` method have Internet IPs allocated if you set the value of `InternetMaxBandwidthOut` greater than 0.
- If invalid parameters or stock shortage happens, the `RunInstances` action fails. For troubleshooting, see error codes.

#### Best practices

You can use `RunInstances` to create instances in batch. For easy management and querying, we recommend that you specify tags (`Tag.n.Key` and `Tag.n.Value`) for each batch of instances, and add sequential suffixes (`UniqueSuffix`) to host names (`HostName`) and instance names (`InstanceName`).

An instance launch template eliminates the need to enter a number of configuration parameters each time you create an instance. After creating an instance launch template, you can use



the template by specifying **LaunchTemplateId** and **LaunchTemplateVersion** in the **RunInstances** request.

When creating an instance in the [ECS console](#), you can obtain the best practice suggestions for **RunInstances**. On the page of the **Preview** step, you can click **View Open API** to open the **Open API Best Practice** window. In that window, the left part is the **API Workflow** area that lists the APIs related to **RunInstances**, and the right part is the SDK area that shows the SDK examples for programming languages (**Java** and **Python** examples are available for now).

### Request parameters

| Name                | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                   |
|---------------------|--------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action              | String | Yes      | The name of this interface. Value: RunInstances.                                                                                                                                                                                                                                                                                                              |
| RegionId            | String | Yes      | The region ID. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                                                                                                   |
| ZoneId              | String | No       | The zone ID that is available in the specified region. You can call <a href="#">DescribeZones</a> to obtain the latest zone list.<br>Default value: null.<br>Null indicates it is randomly chosen by Alibaba Cloud ECS.                                                                                                                                       |
| ImageId             | String | No       | The image ID. You can call <a href="#">DescribeImages</a> to obtain the latest image list.<br>Describes your available image.<br>ImageId is necessary and required when neither LaunchTemplateId nor LaunchTemplateName are specified.                                                                                                                        |
| InstanceType        | String | No       | Instance type. For more information about available value, see <a href="#">Instance type families</a> or call <a href="#">DescribeInstanceTypes</a> to query the latest instance type list.<br>When neither LaunchTemplateId nor LaunchTemplateName are specified to choose a launch template, the InstanceType is required.                                  |
| CreditSpecification | String | No       | Modifies the running mode of an unlimited credit enabled t5 instance. Optional values: <ul style="list-style-type: none"><li>Standard: The standard running mode. For more information, see <a href="#">t5 standard instances</a>.</li><li>Unlimited: The unlimited running mode. For more information, see <a href="#">t5 unlimited instances</a>.</li></ul> |

| Name                  | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------|--------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       |        |          | Default value: null.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| SecurityGroupIds      | String | No       | <p>The security group to which the instances belongs. Mutual access is allowed between instances in the same security group in the intranet. The maximum number of instances in one security group is 1,000.</p> <div>  <b>Note:</b> <p><b>SecurityGroupId</b> determines the network type of the instance. For example, if the security group is VPC-Connected, your instances are VPC-Connected also, consequently, <b>vSwitch</b> is required.</p> </div> <p>When neither LaunchTemplateId nor LaunchTemplateName are specified to choose a launch template, the SecurityGroupId is required.</p> |
| LaunchTemplateId      | String | No       | The launch template ID. For more information, call <a href="#">DescribeLaunchTemplates</a> . Either the LaunchTemplateId or LaunchTemplateName must be specified to choose a launch template.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| LaunchTemplateName    | String | No       | The launch template name. Either the LaunchTemplateId or LaunchTemplateName must be specified to determine the template.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| LaunchTemplateVersion | String | No       | The launch template version. If you specify LaunchTemplateId or LaunchTemplateName but no template version number is specified, default version is used.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| InternetChargeType    | String | No       | <p>The billing method of the network bandwidth. Optional values:</p> <ul style="list-style-type: none"> <li>PayByTraffic: You are billed based on the traffic usage.</li> </ul> <p>Default value: PayByTraffic</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| IoOptimized           | String | No       | <p>Whether it is an I/O-optimized instance or not. Options:</p> <ul style="list-style-type: none"> <li>none</li> <li>optimized</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Name                   | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------|---------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        |         |          | If you set InstanceType as one of the <a href="#">Phased-out instance types</a> , the default value is none. Otherwise, the default value is optimized.                                                                                                                                                                                                                                                                                                      |
| SystemDisk.Category    | String  | No       | <p>The category of the system disk. Optional values:</p> <ul style="list-style-type: none"> <li>Cloud: Basic cloud disk.</li> <li>cloud_efficiency: Ultra cloud disk.</li> <li>cloud_ssd: Cloud SSD.</li> <li>ephemeral_ssd: Ephemeral SSD.</li> </ul> <p>If you set InstanceType as one of the <a href="#">phased out instance types</a> and set the IoOptimized to none, the default value is cloud. Otherwise, the default value is cloud_efficiency.</p> |
| SystemDisk.Size        | String  | No       | <p>The size of the system disk, in GiB. Value range: [20, 500].</p> <p>It must be equal to or greater than the max{20, the size of the specified image}. Default value: max{40, the size of the specified image}.</p>                                                                                                                                                                                                                                        |
| SystemDisk.DiskName    | String  | No       | <p>System disk name.</p> <ul style="list-style-type: none"> <li>The instance name is a string of 2 to 128 English letters and special characters. It can contain digits, underscores (_), colons (:), or hyphens (-). It must begin with an English or a Chinese character.</li> <li>It cannot begin with http:// or https://.</li> </ul>                                                                                                                    |
| SystemDisk.Description | String  | No       | <p>Description of a system disk.</p> <ul style="list-style-type: none"> <li>It can be [2, 256] characters in length.</li> <li>It cannot begin with http:// or https://.</li> </ul>                                                                                                                                                                                                                                                                           |
| DataDisk.n.Category    | String  | No       | <p>Category of the data disk n. The valid range of n is [1, 16]. Optional values:</p> <ul style="list-style-type: none"> <li>Cloud: Basic cloud disk.</li> <li>cloud_efficiency: Ultra cloud disk.</li> <li>cloud_ssd: Cloud SSD.</li> <li>ephemeral_ssd: Ephemeral SSD.</li> </ul> <p>Default value: cloud.</p>                                                                                                                                             |
| DataDisk.n.Size        | Integer | No       | <p>The capacity size of the N data disk in GiB and the value range of n is [1, 16]. Value range:</p>                                                                                                                                                                                                                                                                                                                                                         |

| Name                          | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------|---------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                               |         |          | <ul style="list-style-type: none"> <li>cloud: [5, 2000]</li> <li>cloud_efficiency: [20, 32768]</li> <li>cloud_ssd: [20, 32768]</li> <li>ephemeral_ssd: [5, 800]</li> </ul> <p>When SnapshotId is specified, the value must be equal to or greater than the specific snapshot.</p>                                                                                   |
| DataDisk.n.SnapshotId         | String  | No       | Snapshot is used to create the data disk. The valid range of n is [1, 16]. After the DataDisk.n.SnapshotId is specified, DataDisk.n.Size is ignored, and the size of the new disk is the size of the specified snapshot. If the snapshot was created on or before July 15, 2013, your request is denied, and an error InvalidSnapshot.TooOld is returned.           |
| DataDisk.n.Encrypted          | String  | No       | Whether the data disk is encrypted or not. The valid range of n is [1, 16]. Options: <ul style="list-style-type: none"> <li>true: Encrypted.</li> <li>false: Not encrypted.</li> </ul> Default value: false.                                                                                                                                                        |
| DataDisk.n.DiskName           | String  | No       | The data disk name. The valid range of n is [1, 16]. <ul style="list-style-type: none"> <li>It can be [2, 128] characters in length. It must begin with an English letter or Chinese character and can contain digits, colons (:), underscores (_), or hyphens (-).</li> <li>It cannot start with "http://" or "https://".</li> </ul>                               |
| DataDisk.n.Description        | String  | No       | Description of a data disk. The valid range of n is [1, 16]. <ul style="list-style-type: none"> <li>It can be [2, 256] characters in length.</li> <li>It cannot start with "http://" or "https://".</li> </ul>                                                                                                                                                      |
| DataDisk.n.DeleteWithInstance | Boolean | No       | Whether a data disk is released along with the instance or not. The valid range of n is [1, 16]. Options: <ul style="list-style-type: none"> <li>true: The disk is released with the instance.</li> <li>false: The disk is not released with the instance.</li> </ul> Default value: true. This parameter is valid only when and the value of parameter DataDisk.n. |

| Name                                 | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------|---------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      |         |          | Category is <code>cloud</code> , <code>cloud_efficiency</code> , or <code>cloud_ssd</code> . Otherwise, an error is returned.                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <code>HpcClusterId</code>            | String  | No       | The cluster ID to which the instance belongs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <code>VSwitchId</code>               | String  | No       | VSwitch ID. It must be specified when you create VPC-Connected instances.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <code>PrivateIpAddress</code>        | String  | No       | Private IP address of an ECS instance. <code>PrivateIpAddress</code> depends on <code>VSwitchId</code> and cannot be specified separately.                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <code>InternetMaxBandwidthIn</code>  | Integer | No       | The maximum inbound bandwidth from Internet network, measured in Mbit/s. Value range: [1, 200]. Default value: 200.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <code>InternetMaxBandwidthOut</code> | Integer | No       | Maximum outbound bandwidth to the Internet in Mbit/s. Value range: <ul style="list-style-type: none"> <li>[0, 100].</li> </ul> Default value: 0.                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <code>InstanceName</code>            | String  | No       | The instance name. <ul style="list-style-type: none"> <li>The instance name is a string of 2 to 128 English letters and special characters. It must begin with an English or a Chinese character. It can contain digits, periods (.), colons (:), underscores (_), and hyphens (-)</li> <li>but cannot begin with <code>http://</code> or <code>https://</code>.</li> </ul> If this parameter is not specified, the default value is the <code>InstanceId</code> of the instance. The default value is the <code>InstanceId</code> of the instance.                      |
| <code>HostName</code>                | String  | No       | Host name of the ECS instance. <ul style="list-style-type: none"> <li>It cannot start or end with a period (.) or a hyphen (-) and it cannot have two or more consecutive periods (.) or hyphens (-).</li> <li>For <b>Windows</b>: The host name can be [2, 15] characters in length. It can contain uppercase or lowercase letters, digits, periods (.), and hyphens (-). It cannot be only digits.</li> <li>For other OSs, such as <b>Linux</b>: The host name can be [2, 128] characters in length. It can be segments separated by periods (.). Uppercase</li> </ul> |

| Name            | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------|---------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |         |          | or lowercase letters, digits, and hyphens (-) are allowed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| UniqueSuffix    | Boolean | No       | Whether or not add sequential suffix for HostName and InstanceName. The identify starts from 001 but cannot exceed 999. For example: LocalHost001, LocalHost002 and MyInstance001, MyInstance002. Default value: false.                                                                                                                                                                                                                                                                                                                                                             |
| Description     | String  | No       | Description of an ECS instance. <ul style="list-style-type: none"> <li>It can be [2, 256] characters in length.</li> <li>It cannot begin with "http://" or "https://".</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                   |
| Password        | String  | No       | <p>Password of the ECS instance. The password can be [8, 30] characters in length. It must contain uppercase letters, lowercase letters, and numbers. The following special characters are allowed: ()~!@#\$%^&amp;*~+= {}[]:; '&lt; &gt; , . ? / . A slash (/) cannot be the first character of Windows instances administrative password.</p> <div>  <b>Note:</b><br/>           If you specify a value for parameter Password, use HTTPS to call the API to avoid data breach.         </div> |
| PasswordInherit | Boolean | No       | Whether to use the password pre-configured in the image you select or not. When PasswordInherit is specified, the Password must be null. For a secure access, make sure that the selected image has password configured.                                                                                                                                                                                                                                                                                                                                                            |
| Amount          | String  | No       | The specified number of instances you want to create. Value range: [1, 100]. Default value: 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| AutoReleaseTime | String  | No       | <p>The automatic release time for the specified instances. The time is presented using the <a href="#">ISO8601</a> standard and in UTC time. The format is YYYY-MM-DDTHH:mm:ssZ.</p> <ul style="list-style-type: none"> <li>If the seconds (ss) place is not 00, it is automatically set to start from the current minute (mm).</li> <li>It must be at least half an hour later than the current time.</li> </ul>                                                                                                                                                                   |

| Name                        | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------|---------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                             |         |          | <ul style="list-style-type: none"> <li>It must be less than three years from the current time.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| DeletionProtection          | Boolean | No       | <p>Whether an instance can be released manually through the console or API (<a href="#">DeleteInstance</a>).</p> <ul style="list-style-type: none"> <li>true: Enable deletion protection.</li> <li>false (default value): Disable deletion protection.</li> </ul> <div>  <b>Note:</b><br/>           This attribute applies to the Pay-As-You-Go instances. However, it can only restrict the manual release operation, not the release operation by Alibaba Cloud.         </div> |
| UserData                    | String  | No       | The user data of an instance. It must be encoded in Base64 format. The maximum size of the user data is 16 KB.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| KeyPairName                 | String  | No       | <p>The name of the key pair.</p> <ul style="list-style-type: none"> <li>For <b>Windows</b> instances, ignore this parameter. Default value: null. The Password is still effective even the KeyPairName is used.</li> <li>The username and password authentication method is disabled if a value is set for parameter KeyPairName for a <b>Linux instance</b>.</li> </ul>                                                                                                                                                                                            |
| RamRoleName                 | String  | No       | Instance RAM role name. The name is provided and maintained by RAM and can be queried using <a href="#">ListRoles</a> . For more information, see <a href="#">CreateRole</a> and <a href="#">ListRoles</a> .                                                                                                                                                                                                                                                                                                                                                        |
| SecurityEnhancementStrategy | String  | No       | <p>Whether or not to enable security enhancement. Options:</p> <ul style="list-style-type: none"> <li>Active: Enables the security enhancement feature and installs a free network security software. Only applicable to the Alibaba Cloud official images.</li> <li>Deactive: Disables the security enhancement feature. No network security software is installed. Applicable to all kinds of images.</li> </ul>                                                                                                                                                  |
| Tag.n.Key                   | String  | No       | The key of a tag of which n is from 1 to 20. Once you use this parameter, it cannot be a null string. It                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

| Name           | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------|--------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                |        |          | supports up to 64 characters. It cannot start with "aliyun", "acs:", "http://", or "https://".                                                                                                                                                                                                                                                                                                                                              |
| Tag.n.Value    | String | No       | The value of a tag of which n is from 1 to 20. It can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "http://", acs:, or "https://".                                                                                                                                                                                                                                                            |
| SpotStrategy   | String | No       | Sets an expected spot price if you are creating preemptible instances. It takes effect only when parameter InstanceChargeType is PostPaid.<br>Options: <ul style="list-style-type: none"><li>NoSpot: A normal Pay-As-You-Go instance.</li><li>SpotWithPriceLimit: Sets the price threshold for a preemptible instance.</li><li>SpotAsPriceGo: A price that is based on the highest Pay-As-You-Go instance.</li></ul> Default value: NoSpot. |
| SpotPriceLimit | Float  | No       | The hourly price threshold for a preemptible instance, and it takes effect only when parameter SpotStrategy is SpotWithPriceLimit. Three decimal places are allowed at most.                                                                                                                                                                                                                                                                |
| ClientToken    | String | No       | Guarantees the idempotence of the request. The value is generated by a client and must be globally unique. Only ASCII characters are allowed. It can contain a maximum of 64 ASCII characters. For more information, see <a href="#">How to ensure idempotence</a> .                                                                                                                                                                        |

### Response parameters

| Name           | Type          | Description               |
|----------------|---------------|---------------------------|
| InstanceIdSets | InstanceIdSet | The list of instance IDs. |

#### InstanceIdSet

| Name       | Type   | Description                                                            |
|------------|--------|------------------------------------------------------------------------|
| InstanceId | String | ID of the ECS instance. It is a unique identifier of the ECS instance. |



## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=RunInstances
&RegionId=cn-hangzhou
&InstanceType=ecs.cm4.6xlarge
&SecurityGroupId=sg-securitygroupid
&Amount=3
&<Common Request Parameters>
```

### Response example

### XML format

```
<RunInstancesResponse>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FE73368</RequestId>
  <InstanceIdSets>
    <InstanceIdSet>
      <InstanceId>i-instanceid1</InstanceId>
      <InstanceId>i-instanceid2</InstanceId>
      <InstanceId>i-instanceid3</InstanceId>
    </InstanceIdSet>
  </InstanceIdSets>
</RunInstancesResponse>
```

### JSON format

```
{
  "InstanceIdSets": {
    "InstanceIdSet": [
      "i-instanceid1",
      "i-instanceid2",
      "i-instanceid3"
    ]
  },
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FE73368"
}
```

## Error codes

Error codes specific to this interface are as follows.

| Error code               | Error message                                   | HTTP status code | Description                                                                                        |
|--------------------------|-------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------|
| Account.Arrearage        | Your account has an outstanding payment.        | 400              | Your account has an overdue payment.                                                               |
| EncryptedOption.Conflict | Encryption value of disk and snapshot conflict. | 400              | Both the specified data disk and the specified snapshot must be encrypted or not at the same time. |

| Error code                               | Error message                                                                                                                                | HTTP status code | Description                                                                                          |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------|
| IncorrectVSwitchStatus                   | The current status of virtual switch does not support this operation.                                                                        | 400              | The status of the specified VSwitch does not support the operation.                                  |
| InstanceDiskCategoryLimitExceed          | The specified DataDisk.n.Size beyond the permitted range, or the capacity of snapshot exceeds the size limit of the specified disk category. | 400              | The specified DataDisk.n.Size exceeds the maximum size of the specified disk category.               |
| InstanceDiskNumberLimitExceed            | The total number of specified disk in an instance exceeds.                                                                                   | 400              | The number of data disks attached to one ECS exceeds 16.                                             |
| InvalidAutoRenewPeriod.ValueNotSupported | The specified autoRenewPeriod is not valid.                                                                                                  | 400              | The specified AutoRenewPeriod is invalid.                                                            |
| InvalidDataDiskSize.ValueNotSupported    | The specified DataDisk.n.Size beyond the permitted range, or the capacity of snapshot exceeds the size limit of the specified disk category. | 400              | The specified DataDisk.n.Size is invalid or exceeds the maximum size of the specified disk category. |
| InvalidDescription.Malformed             | The specified parameter Description is not valid.                                                                                            | 400              | The specified Description is invalid.                                                                |
| InvalidDiskCategory.ValueNotSupported    | The specified parameter DiskCategory is not valid.                                                                                           | 400              | The specified DiskCategory is invalid.                                                               |
| InvalidDiskDescription.Malformed         | The specified parameter SystemDisk.DiskDescription or DataDisk.n.Description is not valid.                                                   | 400              | Either the specified SystemDisk.DiskDescription or DataDisk.n.Description is invalid.                |
| InvalidDiskName.Malformed                | The specified parameter SystemDisk.DiskName or DataDisk.n.DiskName is not valid.                                                             | 400              | The specified SystemDisk.DiskName or                                                                 |

| Error code                                  | Error message                                                                                              | HTTP status code | Description                                                                                                             |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------|
|                                             |                                                                                                            |                  | DataDisk.n.DiskName is invalid.                                                                                         |
| InvalidHostName.Malformed                   | The specified parameter HostName is not valid.                                                             | 400              | The specified HostName is invalid.                                                                                      |
| InvalidInstanceName.Malformed               | The specified parameter InstanceName is not valid.                                                         | 400              | The specified InstanceName is invalid.                                                                                  |
| InvalidInstanceType.ValueNotSupported       | The specified InstanceType beyond the permitted range.                                                     | 400              | The specified InstanceType is invalid or does not exist.                                                                |
| InvalidInstanceType.ValueUnauthorized       | The specified InstanceType is not authorized.                                                              | 400              | The specified InstanceType is unauthorized.                                                                             |
| InvalidInternetChargeType.ValueNotSupported | The specified InternetChargeType is not valid.                                                             | 400              | The specified InternetChargeType does not exist.                                                                        |
| InvalidIoOptimizedValue.ValueNotSupported   | IoOptimized value not supported.                                                                           | 400              | The specified IoOptimized is invalid or does not exist.                                                                 |
| InvalidNetworkType.Mismatch                 | Specified parameter InternetMaxBandwidthIn or InternetMaxBandwidthOut conflict with instance network type. | 400              | Either the specified InternetMaxBandwidthIn or InternetMaxBandwidthOut does not match the network type of the instance. |
| InvalidNetworkType.Mismatch                 | Specified parameter InternetChargeType conflict with instance network type.                                | 400              | The specified InternetChargeType is invalid for the network type of the instance.                                       |

| Error code                                        | Error message                                                        | HTTP status code | Description                                                                                  |
|---------------------------------------------------|----------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------|
| InvalidParameter                                  | The specified parameter InternetMaxBandwidthOut is not valid.        | 400              | The specified InternetMaxBandwidthOut is invalid.                                            |
| InvalidParameter                                  | The specified instance bandwidth is not valid.                       | 400              | The specified instance bandwidth is invalid.                                                 |
| InvalidParameter                                  | The specified parameter Amount is not valid.                         | 400              | The specified Amount is invalid.                                                             |
| InvalidParameter.<br>Bandwidth                    | The specified parameter Bandwidth is not valid.                      | 400              | The specified instance bandwidth is invalid.                                                 |
| InvalidParameter.<br>Conflict                     | The specified image does not support the specified instance type.    | 400              | You cannot use the specified image to create an ECS instance of the specified instance type. |
| InvalidParameter.<br>.Encrypted.<br>KmsNotEnabled | The encrypted disk need enable KMS.                                  | 400              | You have not enabled the Key Management Service (KMS) service.                               |
| InvalidParameter.<br>EncryptedIllegal             | The value of parameter Encrypted is illegal.                         | 400              | The specified DataDisk.n.Encrypted is invalid.                                               |
| InvalidParameter.<br>.EncryptedNotSupported       | Encrypted disk is not support in this region.                        | 400              | You cannot encrypt the data disk in the specified region.                                    |
| InvalidParameter.<br>.EncryptedNotSupported       | Corresponding data disk category does not support encryption.        | 400              | You cannot encrypt the specified DataDisk.n.Category.                                        |
| InvalidParameter.<br>Mismatch                     | Specified security group and virtual switch are not in the same VPC. | 400              | Both the specified security group and the specified VSwitch must be in the same VPC.         |
| InvalidParameter.<br>Mismatch                     | Specified virtual switch is not in the specified zone.               | 400              | The specified VSwitch is not in the specified zone.                                          |

| Error code                                  | Error message                                                                    | HTTP status code | Description                                                                                                 |
|---------------------------------------------|----------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------|
| InvalidPassword.Malformed                   | The specified parameter Password is not valid.                                   | 400              | The specified Password is invalid.                                                                          |
| InvalidPasswordParam.Mismatch               | The input password should be null when passwdInherit is true.                    | 400              | When PasswordInherit is specified, the Password must be null.                                               |
| InvalidSnapshotId.BasedSnapshotTooOld       | The specified snapshot is created before 2013-07-15.                             | 400              | The specified DataDisk.n.SnapshotId must be created after July 15, 2013.                                    |
| InvalidSpotAliUid                           | The specified UID is not authorized to use SPOT instance.                        | 400              | You are not authorized to create preemptible instances.                                                     |
| InvalidSpotAuthorized                       | The specified Spot param is unauthorized.                                        | 400              | Your account is not authorized to use preemptible instances.                                                |
| InvalidSpotPrepaid                          | The specified Spot type is not support PrePay Instance.                          | 400              | Only Pay-As-You-Go billing method is allowed for preemptible instances.                                     |
| InvalidSpotPriceLimit                       | The specified SpotPriceLimit is not valid.                                       | 400              | The parameter SpotPriceLimit is invalid.                                                                    |
| InvalidSpotPriceLimit.LowerThanPublicPrice  | The specified parameter spotPriceLimit can't be lower than current public price. | 400              | The specified SpotPriceLimit must be equal to or greater than the official price of the specified instance. |
| InvalidSpotStrategy                         | The specified SpotStrategy is not valid.                                         | 400              | The parameter SpotStrategy is invalid.                                                                      |
| InvalidSystemDiskCategory.ValueNotSupported | The specified parameter SystemDisk.Category is not valid.                        | 400              | The specified SystemDisk.Category is invalid.                                                               |

| Error code                              | Error message                                                                                | HTTP status code | Description                                                                                                         |
|-----------------------------------------|----------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------|
| InvalidUserData.<br>NotSupported        | The specified parameter UserData only support the vpc and IoOptimized Instance.              | 400              | You can only specify UserData for I/O optimized VPC-Connected instances.                                            |
| InvalidUserData.<br>SizeExceeded        | The specified parameter UserData exceeds the size.                                           | 400              | The size of the UserData before the Base64 encoding cannot exceeded 16 KB.                                          |
| InvalidHpc<br>ClusterId.<br>NotFound    | The specified HpcClusterId is not found.                                                     | 400              | The specified HpcClusterId does not exist.                                                                          |
| InvalidHpc<br>ClusterId.<br>Creating    | The specified HpcClusterId is creating.                                                      | 400              | The specified HpcClusterId is being created. Please try again later.                                                |
| InvalidHpc<br>ClusterId.<br>Unnecessary | The specified HpcClusterId is unnecessary.                                                   | 400              | You can specify the ClusterId only for some InstanceType.                                                           |
| InvalidVSwitchId.<br>Necessary          | The HpcClusterId is necessary.                                                               | 400              | To choose cluster for the specified InstanceType, you must specify the HpcClusterId.                                |
| MissingParameter                        | The input parameter VSwitchId that is mandatory for processing this request is not supplied. | 400              | The VSwitchId parameter is required.                                                                                |
| QuotaExceed.<br>AfterpayInstance        | The maximum number of Pay-As-You-Go instances is exceeded.                                   | 400              | You have exceeded the maximum number of Pay-As-You-Go instances. For more information, see <a href="#">Limits</a> . |
| QuotaExceeded                           | Living instances quota exceeded in this VPC.                                                 | 400              | The number of instances in the specified VPC has                                                                    |

| Error code                          | Error message                                                                                                                                                                                         | HTTP status code | Description                                                                                                                |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------|
|                                     |                                                                                                                                                                                                       |                  | reached the upper limit .                                                                                                  |
| ResourceNotAvailable                | Resource you requested is not available in this region or zone.                                                                                                                                       | 400              | The resource you requested is unavailable in the specified RegionId or ZoneId. Please try again in other regions or zones. |
| CategoryNotSupported                | The specified zone does not offer the specified disk category.                                                                                                                                        | 403              | You cannot create a disk of the specified disk category in the specified zone.                                             |
| DeleteWithInstance.Conflict         | The specified disk is not a portable disk and cannot be set to DeleteWithInstance attribute.                                                                                                          | 403              | You cannot specify DeleteWithInstance to true for the specified disk.                                                      |
| DependencyViolation.WindowsInstance | The instance creating is window, cannot use ssh key pair to login.                                                                                                                                    | 403              | Parameter KeyPairName is valid only for Linux instances.                                                                   |
| Forbidden                           | User not authorized to operate on the specified resource.                                                                                                                                             | 403              | You are not authorized to create the specified resource.                                                                   |
| ImageNotSubscribed                  | The specified image has not be subscribed.                                                                                                                                                            | 403              | The specified image is from the marketplace . Please subscribe it in advance.                                              |
| ImageNotSupportedInstanceType       | The specified image don't support the InstanceType instance.                                                                                                                                          | 403              | The specified image does not support the instance type.                                                                    |
| ImageRemovedInMarket                | The specified market image is not available, or the specified custom image includes product code because it is based on an image subscribed from marketplace, and that image in marketplace including | 403              | The specified image on the marketplace is unavailable. Or the product-code in the marketplace of the specified custom      |

| Error code                          | Error message                                                           | HTTP status code | Description                                                                                             |
|-------------------------------------|-------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------|
|                                     | exact the same product code has been removed.                           |                  | image has been removed.                                                                                 |
| InstanceDiskCategoryLimitExceed     | The total size of specified disk category in an instance exceeds.       | 403              | The specified disk category exceeds the maximum capacity of a single instance.                          |
| InstanceDiskNumLimitExceed          | The number of specified disk in an instance exceeds.                    | 403              | The number of data disks attached to one ECS instance must be less than 16.                             |
| InvalidDiskCategoryMismatch         | The specified disk categories combination is not supported.             | 403              | The combination of specified disk categories is not supported.                                          |
| InvalidDiskCategoryNotSupported     | The specified disk category is not support the specified instance type. | 403              | The specified disk category is not supported by the specified instance type .                           |
| InvalidDiskSizeTooSmall             | Specified disk size is less than the size of snapshot.                  | 403              | The capacity of the specified disk must be equal to or greater than the size of the specified snapshot. |
| InvalidInstanceTypeZoneNotSupported | The specified zone does not support this InstanceType.                  | 403              | The specified InstanceType cannot be created in the specified zone.                                     |
| InvalidNetworkTypeMismatchRamRole   | Ram role cannot be attached to instances of Classic network type.       | 403              | RAM roles cannot be attached to classic network instances.                                              |
| InvalidPayMethod                    | The specified billing method is not valid.                              | 403              | The specified billing method does not exist.                                                            |
| InvalidResourceTypeNotSupported     | This resource type is not supported; please try other resource types.   | 403              | The specified InstanceType is                                                                           |



| Error code                                  | Error message                                                                              | HTTP status code | Description                                                                                                                        |
|---------------------------------------------|--------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------|
|                                             |                                                                                            |                  | unavailable. Please try other instance types.                                                                                      |
| InnerServiceFailed                          | The request processing has failed due to some inner service error.                         | 403              | An internal server error.                                                                                                          |
| InvalidSnapshotId.NotDataDiskSnapshot       | The specified snapshot is system disk snapshot.                                            | 403              | A data disk cannot be created from the system disk snapshot.                                                                       |
| InvalidSnapshotId.NotReady                  | The specified snapshot has not completed yet.                                              | 403              | The snapshot has not been completed yet.                                                                                           |
| InvalidSystemDiskCategory.ValueUnauthorized | The disk category is not authorized.                                                       | 403              | You are not authorized to create a disk of the specified category.                                                                 |
| InvalidUser.PassRoleForbidden               | The RAM user does not have the privilege to pass a role.                                   | 403              | A RAM user must be <a href="#">granted</a> with a pass role permission before he or she specify RamRoleName for new ECS instances. |
| InvalidUserData.Forbidden                   | User not authorized to input the parameter UserData, please apply for permission UserData. | 403              | You are not authorized to configure the user data.                                                                                 |
| InvalidVSwitchId.NotFound                   | The VSwitchId provided does not exist in our records.                                      | 403              | The specified VSwitchId does not exist.                                                                                            |
| IoOptimized.NotSupported                    | The specified image is not support IoOptimized Instance.                                   | 403              | The specified image does not support the I/O optimized instances.                                                                  |
| IoOptimized.NotSupported                    | Vpc is not support IoOptimized instance.                                                   | 403              | I/O optimized instances are not supported in VPC.                                                                                  |
| OperationDenied                             | The specified snapshot is not allowed to create disk.                                      | 403              | The snapshot of the specified disk is not allowed to create a disk, or the snapshot                                                |

| Error code                  | Error message                                                                                                               | HTTP status code | Description                                                                                                                                                                                                   |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                             |                                                                                                                             |                  | is not allowed to create a disk.                                                                                                                                                                              |
| OperationDenied             | The creation of Instance to the specified Zone is not allowed.                                                              | 403              | An instance cannot be created in the specified zone. Or the specified zone is not in the specified region.                                                                                                    |
| OperationDenied             | The specified Image is disabled or is deleted.                                                                              | 403              | The specified image is unavailable or does not exist.                                                                                                                                                         |
| OperationDenied             | Sales of this resource are temporarily suspended in the specified region; please try again later.                           | 403              | The specified resource is out of stock. Please try other regions and zones.                                                                                                                                   |
| OperationDenied             | The capacity of snapshot exceeds the size limit of the specified disk category or the specified category is not authorized. | 403              | The specified <code>DataDisk.n.Size</code> is invalid. Or the maximum capacity of the specified <code>DataDisk.n.Size</code> has exceeded. Or you are not allowed to create a disk of the specified category. |
| OperationDenied             | The type of the disk does not support the operation.                                                                        | 403              | The specified disk type does not support this operation.                                                                                                                                                      |
| OperationDenied.<br>NoStock | Sales of this resource are temporarily suspended in the specified region; please try again later.                           | 403              | The specified instance type is out of stock. Please try other instance types in the region or try other regions and zones.                                                                                    |
| QuotaExceed.<br>BuyImage    | The specified image is from the image market, You have not bought it or your quota has been exceeded.                       | 403              | The specified image is from the marketplace. You must purchase it in advance. Or the image is out of stock                                                                                                    |

| Error code                         | Error message                                                     | HTTP status code | Description                                                                                                                                                                       |
|------------------------------------|-------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                    |                                                                   |                  | in the specified region. For more information, see <a href="#">Limits</a> .                                                                                                       |
| QuotaExceeded.PortableCloudDisk    | The quota of portable cloud disk exceeds.                         | 403              | The number of disks that can be attached to an instance has exceeded 16.                                                                                                          |
| RegionUnauthorized                 | There is no authority to create instance in the specified region. | 403              | You are not authorized to use the specified region.                                                                                                                               |
| SecurityGroupInstanceLimitExceeded | The maximum number of instances in a security group is exceeded.  | 403              | The maximum number of instances in the specified security group has exceeded.                                                                                                     |
| Zone.NotOnSale                     | The specified zone is not available for purchase.                 | 403              | The specified zone is unavailable for creating instance. You can try again in other regions or zones. Alternatively, the VSwitch you choose cannot be used in the specified zone. |
| Zone.NotOpen                       | The specified zone is not granted to you to buy resources yet.    | 403              | You are not authorized to create instances in the specified zone.                                                                                                                 |
| Zoneld.NotFound                    | The specified zone does not exists.                               | 403              | The specified Zoneld does not exist.                                                                                                                                              |
| DependencyViolation.IoOptimized    | The specified InstanceType must be IoOptimized instance.          | 404              | Only I/O optimized instances are allowed for the specified instance type.                                                                                                         |
| HOSTNAME_ILLEGAL                   | hostname is not valid.                                            | 404              | The specified HostName is invalid.                                                                                                                                                |
| InvalidDataDiskSnapshotId.NotFound | The specified parameter DataDisk.n.SnapshotId is not valid.       | 404              | The specified <code>DataDisk.n.</code>                                                                                                                                            |

| Error code                              | Error message                                                        | HTTP status code | Description                                                                                                   |
|-----------------------------------------|----------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------|
|                                         |                                                                      |                  | SnapshotId does not exist.                                                                                    |
| InvalidImageId.NotFound                 | The specified ImageId does not exist.                                | 404              | The specified ImageId does not exist.                                                                         |
| InvalidInstanceChargeType.NotFound      | The InstanceChargeType does not exist in our records.                | 404              | The specified InstanceChargeType does not exist.                                                              |
| InvalidKeyPairName.NotFound             | The specified KeyPairName does not exist in our records.             | 404              | The specified KeyPairName does not exist.                                                                     |
| InvalidRamRole.NotFound                 | The specified RamRoleName does not exist.                            | 404              | The specified RamRoleName does not exist.                                                                     |
| InvalidRegionId.NotFound                | The specified RegionId does not exist.                               | 404              | The specified RegionId does not exist.                                                                        |
| InvalidSecurityGroupId                  | The specified SecurityGroupId is invalid or does not exist.          | 404              | The specified SecurityGroupId does not exist. Or you are not authorized to use the specified SecurityGroupId. |
| InvalidSystemDiskSize                   | The specified parameter SystemDisk.Size is invalid.                  | 404              | The specified SystemDisk.Size is invalid.                                                                     |
| InvalidSystemDiskSize.LessThanImageSize | The specified parameter SystemDisk.Size is less than the image size. | 404              | The value of specified SystemDisk.Size must be greater than the image size.                                   |
| InvalidSystemDiskSize.LessThanMinSize   | The specified parameter SystemDisk.Size is less than the min size.   | 404              | The value of specified SystemDisk.Size must be less than the minimum capacity of the system disk.             |

| Error code                                | Error message                                                                     | HTTP status code | Description                                                                             |
|-------------------------------------------|-----------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------|
| InvalidSystemDiskSize.<br>MoreThanMaxSize | The specified parameter SystemDisk.Size is more than the max size.                | 404              | The value of specified SystemDisk.Size exceeds the maximum capacity of the system disk. |
| InvalidVSwitchId.<br>NotFound             | Specified virtual switch does not exist.                                          | 404              | The specified VSwitch does not exist.                                                   |
| InvalidZoneId.<br>NotFound                | The specified ZoneId does not exist.                                              | 404              | The specified ZoneId does not exist.                                                    |
| IoOptimized.<br>NotSupported              | The specified InstanceType is not support IoOptimized instance.                   | 404              | The instances of the specified instance type are not I/O optimized.                     |
| OperationDenied                           | Another Instance is being created.                                                | 404              | Another instance is being created. Please try again later.                              |
| PaymentMethodNotFound                     | No billing method has been registered on the account.                             | 404              | No payment method is registered for your account.                                       |
| InternalError                             | The request processing has failed due to some unknown error,exception or failure. | 500              | Internal error. Please try again later.                                                 |

## 5.2 CreateInstance

Create an ECS instance.

### Description



#### Note:

Before creating an instance, you can call [DescribeAvailableResource](#) to view the available resources in a specified region. [RunInstances](#) is recommended if you are going to create multiple instances in a single request.

You are billed when you launch ECS services, so make sure that you understand the billing methods of ECS instances (InstanceChargeType). And, you must maintain a sufficient balance in your linked credit card or PayPal account to complete the payment or preauthorization. For

more information, see [Subscription](#) (PrePaid) and [Pay-As-You-Go](#) (PostPaid). For a subscribed (PrePaid) instance, your available coupons are the first payment options by default.

When you call this interface, consider the following:

### Instance type

- When you create an instance, you can choose an I/O optimized instance.
- Once an instance is created with ephemeral SSDs, the instance type cannot be changed after the instance is created.

### Image

When you create an ECS instance, you must select an image for the system disk configuration. After an instance is created, the instance system disk becomes a clone of that image.

- If the instance memory is 512 MB, Windows OS is not supported.
- If the instance memory is 4 GB or larger, a 32-bit OS is not supported.

### Network

- To create an instance for a VPC network, you must specify the VPC network and a VSwitch when creating the instance. One instance can only belong to one VSwitch.
- If a VSwitchId is specified for creating an instance, SecurityGroupId and VSwitchId must belong to one VPC.
- If VSwitchId and PrivateIpAddress are specified at the same time, PrivateIpAddress must be within the CidrBlock of the VSwitch.
- PrivateIpAddress depends on VSwitchId and you must specify the VSwitch when you modify the PrivateIpAddress of your instance.
- You can call [AllocatePublicIpAddress](#) to assign a public IP address.
- When you create an instance, InternetChargeType and InternetMaxBandwidthOut determine the bandwidth costs. InternetMaxBandwidthIn is not related to billing, and the inbound data traffic for the instance is free.
- The relationship between InternetChargeType and InternetMaxBandwidthOut is shown in the following table.

| Parameter | InternetChargeType | InternetMaxBandwidthOut                           |
|-----------|--------------------|---------------------------------------------------|
| Values    | PayByTraffic       | You are billed according to actual traffic usage. |

### Security groups

- The security group must be created in advance by using the [CreateSecurityGroup](#) interface.
- You can specify the security group when creating the instance and change the instance security group by using the [ModifyInstanceAttribute](#) interface.
- Mutual access is allowed between instances in the same security group in the intranet. By default, firewalls are deployed between security groups, and mutual access between security groups is disabled. However, security group firewall permissions can be set through security group authorization (by using the interface for granting security group permissions). For more information, see [AuthorizeSecurityGroup](#) and [AuthorizeSecurityGroupEgress](#).
- The maximum number of instances in one security group is 1,000. If the security group exceeds this limit, an error message is displayed.

## Block Storage

- The maximum capacity of cloud disks varies according to disk categories:
  - A single basic cloud disk (cloud) cannot exceed 2,000 GB.
  - A single ultra cloud disk (cloud\_efficiency) cannot exceed 32 TB (32,768 GiB).
  - A single SSD cloud disk (cloud\_ssd) cannot exceed 32 TB (32,768 GiB).
  - A single ephemeral SSD (ephemeral\_ssd) cannot exceed 800 GB.
- ECS allocates a system disk of an appropriate size for the instance based on the the size of the specified image}. The available disk categories for system disk are basic cloud disk (cloud), ultra cloud disk (cloud\_efficiency), SSD cloud disk (cloud\_ssd), and ephemeral SSD disk (ephemeral\_ssd).
- You must be authorized to create ephemeral SSD disk (ephemeral\_ssd). By default, new users are not authorized.
- When an I/O optimized instance is selected, the system disk can choose only ultra cloud disk (cloud\_efficiency) or SSD cloud disk (cloud\_ssd).
- A maximum of 16 data disks can be added to one instance. By default, device names of data disks are allocated in order, starting from /dev/xvdb to /dev/xvdz. If you choose ephemeral SSD (ephemeral\_ssd) as the data disks of an instance, the system disk must be ephemeral SSD also. The total ephemeral SSD capacity of an instance, excluding the system disk, cannot exceed 1 TiB (1,024 GiB).
- ECS does not allow users to separately create or add an ephemeral SSD. Therefore, the ephemeral SSD must be specified during instance creation. For more information of disk category and size limits, see [Instance type families](#).

## User data

[User data](#) is provided by ECS for you to customize the startup behaviors of an ECS instance and to pass data into an ECS instance. UserData is encoded in Base64 format. User data transmission is not encrypted. We recommend that you do not contain confidential information, such as passwords or private keys, in plaintext.

## Others

When you call API in the Alibaba Cloud CLI and SDK, remove the period (.) from the request parameters that contain periods (.), such as `SystemDisk.Category`, `SystemDisk.Size`, `SystemDisk.Description`, `DataDisk.n.Size`, `DataDisk.n.Category`, `DataDisk.n.SnapshotId`, `DataDisk.n.DiskName`, `DataDisk.n.Description`, `DataDisk.n.DeleteWithInstance`.

For example, [CLI](#) and [SDK](#), use `SystemDiskCategory` instead of `SystemDisk.Category`.

## Request parameters

| Name                | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------|--------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action              | String | Yes      | The name of this interface. Value: <code>CreateInstance</code> .                                                                                                                                                                                                                                                                                                                   |
| RegionId            | String | Yes      | Region ID of an instance. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                                                                                                             |
| ImageId             | String | Yes      | ID of an image file. An image is a running environment template for ECS instances. The image ID. You can call <a href="#">DescribeImages</a> Describes your available image.<br>If you want to select image from the Alibaba Cloud marketplace, you can view the ImageId on the related image details page.                                                                        |
| InstanceType        | String | Yes      | Instance type. For more information, see <a href="#">Instance Type Family</a> , or call <a href="#">DescribeInstanceTypes</a> to view the latest instance type list.                                                                                                                                                                                                               |
| CreditSpecification | String | No       | Modifies the running mode of an unlimited credit enabled t5 instance. Optional values: <ul style="list-style-type: none"><li>Standard: The standard running mode. For more information, see <a href="#">t5 standard instances</a>.</li><li>Unlimited: The unlimited running mode. For more information, see <a href="#">t5 unlimited instances</a>.</li></ul> Default value: null. |



| Name                    | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SecurityGroupId         | String | Yes      | ID of the security group to which an ECS instance belongs. A security group is a firewall group that manages instances in the same region with the same security requirements and mutual trust.                                                                                                                                                                                                                                                                                   |
| ZoneId                  | String | No       | ID of a zone to which an instance belongs. If it is null, a zone is selected by the system. Default value: null.                                                                                                                                                                                                                                                                                                                                                                  |
| InstanceName            | String | No       | Name of an ECS instance. <ul style="list-style-type: none"> <li>It can contain [2, 128] characters in length, must begin with an English or Chinese character, and can contain digits, periods (.), colons (:), underscores (_), and hyphens (-).</li> <li>The instance name is displayed in the ECS console.</li> <li>If this parameter is not specified, the default value is the InstanceId of the instance.</li> <li>It cannot begin with "http://" or "https://".</li> </ul> |
| Description             | String | No       | Description of an ECS instance. <ul style="list-style-type: none"> <li>It can be [2, 256] characters in length.</li> <li>The description is displayed in the ECS console.</li> <li>Default value: null.</li> <li>It cannot begin with "http://" or "https://".</li> </ul>                                                                                                                                                                                                         |
| InternetChargeType      | String | No       | Internet billing method. Optional value: <ul style="list-style-type: none"> <li>PayByTraffic: You are billed based on the traffic usage.</li> </ul> Default: PayByTraffic.                                                                                                                                                                                                                                                                                                        |
| InternetMaxBandwidthIn  | String | No       | Maximum inbound bandwidth from the Internet, its unit of measurement is Mbit/s. Value range: <ul style="list-style-type: none"> <li>[1, 200].</li> </ul> Default value: 200.                                                                                                                                                                                                                                                                                                      |
| InternetMaxBandwidthOut | String | No       | Maximum outbound bandwidth to the Internet, its unit of measurement is Mbit/s. If this parameter is not specified, an error is returned. If necessary, you can open a ticket to request to change the bandwidth range to [1, 200] Mbit/s. Value range: <ul style="list-style-type: none"> <li>PayByTraffic: [0,100]</li> </ul>                                                                                                                                                    |

| Name                    | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------|---------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         |         |          | Default value: 0.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| HostName                | String  | No       | <ul style="list-style-type: none"> <li>It cannot start or end with a period (.) or a hyphen (-) and it cannot have two or more consecutive periods (.) or hyphens (-).</li> <li>For Windows: The host name can be [2, 15] characters in length. It can contain A-Z, a-z, numbers, periods (.), and hyphens (-). It cannot only contain numbers.</li> <li>For other operating systems: The host name can be [2, 64] characters in length. It can be segments separated by periods (.). It can contain A-Z, a-z, numbers, and hyphens (-).</li> </ul>                               |
| Password                | String  | No       | <p>Password of the ECS instance. The password can be [8, 30] characters in length. It must contain uppercase letters, lowercase letters, and numbers. The following special characters are allowed: ()~!@#\$%^&amp;*~+= {}[];:'&amp;lt;&gt;,.? /. A slash (/) cannot be the first character of Windows instances administrative password.</p> <div>  <b>Note:</b><br/>           If you specify a value for parameter Password, use HTTPS to call the API to avoid data breach.         </div> |
| PasswordInherit         | Boolean | No       | Whether to use the password pre-configured in the image you select or not. When PasswordInherit is specified, the Password must be null. For a secure access, make sure that the selected image has password configured.                                                                                                                                                                                                                                                                                                                                                          |
| IoOptimized             | String  | No       | <p>Whether it is an I/O-optimized instance or not. Optional values:</p> <ul style="list-style-type: none"> <li>none</li> <li>optimized</li> </ul> <p>For <a href="#">phased-out instance types</a>, the default value is none.</p> <p>For other instance types, the default value is optimized.</p>                                                                                                                                                                                                                                                                               |
| SystemDisk.<br>Category | String  | No       | <p>The category of the system disk. Optional values:</p> <ul style="list-style-type: none"> <li>Cloud: Basic cloud disk.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Name                   | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------|---------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        |         |          | <ul style="list-style-type: none"> <li>cloud_efficiency: Ultra cloud disk.</li> <li>cloud_ssd: Cloud SSD.</li> <li>ephemeral_ssd: Ephemeral SSD.</li> </ul> <p>For <i>phased-out instance types</i> and non-I/O optimized instances, the default value is cloud. Otherwise, the default value is cloud_efficiency.</p>                                                                      |
| SystemDisk.Size        | Integer | No       | Size of the system disk, measured in GiB. Value range: [20, 500]. The specified value must be equal to or greater than max{20, ImageSize}. Default value : max{40, ImageSize}.                                                                                                                                                                                                              |
| SystemDisk.DiskName    | String  | No       | <p>Name of the system disk.</p> <ul style="list-style-type: none"> <li>It can be [2, 128] characters in length, must begin with an English letter or Chinese character, and can contain digits, colons (:), underscores (_), or hyphens (-).</li> <li>The name is displayed in the ECS console.</li> <li>It cannot begin with http:// or https://.</li> <li>Default value: null.</li> </ul> |
| SystemDisk.Description | String  | No       | <p>Description of a system disk.</p> <ul style="list-style-type: none"> <li>It can be [2, 256] characters in length.</li> <li>The description is displayed in the ECS console.</li> <li>It cannot begin with http:// or https://.</li> <li>Default value: null.</li> </ul>                                                                                                                  |
| DataDisk.n.Size        | Integer | No       | <p>Size of the n data disk in GBs, n starts from 1. Optional values:</p> <ul style="list-style-type: none"> <li>cloud: [5, 2000]</li> <li>cloud_efficiency: [20, 32768]</li> <li>cloud_ssd: [20, 32768]</li> <li>ephemeral_ssd: [5, 800]</li> </ul> <p>The value must be equal to or greater than the specific snapshot (SnapshotId).</p>                                                   |
| DataDisk.n.Category    | String  | No       | <p>Category of the data disk n, the valid range of n is [1, 16]. Optional values:</p> <ul style="list-style-type: none"> <li>cloud: Basic cloud disk.</li> <li>cloud_efficiency: Ultra cloud disk.</li> <li>cloud_ssd: Cloud SSD.</li> </ul>                                                                                                                                                |

| Name                          | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------|---------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                               |         |          | <ul style="list-style-type: none"> <li>ephemeral_ssd: Ephemeral SSD.</li> </ul> Default value: cloud.                                                                                                                                                                                                                                                                                      |
| DataDisk.n.Encrypted          | Boolean | No       | Whether the data disk n is encrypted or not.<br>Optional values: <ul style="list-style-type: none"> <li>true: Encrypted.</li> <li>false: Not encrypted.</li> </ul> Default value: false.                                                                                                                                                                                                   |
| DataDisk.n.SnapshotId         | String  | No       | Snapshot is used to create the data disk. After the parameter DataDisk.n.SnapshotId is specified, parameter DataDisk.n.Size is ignored, and the size of a new disk is the size of the specified snapshot. If the specified snapshot was created on or before July 15, 2013, this invocation is denied, and an error InvalidSnapshot.TooOld is returned.                                    |
| DataDisk.n.DiskName           | String  | No       | Name of a data disk. <ul style="list-style-type: none"> <li>It can be [2, 128] characters in length. Must begin with an English letter or Chinese character. It can contain digits, colons (:), underscores (_), or hyphens (-).</li> <li>The data disk name is displayed in the ECS console.</li> <li>Cannot begin with "http://" or "https://".</li> <li>Default value: null.</li> </ul> |
| DataDisk.n.Description        | String  | No       | Description of a data disk. <ul style="list-style-type: none"> <li>It can be [2, 256] characters in length.</li> <li>The disk description is displayed in the console.</li> <li>It cannot begin with http:// or https://.</li> <li>Default value: null.</li> </ul>                                                                                                                         |
| DataDisk.n.DeleteWithInstance | Boolean | No       | Whether a data disk is released along with the instance or not. Optional values: <ul style="list-style-type: none"> <li>true: The disk is released with the instance.</li> <li>false: The disk is not released with the instance.</li> </ul> Default value: true. This parameter is only valid for an independent cloud disk, whose value of parameter DataDisk.n.Category is cloud        |

| Name                            | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------|---------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 |         |          | , <code>cloud_efficiency</code> , or <code>cloud_ssd</code> . If you specify a value to <code>DataDisk.n.DeleteWithInstance</code> for <code>ephemeral_ssd</code> , an error is returned.                                                                                                                                                                                                                                                                                                                                          |
| <code>HpcClusterId</code>       | String  | No       | The cluster ID to which the instance belongs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <code>VSwitchId</code>          | String  | No       | The VSwitch ID must be specified when you create a VPC-connected instance.                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <code>PrivateIpAddress</code>   | String  | No       | Private IP address of an ECS instance. <code>PrivateIpAddress</code> depends on <code>VSwitchId</code> and cannot be specified separately.                                                                                                                                                                                                                                                                                                                                                                                         |
| <code>InstanceChargeType</code> | String  | No       | Billing methods. Optional values: <ul style="list-style-type: none"> <li><code>PrePaid</code>: Monthly, or annual subscription. Make sure that your registered credit card is invalid or you have insufficient balance in your PayPal account. Otherwise, <code>InvalidPayMethod</code> error may occur.</li> <li><code>PostPaid</code>: Pay-As-You-Go.</li> </ul> Default value: <code>PostPaid</code> .                                                                                                                          |
| <code>SpotStrategy</code>       | String  | No       | The spot price you are willing to accept for a preemptible instance. It takes effect only when parameter <code>InstanceChargeType</code> is <code>PostPaid</code> . Optional values: <ul style="list-style-type: none"> <li><code>NoSpot</code>: A normal Pay-As-You-Go instance.</li> <li><code>SpotWithPriceLimit</code>: Sets the price threshold for a preemptible instance.</li> <li><code>SpotAsPriceGo</code>: A price that is based on the highest Pay-As-You-Go instance.</li> </ul> Default value: <code>NoSpot</code> . |
| <code>SpotPriceLimit</code>     | Float   | No       | The hourly price threshold for a preemptible instance, and it takes effect only when parameter <code>SpotStrategy</code> is <code>SpotWithPriceLimit</code> . Three decimal places are allowed at most.                                                                                                                                                                                                                                                                                                                            |
| <code>Period</code>             | Integer | No       | Unit: month. This parameter is valid and mandatory only when <code>InstanceChargeType</code> is set to <code>PrePaid</code> . Optional values: <ul style="list-style-type: none"> <li>1-9</li> <li>12</li> <li>24</li> </ul>                                                                                                                                                                                                                                                                                                       |

| Name            | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------|---------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |         |          | <ul style="list-style-type: none"> <li>36</li> <li>48</li> <li>60</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Periodunit      | String  | No       | <p>Value: Optional values: week   month. When PeriodUnit is Week,</p> <ul style="list-style-type: none"> <li>Period can be one of {"1", "2", "3", "4"}</li> <li>AutoRenewPeriod can be one of {"1", "2", "3"}</li> </ul> <p>When PeriodUnit is Month,</p> <ul style="list-style-type: none"> <li>Period can be one of {"1", "2", "3", "4", "5", "6", "7", "8", "9", "12", "24", "36", "48", "60"}</li> <li>AutoRenewPeriod can be one of {"1", "2", "3", "6", "12"}</li> </ul> <p>Default value: Month.</p> |
| AutoRenew       | String  | No       | <p>Whether to set AutoRenew. Whether to set AutoRenew. This parameter is valid when InstanceChargeType is PrePaid. Optional values:</p> <ul style="list-style-type: none"> <li>True: Enable automatic renewal.</li> <li>False: Disable automatic renewal.</li> </ul> <p>Default value: false.</p>                                                                                                                                                                                                           |
| AutoRenewPeriod | Integer | No       | <p>When AutoRenew is set to True, this parameter is required. Optional values:</p> <ul style="list-style-type: none"> <li>1</li> <li>2</li> <li>3</li> <li>6</li> <li>12</li> </ul>                                                                                                                                                                                                                                                                                                                         |
| UserData        | String  | No       | <p>The user data for an instance must be encoded in Base64 format. The maximum size of the user-defined data is 16 KB.</p>                                                                                                                                                                                                                                                                                                                                                                                  |
| ClientToken     | String  | No       | <p>Guarantees the idempotence of the request. The value is generated by a client and must be globally unique. Only ASCII characters are allowed. It can contain a maximum of 64 ASCII characters. For more information, see <a href="#">How to ensure idempotence</a>.</p>                                                                                                                                                                                                                                  |

| Name                        | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------|---------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KeyPairName                 | String  | No       | <p>The name of the key pair.</p> <ul style="list-style-type: none"> <li>This parameter is valid only for a Linux instance. For a Windows ECS instance, if a value is set for parameter KeyPairName, the password still takes effect. Default value: null. If a value is set for parameter KeyPairName, the Password still takes effect.</li> <li>The user name and password authentication method is disabled if a value is set for parameter KeyPairName for a Linux instance.</li> </ul> |
| DeploymentSetId             | String  | No       | Deployment Set ID. If you do not enter the value, 1 is used.                                                                                                                                                                                                                                                                                                                                                                                                                               |
| RamRoleName                 | String  | No       | The RAM role name of the instance. The name is provided and maintained by RAM and can be queried using <a href="#">ListRoles</a> . For more information, see <a href="#">CreateRole</a> and <a href="#">ListRoles</a> .                                                                                                                                                                                                                                                                    |
| SecurityEnhancementStrategy | String  | No       | <p>Whether or not to enable security enhancement. Optional values:</p> <ul style="list-style-type: none"> <li>Active: Enables the security enhancement feature and installs a free network security software. Only applicable to the Alibaba Cloud official images.</li> <li>Deactive: Disables the security enhancement feature. No network security software is installed. Applicable to all kinds of images.</li> </ul>                                                                 |
| Tag.n.Key                   | String  | No       | The key of a tag of which n is from 1 to 20. Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                                                                                                                                                                                                                                                                            |
| Tag.n.Value                 | String  | No       | The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                                                                                                                                                                                                                                                                   |
| DeletionProtection          | Boolean | No       | <p>Whether an instance can be released manually through the console or API (<a href="#">DeleteInstance</a>).</p> <ul style="list-style-type: none"> <li>true: Enable deletion protection.</li> </ul>                                                                                                                                                                                                                                                                                       |

| Name | Type | Required | Description                                                                                                                                                                                                                                                                                                                                                                      |
|------|------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |      |          | <ul style="list-style-type: none"><li>false (default value): Disable deletion protection.</li></ul> <div> <b>Note:</b><br/>This attribute applies to the Pay-As-You-Go instances. However, it can only restrict the manual release operation, not the release operation by Alibaba Cloud.</div> |

### Response parameters

| Name       | Type   | Description                                                            |
|------------|--------|------------------------------------------------------------------------|
| InstanceId | String | ID of the ECS instance. It is a unique identifier of the ECS instance. |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=CreateInstance
&RegionId=cn-hangzhou
&ImageId=_32_23c472_20120822172155_aliguest.vhd
&SecurityGroupId=sg-c0003e8b9
&HostName=Bctest01
&InstanceType=ecs.t1.small
&<Common Response Parameters>
```

#### XML format

```
<CreateInstanceResponse>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FE73368</RequestId>
  <InstanceId>i-instance1</InstanceId>
</CreateInstanceResponse>
```

#### JSON format

```
{
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FE73368",
  "InstanceId": "i-instance1"
}
```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).



| Error code                                | Error message                                                                                                                                | HTTP status code | Description                                                                                          |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------|
| Account.Arrearage                         | Your account has an outstanding payment.                                                                                                     | 400              | Your account has an overdue payment.                                                                 |
| IncorrectVSwitchStatus                    | The current status of virtual switch does not support this operation.                                                                        | 400              | The status of the specified VSwitch does not support the operation.                                  |
| InstanceDiskCategoryLimitExceed           | The specified DataDisk.n.Size beyond the permitted range, or the capacity of snapshot exceeds the size limit of the specified disk category. | 400              | The specified DataDisk.n.Size exceeds the maximum size of the specified disk category.               |
| InstanceDiskNumberLimitExceed             | The total number of specified disk in an instance exceeds.                                                                                   | 400              | The number of data disks attached to one ECS exceeds 16.                                             |
| InvalidAutoRenewPeriod.ValueNotSupported  | The specified autoRenewPeriod is not valid.                                                                                                  | 400              | The specified AutoRenewPeriod is invalid.                                                            |
| InvalidDataDiskCategory.ValueNotSupported | The specified parameter DataDisk.n.Category is not valid.                                                                                    | 400              | The specified DataDisk.n.Category is invalid.                                                        |
| InvalidDataDiskSize.ValueNotSupported     | The specified DataDisk.n.Size beyond the permitted range, or the capacity of snapshot exceeds the size limit of the specified disk category. | 400              | The specified DataDisk.n.Size is invalid or exceeds the maximum size of the specified disk category. |
| InvalidDescription.Malformed              | The specified parameter Description is not valid.                                                                                            | 400              | The specified Description is invalid.                                                                |
| InvalidDiskCategory.Mismatch              | The specified disk categories' combination is not supported.                                                                                 | 400              | The combination of specified disk categories is not supported.                                       |

| Error code                                | Error message                                                                              | HTTP status code | Description                                                                    |
|-------------------------------------------|--------------------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------|
| InvalidDiskCategory.<br>ValueNotSupported | The specified parameter DiskCategory is not valid.                                         | 400              | The specified DiskCategory is invalid.                                         |
| InvalidDiskDescription.<br>Malformed      | The specified parameter SystemDisk.DiskDescription or DataDisk.n.Description is not valid. | 400              | The specified SystemDisk.DiskDescription or DataDisk.n.Description is invalid. |
| InvalidDiskName.<br>Malformed             | The specified parameter SystemDisk.DiskName or DataDisk.n.DiskName is not valid.           | 400              | The specified SystemDisk.DiskName or DataDisk.n.DiskName is invalid.           |
| InvalidHostName.<br>Malformed             | The specified parameter HostName is not valid.                                             | 400              | The specified HostName is invalid.                                             |
| InvalidHpcClusterId.<br>NotFound          | The specified HpcClusterId is not found.                                                   | 400              | The specified HpcClusterId does not exist.                                     |
| InvalidHpcClusterId.<br>Creating          | The specified HpcClusterId is creating.                                                    | 400              | The specified HpcClusterId is being created. Please try again later.           |
| InvalidHpcClusterId.<br>Unnecessary       | The specified HpcClusterId is unnecessary.                                                 | 400              | You can specify the only for certain InstanceType.                             |
| InvalidVSwitchId.<br>Necessary            | The HpcClusterId is necessary.                                                             | 400              | For the specified InstanceType, you must specify the HpcClusterId.             |
| InvalidInstanceName.<br>Malformed         | The specified parameter InstanceName is not valid.                                         | 400              | The specified InstanceName is invalid.                                         |
| InvalidInstanceType.                      | The specified InstanceType beyond the permitted range.                                     | 400              | The specified InstanceType is                                                  |

| Error code                                      | Error message                                                                                              | HTTP status code | Description                                                                                                      |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------|
| ValueNotSupported                               |                                                                                                            |                  | invalid or does not exist.                                                                                       |
| InvalidInstanceType.<br>ValueUnauthorized       | The specified InstanceType is not authorized.                                                              | 400              | The specified InstanceType is unauthorized.                                                                      |
| InvalidInternetChargeType.<br>ValueNotSupported | The specified InternetChargeType is not valid.                                                             | 400              | The specified InternetChargeType does not exist.                                                                 |
| InvalidIoOptimizedValue.<br>ValueNotSupported   | IoOptimized value not supported.                                                                           | 400              | The specified IoOptimized is invalid or does not exist.                                                          |
| InvalidIPAddress.<br>AlreadyUsed                | The specified IPAddress is already used by other resource.                                                 | 400              | The specified PrivateIpAddress already exists.                                                                   |
| InvalidNetworkType.<br>Mismatch                 | Specified parameter InternetMaxBandwidthIn or InternetMaxBandwidthOut conflict with instance network type. | 400              | The specified InternetMaxBandwidthIn or InternetMaxBandwidthOut does not match the network type of the instance. |
| InvalidSpotStrategy                             | The specified SpotStrategy is not valid.                                                                   | 400              | The parameter SpotStrategy is invalid.                                                                           |
| InvalidSpotPriceLimit                           | The specified SpotPriceLimit is not valid.                                                                 | 400              | The parameter SpotPriceLimit is invalid.                                                                         |
| InvalidSpotAuthorized                           | The specified Spot param is unauthorized.                                                                  | 400              | You cannot create a preemptible instance.                                                                        |
| InvalidSpotPrepaid                              | The specified Spot type is not support PrePay Instance.                                                    | 400              | The billing method Subscription is not applicable for preemptible instance.                                      |

| Error code                                 | Error message                                                                    | HTTP status code | Description                                                                                                 |
|--------------------------------------------|----------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------|
| InvalidSpotPriceLimit.LowerThanPublicPrice | The specified parameter spotPriceLimit can't be lower than current public price. | 400              | The specified SpotPriceLimit must be equal to or greater than the official price of the specified instance. |
| InvalidNetworkType.Mismatch                | Specified parameter InternetChargeType conflict with instance network type.      | 400              | The specified InternetChargeType is invalid for the network type of the instance.                           |
| InvalidNodeControllerId.Malformed          | The specified parameter NodeControllerId is not valid.                           | 400              | The specified NodeControllerId is invalid.                                                                  |
| InvalidParameter                           | The specified parameter InternetMaxBandwidthOut is not valid.                    | 400              | The specified InternetMaxBandwidthOut is invalid or exceeds the maximum rate.                               |
| InvalidParameter                           | The specified instance bandwidth is not valid.                                   | 400              | The specified range of bandwidth is invalid.                                                                |
| InvalidParameter.Bandwidth                 | The specified parameter Bandwidth is not valid.                                  | 400              | The specified instance bandwidth is not valid.                                                              |
| EncryptedOption.Conflict                   | Encryption value of disk and snapshot conflict.                                  | 400              | Both the specified data disk and the specified snapshot must be encrypted or not at the same time.          |
| InvalidParameter.Conflict                  | The specified image does not support the specified instance type.                | 400              | You cannot use the specified image to create an ECS instance of the specified InstanceType.                 |
| InvalidParameter.Encrypted.KmsNotEnabled   | The encrypted disk need enable KMS.                                              | 400              | You have not enabled the Key Management Service (KMS) service.                                              |

| Error code                             | Error message                                                            | HTTP status code | Description                                                                                                                  |
|----------------------------------------|--------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------|
| InvalidParameter.EncryptedIllegal      | The value of parameter Encrypted is illegal.                             | 400              | The specified DataDisk.n.Encrypted is invalid.                                                                               |
| InvalidParameter.EncryptedNotSupported | Encrypted disk is not support in this region.                            | 400              | You cannot encrypt the data disk in the specified region.                                                                    |
| InvalidParameter.EncryptedNotSupported | Corresponding data disk category does not support encryption.            | 400              | You cannot encrypt the data disk of the specified DataDisk.n.Category.                                                       |
| InvalidParameter.Mismatch              | Specified security group and virtual switch are not in the same VPC.     | 400              | Both the specified security group and the specified VSwitch must be in the same VPC.                                         |
| InvalidParameter.Mismatch              | Specified virtual switch is not in the specified zone.                   | 400              | The specified VSwitch is not in the specified zone.                                                                          |
| InvalidPassword.Malformed              | The specified parameter Password is not valid.                           | 400              | The specified Password is invalid.                                                                                           |
| InvalidPrivateIpAddress                | Specified private IP address is not in the CIDR block of virtual switch. | 400              | You must specify the PrivateIpAddress in the form of a Classless Inter-Domain Routing (CIDR) block of the specified VSwitch. |
| InvalidPrivateIpAddress.Duplicated     | Specified private IP address is duplicated.                              | 400              | The specified PrivateIpAddress already exists.                                                                               |
| InvalidPrivateIpAddress.Malformed      | Specified private IP address is malformed.                               | 400              | The specified PrivateIpAddress is invalid.                                                                                   |
| InvalidPasswordParam.Mismatch          | The input password should be null when passwdInherit is true.            | 400              | When PasswordInherit is specified, the Password must be null.                                                                |

| Error code                                  | Error message                                                                                | HTTP status code | Description                                                               |
|---------------------------------------------|----------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------|
| InvalidSnapshotId.BasedSnapshotsTooOld      | The specified snapshot is created before 2013-07-15.                                         | 400              | The specified DataDisk.n.SnapshotId was created before July 15, 2013.     |
| InvalidSpotAliUid                           | The specified UID is not authorized to use SPOT instance.                                    | 400              | You are not authorized to purchase a preemptible instance.                |
| InvalidSystemDiskCategory.ValueNotSupported | The specified parameter SystemDisk.Category is not valid.                                    | 400              | The specified SystemDisk.Category is invalid.                             |
| InvalidUserData.NotSupported                | The specified parameter UserData only support the vpc and IoOptimized Instance.              | 400              | You can only specify UserData for I/O optimized VPC-connected instances.  |
| InvalidUserData.SizeExceeded                | The specified parameter UserData exceeds the size.                                           | 400              | The size of the UserData has exceeded 16 KB.                              |
| MissingParameter                            | The input parameter VSwitchId that is mandatory for processing this request is not supplied. | 400              | The VSwitchId parameter is required.                                      |
| MissingParameter                            | The specified parameter Period is not null.                                                  | 400              | The Period parameter is required.                                         |
| QuotaExceeded.AfterpayInstance              | The maximum number of Pay-As-You-Go instances is exceeded.                                   | 400              | The maximum number of Pay-As-You-Go instances is exceeded.                |
| QuotaExceeded                               | Living instances quota exceeded in this VPC.                                                 | 400              | The number of instances in the specified VPC has reached the upper limit. |
| QuotaExceeded.PrivateIpAddress              | Don't have enough private IPs in this switch.                                                | 400              | Insufficient number of PrivateIpAddress in the specified VSwitch.         |

| Error code                          | Error message                                                                                                                                                     | HTTP status code | Description                                                                                                                  |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------|
| ResourceNotAvailable                | Resource you requested is not available in this region or zone.                                                                                                   | 400              | The resource you requested is unavailable in the specified RegionId or ZoneId. Please try again in another regions or zones. |
| CategoryNotSupported                | The specified zone does not offer the specified disk category.                                                                                                    | 403              | You cannot create a disk of the specified disk category in the specified zone.                                               |
| DeleteWithInstance.Conflict         | The specified disk is not a portable disk and cannot be set to DeleteWithInstance attribute.                                                                      | 403              | You cannot specify DeleteWithInstance to true for the specified disk.                                                        |
| DependencyViolation.WindowsInstance | The instance creating is window, cannot use ssh key pair to login.                                                                                                | 403              | Parameter KeyPairName is valid only for a Linux instance.                                                                    |
| DeploymentSet.NoRoom                | There is no room for more instance creation in the specified Deployment Set.                                                                                      | 403              | No more instances can be created in the specified DeploymentSetId.                                                           |
| Forbidden                           | User not authorized to operate on the specified resource.                                                                                                         | 403              | You are not allowed to operate the specified resource.                                                                       |
| ImageNotSubscribed                  | The specified image has not be subscribed.                                                                                                                        | 403              | The specified image on the marketplace is not subscribed.                                                                    |
| ImageNotSupportInstanceType         | The specified image don't support the InstanceType instance.                                                                                                      | 403              | The specified image does not support the instance type.                                                                      |
| ImageRemovedInMarket                | The specified market image is not available, or the specified custom image includes product code because it is based on an image subscribed from marketplace, and | 403              | The specified image on the marketplace is unavailable, or the image on the marketplace                                       |

| Error code                            | Error message                                                                     | HTTP status code | Description                                                                                             |
|---------------------------------------|-----------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------|
|                                       | that image in marketplace including exact the same product code has been removed. |                  | corresponding to the product code is unavailable.                                                       |
| InstanceDiskCategoryLimitExceed       | The total size of specified disk category in an instance exceeds.                 | 403              | The specified disk category exceeds the maximum capacity of a single instance.                          |
| InstanceDiskNumLimitExceed            | The number of specified disk in an instance exceeds.                              | 403              | The number of data disks attached to one ECS must be less than 16.                                      |
| InvalidDiskCategoryMismatch           | The specified disk categories combination is not supported.                       | 403              | The combination of specified disk categories is not supported.                                          |
| InvalidDiskCategoryNotSupported       | The specified disk category is not support the specified instance type.           | 403              | The specified disk category is not supported by the specified instance type .                           |
| InvalidDiskSizeTooSmall               | Specified disk size is less than the size of snapshot.                            | 403              | The capacity of the specified disk must be equal to or greater than the size of the specified snapshot. |
| InvalidInstanceTypeZoneNotSupported   | The specified zone does not support this InstanceType.                            | 403              | The specified InstanceType cannot be created in the specified zone.                                     |
| InvalidNetworkTypeMismatchRamRole     | Ram role cannot be attached to instances of Classic network type.                 | 403              | RAM roles cannot be attached to classic network instances.                                              |
| InvalidParameter.ResourceOwnerAccount | ResourceOwnerAccount is Invalid.                                                  | 403              | The specified ResourceOwnerAccount is invalid.                                                          |



| Error code                                      | Error message                                                         | HTTP status code | Description                                                                                                                         |
|-------------------------------------------------|-----------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| InvalidPayMethod                                | The specified billing method is not valid.                            | 403              | The specified billing method does not exist.                                                                                        |
| InvalidResourceType.<br>NotSupported            | This resource type is not supported; please try other resource types. | 403              | The specified InstanceType is unavailable. Please try other instance types.                                                         |
| InvalidSnapshotId.<br>NotDataDiskSnapshot       | The specified snapshot is system disk snapshot.                       | 403              | A data disk cannot be created from the system disk snapshot.                                                                        |
| InvalidSnapshotId.<br>NotReady                  | The specified snapshot has not completed yet.                         | 403              | The snapshot has not been completed yet.                                                                                            |
| InvalidSystemDiskCategory.<br>ValueUnauthorized | The disk category is not authorized.                                  | 403              | You are not allowed to create a disk of the specified category.                                                                     |
| InvalidUser.<br>PassRoleForbidden               | The RAM user does not have the privilege to pass a role.              | 403              | A RAM user must be <a href="#">granted</a> with a pass role permission before he or she specify RamRoleName for a new ECS instance. |
| InvalidVSwitchId.<br>NotFound                   | The VSwitchId provided does not exist in our records.                 | 403              | The specified VSwitchId does not exist.                                                                                             |
| IoOptimized.<br>NotSupported                    | The specified image is not support IoOptimized Instance.              | 403              | The instances of the specified instance type are not I/O optimized.                                                                 |
| IoOptimized.<br>NotSupported                    | Vpc is not support IoOptimized instance.                              | 403              | I/O optimized instances are not supported in VPC.                                                                                   |
| OperationDenied                                 | The specified snapshot is not allowed to create disk.                 | 403              | The snapshot of the specified disk is not allowed to create a disk, or the snapshot is not allowed to create a disk.                |

| Error code                  | Error message                                                                                                               | HTTP status code | Description                                                                                                                                                                         |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OperationDenied             | The creation of Instance to the specified Zone is not allowed.                                                              | 403              | The specified ZoneId is not in the specified RegionId. Or an instance cannot be created for the specified zone                                                                      |
| OperationDenied             | The specified Image is disabled or is deleted.                                                                              | 403              | The specified image does not exist.                                                                                                                                                 |
| OperationDenied             | Sales of this resource are temporarily suspended in the specified region; please try again later.                           | 403              | The specified zone is unavailable for creating Pay-As-You-Go instances.                                                                                                             |
| OperationDenied             | The capacity of snapshot exceeds the size limit of the specified disk category or the specified category is not authorized. | 403              | The specified DataDisk.n.Size is invalid. Or the maximum capacity of the specified DataDisk .n.Size is exceeded. Or you are not allowed to create a disk of the specified category. |
| OperationDenied             | The type of the disk does not support the operation.                                                                        | 403              | The specified disk type does not support this operation.                                                                                                                            |
| OperationDenied.<br>NoStock | Sales of this resource are temporarily suspended in the specified region; please try again later.                           | 403              | The specified instance type is out of stock . Please try other instance types in the region or try other regions and zones.                                                         |
| QuotaExceed.<br>BuyImage    | The specified image is from the image market, You have not bought it or your quota has been exceeded.                       | 403              | The specified image is from the marketplace. You must purchase it in advance or the image is out of stock in the specified region.                                                  |

| Error code                         | Error message                                                     | HTTP status code | Description                                                                                           |
|------------------------------------|-------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------|
| QuotaExceeded.PortableCloudDisk    | The quota of portable cloud disk exceeds.                         | 403              | The number of cloud disks that can be attached to an instance has exceeded 16.                        |
| RegionUnauthorized                 | There is no authority to create instance in the specified region. | 403              | You are not authorized to use the specified region.                                                   |
| SecurityGroupInstanceLimitExceeded | The maximum number of instances in a security group is exceeded.  | 403              | The maximum number of instances in the specified security group is exceeded.                          |
| Zone.NotOnSale                     | The specified zone is not available for purchase.                 | 403              | The specified zone is unavailable for creating instance. You can try again in other regions or zones. |
| Zone.NotOpen                       | The specified zone is not granted to you to buy resources yet.    | 403              | You are not allowed to create instances in the specified zone.                                        |
| ZoneId.NotFound                    | The specified zone does not exist.                                | 403              | The specified ZoneId does not exist.                                                                  |
| DependencyViolation.IoOptimized    | The specified InstanceType must be ioOptimized instance.          | 404              | Only I/O optimized instances are allowed for the specified instance type.                             |
| HOSTNAME_ILLEGAL                   | hostname is not valid.                                            | 404              | The specified HostName is invalid.                                                                    |
| InvalidDataDiskSnapshotId.NotFound | The specified parameter DataDisk.n.SnapshotId is not valid.       | 404              | The specified DataDisk.n.SnapshotId does not exist.                                                   |
| InvalidDeploymentSetId.NotFound    | The specified DeploymentSetId does not exist.                     | 404              | The specified DeploymentSetId does not exist.                                                         |

| Error code                              | Error message                                                        | HTTP status code | Description                                                                                                   |
|-----------------------------------------|----------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------|
| InvalidImageId.NotFound                 | The specified ImageId does not exist.                                | 404              | The specified ImageId does not exist.                                                                         |
| InvalidInstanceChargeType.NotFound      | The InstanceChargeType does not exist in our records.                | 404              | The specified InstanceChargeType does not exist.                                                              |
| InvalidKeyPairName.NotFound             | The specified KeyPairName does not exist in our records.             | 404              | The specified KeyPairName does not exist.                                                                     |
| InvalidRamRole.NotFound                 | The specified RamRoleName does not exist.                            | 404              | The specified RamRoleName does not exist.                                                                     |
| InvalidRegionId.NotFound                | The specified RegionId does not exist.                               | 404              | The specified RegionId does not exist.                                                                        |
| InvalidSecurityGroupId.NotFound         | The specified SecurityGroupId does not exist.                        | 404              | The specified SecurityGroupId does not exist. Or you are not authorized to use the specified SecurityGroupId. |
| InvalidSystemDiskSize                   | The specified parameter SystemDisk.Size is invalid.                  | 404              | The specified SystemDisk.Size is invalid.                                                                     |
| InvalidSystemDiskSize.LessThanImageSize | The specified parameter SystemDisk.Size is less than the image size. | 404              | The value of specified SystemDisk.Size must be greater than the image size.                                   |
| InvalidSystemDiskSize.LessThanMinSize   | The specified parameter SystemDisk.Size is less than the min size.   | 404              | The value of specified SystemDisk.Size must be less than the minimum capacity of the system disk.             |
| InvalidSystemDiskSize.MoreThanMaxSize   | The specified parameter SystemDisk.Size is more than the max size.   | 404              | The value of specified SystemDisk.Size exceeds the maximum                                                    |

| Error code                | Error message                                                                     | HTTP status code | Description                                                         |
|---------------------------|-----------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------|
|                           |                                                                                   |                  | capacity of the system disk.                                        |
| InvalidVSwitchId.NotFound | Specified virtual switch does not exist.                                          | 404              | The specified VSwitch does not exist.                               |
| InvalidZoneId.NotFound    | The specified ZoneId does not exist.                                              | 404              | The specified ZoneId does not exist.                                |
| IoOptimized.NotSupported  | The specified InstanceType is not support IoOptimized instance.                   | 404              | The instances of the specified instance type are not I/O optimized. |
| OperationDenied           | Another Instance is being created.                                                | 404              | Another Instance is being created.                                  |
| PaymentMethodNotFound     | No billing method has been registered on the account.                             | 404              | No payment method is registered for your account.                   |
| InternalError             | The request processing has failed due to some unknown error,exception or failure. | 500              | Internal error. Please try again later.                             |

## 5.3 StartInstance

Start a specified instance.

### Description

- You can only run this interface when the instance is in **Stopped** (Stopped) status.
- After you run this interface successfully, the specified instance is in **Starting** (Starting) status.
- If the specified instance is *locked*, and the OperationLocks of the instance indicates LockReason: "security", you cannot start the instance.

### Request parameters

| Name       | Type   | Required | Description                                       |
|------------|--------|----------|---------------------------------------------------|
| Action     | String | Yes      | The name of this interface. Value: StartInstance. |
| InstanceId | String | Yes      | ID of the instance.                               |

| Name          | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------|---------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| InitLocalDisk | Boolean | No       | Applicable to instance types of D1, I1, and I2 <a href="#">instance type family</a> . Recover to the previous normal status of your local disk when exceptions occurs.<br>Optional values: <ul style="list-style-type: none"><li>true: Recover the local disk to the previous normal status. The accumulated data starting from the previous normal status is overwritten.</li><li>false: Skip the recovery, and keep the status of the local disk unchanged.</li></ul> |

### Response parameters

All parameters are common response parameters. For more information, see [Common parameters](#).

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=StartInstance
&InstanceId=i-instance1
&<Common Request Parameters>
```

#### Response example

#### XML format

```
<StartInstanceResponse>
  <RequestId>C0003E8B-B930-4F59-ADC0-0E20xxxxxxx</RequestId>
```

```
</StartInstanceResponse>
```

### JSON format

```
{
  "RequestId": "C0003E8B-B930-4F59-ADC0-0E20xxxxxxxxx"
}
```

### Error codes

Error codes specific to this interface are as follows. For more error codes, see [API Error Center](#).

| Error code                 | Error message                                                                      | HTTP status code | Meaning                                                                                            |
|----------------------------|------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------|
| DiskError                  | Incorrect Disk Status                                                              | 403              | Your disk is in an abnormal status.                                                                |
| IncorrectInstanceStatus    | The current status of the resource does not support this operation.                | 403              | The current state of the instance does not support this operation.                                 |
| InstanceExpired            | PrePaid instances has been expired.                                                | 403              | The Subscription instance has expired. The Pay-As-You-Go instance has been in outstanding payment. |
| InstanceLockedForSecurity  | The specified operation is denied as your instance is locked for security reasons. | 403              | Operation is denied because the resource is locked for security reasons.                           |
| InsufficientBalance        | Your account does not have enough balance.                                         | 403              | The instance cannot be started because the account does not have enough balance.                   |
| InvalidInstanceId.NotFound | The specified InstanceId does not exist.                                           | 404              | The specified InstanceId does not exist.                                                           |
| InstanceNotReady           | The specified instance is not ready for use                                        | 500              | The specified instance is being created.                                                           |
| InternalError              | The request processing has failed due to some unknown error.                       | 500              | Internal error, please try again later.                                                            |

## 5.4 StopInstance

Stops an ECS instance.

### Description

- You can only stop an instance in **Running**(Running) status.
- The instance becomes **Stopping** (Stopping) after a successful API request, and the instance becomes **Stopped** (Stopped) after it is stopped successfully.
- You can force an instance to stop, and the force stop operation is same as the power failure. The temporary files and data in the instance may be lost.
- If the specified instance is *locked*, and the OperationLocks of the instance indicates LockReason: security, you cannot stop the instance.
- If a *local disk* is configured in an instance from the *I1 type family*, the request parameter ConfirmStop is required. The interface can only be called successfully when the parameter ConfirmStop is set to **True**.
- For an instance from the I1 type family that has a local disk configured, after it is stopped, the data of the local disk is cleared. We recommend that you implement data redundancy at the application layer to guarantee the data availability.
- This API automatically ignores the parameter ConfirmStop for all of the instance types except the instance of I1 type family.
- After you enable the feature of *No fees for stopped instances* for a VPC instance, you can set StoppedMode=KeepCharging to disable the feature, you are billed after the instance is stopped, and its resource and Internet IP address are reserved.

### Request parameters

| Name       | Type   | Required | Description                                                 |
|------------|--------|----------|-------------------------------------------------------------|
| Action     | String | Yes      | The name of this interface. Value: StopInstance.            |
| InstanceId | String | Yes      | The specified instance ID.                                  |
| ForceStop  | String | No       | Whether to force shutdown upon device restart. Value range: |



| Name        | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                       |
|-------------|---------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             |         |          | <ul style="list-style-type: none"><li>• true: Force the instance to shut down.</li><li>• false: The instance shuts down normally.</li></ul> Default value: false.                                                                                                                                                                                                 |
| ConfirmStop | Boolean | No       | Whether to stop an I1 ECS instance or not. A required parameter for I1 type family instance, it only takes effect when the instance is of I1 type family. Optional values: <ul style="list-style-type: none"><li>• true</li><li>• false</li></ul> Default value: false.                                                                                           |
| StoppedMode | String  | No       | Whether a VPC ECS instance is billed after it is stopped or not. Optional value: KeepCharging. After you enable the feature of <b>No fees for stopped instances for a VPC instance</b> , you can set StoppedMode=KeepCharging to disable the feature, the ECS instance will be billed after it is stopped, and its resource and Internet IP address are reserved. |

## Response parameters

All parameters are common response parameters. For more information, see [Common parameters](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=StopInstance
&InstanceId=i-instance1
&<Common Request Parameters>
```

### Response example

#### XML format

```
<StopInstanceResponse>
  <RequestId>1C488B66-B819-4D14-8711-C4EAAA13AC01</RequestId>
</StopInstanceResponse>
```

#### JSON format

```
{
  "RequestId": "1C488B66-B819-4D14-8711-C4EAAA13AC01"
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                     | Error message                                                                      | HTTP status code | Meaning                                                                            |
|--------------------------------|------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------|
| DiskError                      | IncorrectDiskStatus                                                                | 403              | The specified ForceStop is invalid, the parameter is not in the enumerated range . |
| InstanceLockedForSecurity      | The specified operation is denied as your instance is locked for security reasons. | 403              | The resource is currently locked down and the operation is denied.                 |
| IncorrectInstanceStatus        | The current status of the resource does not support this operation.                | 403              | The current status of the resource does not support the operation.                 |
| InstanceType.ParameterMismatch | The input parameter ConfirmStop must be                                            | 403              | The instance is locked for security reasons.                                       |

| Error code                 | Error message                            | HTTP status code | Meaning                                  |
|----------------------------|------------------------------------------|------------------|------------------------------------------|
|                            | true when an instance have localstorage. |                  |                                          |
| InvalidInstanceId.NotFound | The specified InstanceId does not exist. | 404              | The specified InstanceId does not exist. |

## 5.5 RebootInstance

Restarts an ECS instance.

### Description

- You can only restart an ECS instance that is in the **Running** (Running) status.
- After an ECS instance is restarted, its intermediate status is **Starting** (Starting).
- An instance can be forcefully stopped. Forcing an instance to stop (ForceStop) is same as a power failure. The temporary data and files in the instance may be lost.
- If the specified instance is *locked*, and the OperationLocks of the instance indicates "LockReason" : "security", you cannot restart the instance.

### Request parameters

| Name       | Type   | Required | Description                                                                                                                                                                                                                                                          |
|------------|--------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action     | String | Yes      | The name of this interface. Value: RebootInstance.                                                                                                                                                                                                                   |
| InstanceId | String | Yes      | The specified instance ID.                                                                                                                                                                                                                                           |
| ForceStop  | String | No       | Whether to force shutting down the instance before it restarts. Optional values: <ul style="list-style-type: none"><li>• true: Forces shutting down the instance before it restarts.</li><li>• false: Shuts down the instance normally before it restarts.</li></ul> |

| Name | Type | Required | Description           |
|------|------|----------|-----------------------|
|      |      |          | Default value: false. |

## Response parameters

All are common response parameters. For more information, see [Common parameters](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=RebootInstance
&InstanceId=i-instance1
&<Common Request Parameters>
```

### Response example

#### XML format

```
<RebootInstanceResponse>
  <RequestId>F2E2C40D-AB09-45A1-B5C5-EB9F5C4E4E4A</RequestId>
</RebootInstanceResponse>
```

#### JSON format

```
{
  "RequestId": "F2E2C40D-AB09-45A1-B5C5-EB9F5C4E4E4A"
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                 | Error message                                                                      | HTTP status code | Meaning                                                         |
|----------------------------|------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------|
| DiskError                  | IncorrectDiskStatus.                                                               | 403              | Abnormal disk status.                                           |
| IncorrectInstanceStatus    | The current status of the resource does not support this operation.                | 403              | You can only restart an ECS instance that is in Running status. |
| InstanceLockedForSecurity  | The specified operation is denied as your instance is locked for security reasons. | 403              | Your instance is locked for security reasons.                   |
| InvalidInstanceId.NotFound | The specified InstanceId does not exist.                                           | 404              | The specified InstanceId does not exist.                        |

## 5.6 DeleteInstance

Release a Pay-As-You-Go or expired Subscription instance.

### Description

- You can only release an instance that is in the **Stopped** (Stopped) status.
- After the instance is released, all the physical resources used by the instance are recycled, removed, and impossible to recover. The attached cloud disks with the property of `DeleteWithInstance=True` are also released. The automatic snapshots of these disks with the property of `DeleteAutoSnapshot` being `DeleteAutoSnapshot=false` are retained, and automatic snapshots with the property of `DeleteAutoSnapshot=true` are released.
- If the instance is under [security control](#) and `OperationLocks` indicates `"LockReason": "security"`, even if the property of `DeleteWithInstance` is `False`, its attached cloud disks will be ignored and released directly.

### Request parameters

| Name       | Type   | Required | Description                                                      |
|------------|--------|----------|------------------------------------------------------------------|
| Action     | String | Yes      | The name of this interface. Value: <code>DeleteInstance</code> . |
| InstanceId | String | Yes      | ID of an instance.                                               |

### Response parameters

For more information about all the common response parameters, see [Common parameters](#).

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=DeleteInstance
&InstanceId=i-instance1
&<Common Request Parameters>
```

#### Response example

#### XML format

```
<DeleteInstanceResponse>
  <RequestId>928E2273-5715-46B9-A730-238DC996A533</RequestId>
```

```
</DeleteInstanceResponse>
```

### JSON format

```
{
  "RequestId": "928E2273-5715-46B9-A730-238DC996A533"
}
```

### Error codes

The following error codes are restricted to this interface. For more error codes, see [API Error Center](#).

| Error code                           | Error message                                                                      | HTTP status code | Meaning                                                                              |
|--------------------------------------|------------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------------|
| DependencyViolation.RouteEntry       | Specified instance is used by route entry.                                         | 400              | The specified instance is used by the service <a href="#">Route entry</a> .          |
| DependencyViolation.SLBConfiguring   | Specified operation is denied as your instance is using by another product.        | 400              | The specified instance is used by the service <a href="#">Server Load Balancer</a> . |
| InvalidParameter                     | The input parameter InstanceId is invalid.                                         | 400              | The specified instance ID is invalid.                                                |
| ChargeTypeViolation                  | The operation is not permitted due to charge type of the instance.                 | 403              | You cannot release an in service subscribed instance.                                |
| InvalidOperation.DeletionProtection  | The operation is not allowed due to "{0}" is protected by deletion protection.     | 400              | The specified instance cannot be deleted as deletion protection is enabled for it.   |
| IncorrectInstanceStatus              | The current status of the resource does not support this operation.                | 403              | You can only release an instance that is in the <b>Stopped</b> (Stopped) status.     |
| IncorrectInstanceStatus.Initializing | The specified instance status does not support this operation.                     | 403              | The specified instance is being created. Please try again later.                     |
| InstanceLockedForSecurity            | The specified operation is denied as your instance is locked for security reasons. | 403              | Your instance is locked out of security.                                             |

| Error code                 | Error message                            | HTTP status code | Meaning                                |
|----------------------------|------------------------------------------|------------------|----------------------------------------|
| InvalidInstanceId.NotFound | The specified InstanceId does not exist. | 404              | The specified instance does not exist. |

## 5.7 AttachInstanceRamRole

Attaches an [instance RAM role](#) to your ECS instance. You can only assign one RAM role to an instance at any time. If the instance already has a RAM role, an error code returns when you attach another RAM role to the same instance.

### Request parameters

| Name        | Type   | Required | Description                                                                                                                                                                                                                       |
|-------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action      | String | Yes      | The name of this interface.<br>Value: AttachInstanceRamRole.                                                                                                                                                                      |
| RegionId    | String | Yes      | Region ID.<br>You can call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                      |
| InstanceIds | Array  | Yes      | Instance ID set<br>. A maximum of 100 instances are supported, in the format of ["InstanceId1", "InstanceId2", "InstanceId3"...].                                                                                                 |
| RamRoleName | String | Yes      | Instance RAM role name. The name is provided and maintained by RAM.<br>You can call <a href="#">ListRoles</a> to view the ram role list. For more information, see API <a href="#">CreateRole</a> and <a href="#">ListRoles</a> . |

## Response parameters

All are common response parameters. For more information, see [Common parameters](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=AttachInstanceRamRole
&RegionId=cn-hangzhou
&RamRoleName=RamRoleTest
&InstanceIds=["i-instance1"]
&<Common Request Parameters>
```

### Response example

#### XML format

```
<AttachInstanceRamRoleResponse>
  <RequestId>E6352369-5C2B-41CD-AB50-471550C8F674</RequestId>
  <AttachInstanceRamRoleResults>
    <AttachInstanceRamRoleResult>
      <InstanceId>i-instance1</InstanceId>
      <Code>200</Code>
      <Message>success</Message>
    </AttachInstanceRamRoleResult>
  </AttachInstanceRamRoleResults>
  <TotalCount>1</TotalCount>
  <FailCount>0</FailCount>
  <RamRoleName>RamRoleTest</RamRoleName>
</AttachInstanceRamRoleResponse>
```

#### JSON format

```
{
  "RequestId": "D9553E4C-6C3A-4D66-AE79-9835AF705639",
  "AttachInstanceRamRoleResults": {
    "AttachInstanceRamRoleResult": [
      {
        "Message": "success",
        "InstanceId": "i-instance1",
        "Code": "200"
      }
    ]
  },
  "TotalCount": 1,
  "FailCount": 0,
  "RamRoleName": "RamRoleTest"
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).



| Error code                             | Error message                                                                             | HTTP status code | Meaning                                                             |
|----------------------------------------|-------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------|
| InvalidInstanceIds.<br>Malformed       | The specified InstanceIds is not valid .                                                  | 400              | The specified InstanceIds is invalid.                               |
| MissingParameter.<br>InstanceIds       | The input parameter InstanceIds that is mandatory for processing this request is missing. | 400              | The required InstanceIds parameter is missing.                      |
| MissingParameter.<br>RamRoleName       | The input parameter RamRoleName that is mandatory for processing this request is missing. | 400              | The required RamRoleName parameter is missing.                      |
| MissingParameter.<br>RegionId          | The input parameter RegionId that is mandatory for processing this request is missing.    | 400              | The required RegionId parameter is missing.                         |
| InvalidNetworkType.<br>MismatchRamRole | Ram role cannot be attached to instances of Classic network type.                         | 403              | RAM roles cannot be attached to instances of classic network type . |
| InvalidUser.<br>PassRoleForbidden      | The RAM user does not have the privilege to pass a role.                                  | 403              | The RAM user does not have the privilege to pass a role.            |
| InvalidInstanceId.<br>NotFound         | The specified InstanceId does not exist.                                                  | 404              | The specified InstanceId does not exist.                            |
| InvalidRamRole.<br>NotFound            | The specified RamRoleName does not exist.                                                 | 404              | The specified RamRoleName does not exist.                           |

## 5.8 DetachInstanceRamRole

Detaches a [RAM role](#) from an instance.

### Request Parameters

| Name        | Type   | Required | Description                                                                                                                                                                                                                           |
|-------------|--------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action      | String | Yes      | The name of this interface.<br>Value: DetachInstanceRamRole.                                                                                                                                                                          |
| RegionId    | String | Yes      | Region ID.<br>You can call <a href="#">DescribeRegions</a> .                                                                                                                                                                          |
| InstanceIds | String | Yes      | Instance ID set.<br>A maximum of 100 instances are supported, in the format of ["instanceId1", "instanceId2", "instanceId3"...].                                                                                                      |
| RamRoleName | String | No       | Instance RAM role name. The name is provided and maintained by <i>RAM</i> and can be queried using <a href="#">ListRoles</a> . For more information, see the relevant APIs <a href="#">CreateRole</a> and <a href="#">ListRoles</a> . |

### Response parameters

| Name       | Type    | Description                                                                           |
|------------|---------|---------------------------------------------------------------------------------------|
| TotalCount | Integer | The number of ECS instances from which the instance RAM role is going to be detached. |
| FailCount  | Integer | The number of ECS instances from which the instance RAM role failed to be detached.   |

| Name                         | Type   | Description                                                                                                                             |
|------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------|
| RamRoleName                  | String | The name of instance RAM role.                                                                                                          |
| DetachInstanceRamRoleResults | Array  | A set composed of action details about detaching instance RAM role from an ECS instance( <a href="#">DetachInstanceRamRoleResult</a> ). |

### DetachInstanceRamRoleResult

| Name       | Type    | Description                                                                                                                                                                                                                                                                                             |
|------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| InstanceId | String  | The ECS instance from which the instance RAM role is going to be detached.                                                                                                                                                                                                                              |
| Code       | Integer | It indicates whether you have successfully detached the instance RAM role from the ECS instance or not. If Code =200 returns, the action is successful, and if the other value returns, the action is unsuccessful. For more information on how to fix the errors, see <a href="#">Error codes</a> .    |
| Message    | String  | Indicates whether you have successfully detached the instance RAM role from the ECS instance or not. If Message=Success returns, the action is successful, and if the other value returns, the action is unsuccessful. For more information on how to fix the errors, see <a href="#">Error codes</a> . |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=DetachInstanceRamRole
&RegionId=cn-hangzhou
&RamRoleName=RamRoleTest
```

```
&InstanceIds=["i-instance1"]
&<Common Request Parameters>
```

### Response example

#### XML format

```
<DetachInstanceRamRoleResponse>
  <RequestId>E6352369-5C2B-41CD-AB50-471550C8F674</RequestId>
  <DetachInstanceRamRoleResults>
    <DetachInstanceRamRoleResult>
      <InstanceId>i-instance1</InstanceId>
      <Code>200</Code>
      <Message>success</Message>
    </DetachInstanceRamRoleResult>
  </DetachInstanceRamRoleResults>
  <TotalCount>1</TotalCount>
  <FailCount>0</FailCount>
  <RamRoleName>RamRoleTest</RamRoleName>
</DetachInstanceRamRoleResponse>
```

#### JSON format

```
"RequestId": "E6352369-5C2B-41CD-AB50-471550C8F674",
"DetachInstanceRamRoleResults": {
  "DetachInstanceRamRoleResult": [
    {
      "Message": "success",
      "InstanceId": "i-instance1",
      "Code": "200"
    }
  ]
},
"TotalCount": 1,
"FailCount": 0,
"RamRoleName": "RamRoleTest"
```

### Error codes

The following error codes are specific to this interface. For more error codes, visit the [API error center](#).

| Error code                       | Error message                                                                             | HTTP status code | Meaning                                        |
|----------------------------------|-------------------------------------------------------------------------------------------|------------------|------------------------------------------------|
| MissingParameter.<br>InstanceIds | The input parameter InstanceIds that is mandatory for processing this request is missing. | 400              | The required InstanceIds parameter is missing. |
| MissingParameter.<br>RegionId    | The input parameter RegionId that is mandatory for                                        | 400              | The required RegionId parameter is missing.    |

| Error code                         | Error message                                                     | HTTP status code | Meaning                                                                                                                            |
|------------------------------------|-------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------|
|                                    | processing this request is missing.                               |                  |                                                                                                                                    |
| InvalidInstanceIds.Malformed       | The specified InstanceIds is not valid .                          | 400              | The specified InstanceIds is invalid.                                                                                              |
| InvalidNetworkType.MismatchRamRole | Ram role cannot be attached to instances of Classic network type. | 403              | RAM roles cannot be attached to instances of Classic network type.                                                                 |
| InvalidUser.PassRoleForbidden      | The RAM user does not have the privilege to pass a RAM role.      | 403              | Your RAM user account does not have PassRole permission. For more information, see <a href="#">Attach policies to a RAM user</a> . |
| InvalidInstanceId.NotFound         | The specified InstanceId does not exist.                          | 404              | The specified InstanceIds does not exist.                                                                                          |
| InvalidRamRole.NotFound            | The specified RamRoleName does not exist.                         | 404              | The specified RamRoleName does not exist.                                                                                          |

## 5.9 DescribeInstances

Describes the details of one or more instances.

### Description

The request parameters are filters used for describing a specific list of results. The filters use the (AND) logic, which matches a set of resources by specific criteria, such as IDs, billing methods, or tags. A parameter with null value does not play the role of a filter. However, if the InstanceIds parameter is a null JSON array InstanceIds=[ ], it is regarded as a valid filter and the responded value is null.

### Request parameters

| Name   | Type   | Required | Description                                           |
|--------|--------|----------|-------------------------------------------------------|
| Action | String | Yes      | The name of this interface. Value: DescribeInstances. |

| Name                       | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------|--------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RegionId                   | String | No       | Regional ID. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                                                                                                                    |
| VpcId                      | String | No       | VPC ID.                                                                                                                                                                                                                                                                                                                                                                      |
| VSwitchId                  | String | No       | VSwitch ID.                                                                                                                                                                                                                                                                                                                                                                  |
| ZoneId                     | String | No       | The default value is blank, which indicates a query of disks in all zones.                                                                                                                                                                                                                                                                                                   |
| InstanceIds                | String | No       | Instance ID. The value can contain an array of up to 100 instance IDs. The IDs are displayed in the format of ["i-xxxxxxx", "i-yyyyyyy", ... "i-zzzzzzz"] and are separated by commas (, ).                                                                                                                                                                                  |
| InstanceType               | String | No       | Instance type.                                                                                                                                                                                                                                                                                                                                                               |
| <b>CreditSpecification</b> | String | No       | The running mode of an unlimited credit enabled t5 instance. Optional values: <ul style="list-style-type: none"> <li>Standard: The standard running mode. For more information, see <a href="#">t5 standard instances</a>.</li> <li>Unlimited: The unlimited running mode. For more information, see <a href="#">t5 unlimited instances</a>.</li> </ul> Default value: null. |
| InstanceTypeFamily         | String | No       | Instance type family.                                                                                                                                                                                                                                                                                                                                                        |
| InstanceNetworkType        | String | No       | Network type of the instance. Optional values: <ul style="list-style-type: none"> <li>classic: Classic network.</li> <li>vpc: Private network.</li> </ul>                                                                                                                                                                                                                    |
| PrivateIpAddresses         | String | No       | List of private IP addresses of VPC-Connected instances. This parameter is effective when InstanceNetworkType=vpc. The value can contain an array of up to 100 IP addresses. The IP addresses are displayed in the format of ["172.16.1.1", "172.16.2.1", ... "172.16.10.1"] and are separated by commas (, ).                                                               |
| InnerIpAddresses           | String | No       | List of private IP addresses of classic network-connected instances. This parameter is effective when InstanceNetworkType=classic. The value can contain an array of up to 100 IP addresses. The IP addresses are displayed in the                                                                                                                                           |

| Name               | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |        |          | format of ["10.16.1.1", "10.16.2.1", ... "10.16.10.1"] and are separated by commas (,).                                                                                                                                                                                                                                                                                                                                           |
| PublicIpAddresses  | String | No       | List of public IP addresses of classic network-connected instances. The PublicIpAddresses is valid when InstanceNetworkType=classic. The value can contain an array of up to 100 IP addresses. The IP addresses are displayed in the format of ["42.1.1.1", "42.1.2.1", ... "42.1.10.1"] and are separated by commas (,).                                                                                                         |
| SecurityGroupId    | String | No       | Security group to which the instances belong.                                                                                                                                                                                                                                                                                                                                                                                     |
| InstanceChargeType | String | No       | Billing method of the instances. Optional values: <ul style="list-style-type: none"> <li>PrePaid: Subscribed instances.</li> <li>PostPaid: Pay-As-You-Go instances.</li> </ul>                                                                                                                                                                                                                                                    |
| SpotStrategy       | String | No       | The spot price you are willing to accept for preemptible instances. This parameter is effective for InstanceChargeType=PostPaid. Optional values: <ul style="list-style-type: none"> <li>NoSpot: A normal Pay-As-You-Go instance.</li> <li>SpotWithPriceLimit: Sets the maximum price for a spot instance.</li> <li>SpotAsPriceGo: A price that is based on the highest Pay-As-You-Go instance.</li> </ul> Default value: NoSpot. |
| InternetChargeType | String | No       | Billing method of the instance bandwidth. Optional values: <ul style="list-style-type: none"> <li>PayByTraffic: You are billed based on the traffic.</li> </ul>                                                                                                                                                                                                                                                                   |
| InstanceName       | String | No       | The name of the instance. You can use wildcard (*) for fuzzy search.                                                                                                                                                                                                                                                                                                                                                              |
| ImageId            | String | No       | Image ID.                                                                                                                                                                                                                                                                                                                                                                                                                         |
| DeploymentSetId    | String | No       | Deployment Set ID.                                                                                                                                                                                                                                                                                                                                                                                                                |
| Status             | String | No       | Status of the instances. Optional values: <ul style="list-style-type: none"> <li>Running</li> <li>Starting</li> <li>Stopping</li> <li>Stopped</li> </ul>                                                                                                                                                                                                                                                                          |

| Name        | Type    | Required | Description                                                                                                                                                                                                              |
|-------------|---------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IoOptimized | String  | No       | Whether an instance is I/O optimized. Optional values: <ul style="list-style-type: none"><li>true</li><li>false</li></ul>                                                                                                |
| Tag.n.Key   | String  | No       | The key of a tag of which n is from 1 to 20. Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".          |
| Tag.n.Value | String  | No       | The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://". |
| PageNumber  | Integer | No       | Displays the instances on several pages. Start value: 1.<br>Default: 1.                                                                                                                                                  |
| PageSize    | Integer | No       | The number of rows per page. Maximum value: 100<br>Default: 10.                                                                                                                                                          |

### Response parameters

| Name       | Type                                   | Description                                                                          |
|------------|----------------------------------------|--------------------------------------------------------------------------------------|
| TotalCount | Integer                                | Total number of instances.                                                           |
| PageNumber | Integer                                | Page number of the instance list.                                                    |
| PageSize   | Integer                                | Number of lines per page set during input.                                           |
| Instances  | <a href="#">InstanceAttributesType</a> | Array format composed of InstanceAttributesType, which returns instance information. |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeInstances
&RegionId=cn-hangzhou
&<Common Response Parameters>
```

#### Response example



**XML format**

```

<DescribeInstancesResponse>
  <PageNumber>1</PageNumber>
  <TotalCount>6</TotalCount>
  <PageSize>10</PageSize>
  <RequestId>8EF01A45-FFFA-497B-B5C3-1DE1B74DB32D</RequestId>
  <Instances>
    <Instance>
      <InnerIpAddress/>
      <ImageId>ubuntu_16_0402_64_20G_alibase_20170818.vhd</ImageId>
      <InstanceTypeFamily>ecs.g5</InstanceTypeFamily>
      <VlanId/>
      <NetworkInterfaces>
        <NetworkInterface>
          <MacAddress>00:16:3e:32:b4:dc</MacAddress>
          <PrimaryIpAddress>172.17. XX.XXX</PrimaryIpAddress>
          <NetworkInterfaceId>eni-2zeh9atclduxvf1zcyal</NetworkInt
erfaceId>
        </NetworkInterface>
      </NetworkInterfaces>
      <InstanceId>XXXXXXXXXXXX</InstanceId>
      <EipAddress>
        <IpAddress/>
        <AllocationId/>
        <InternetChargeType/>
      </EipAddress>
      <InternetMaxBandwidthIn>1000</InternetMaxBandwidthIn>
      <ZoneId>cn-beijing-e</ZoneId>
      <InternetChargeType>PayByBandwidth</InternetChargeType>
      <SpotStrategy>NoSpot</SpotStrategy>
      <StoppedMode>Not-applicable</StoppedMode>
      <SerialNumber>d9bd1cdc-624d-4736-9da5-2ba2f741a304</SerialNumber
>
      <IoOptimized>true</IoOptimized>
      <Memory>8192</Memory>
      <Cpu>2</Cpu>
      <VpcAttributes>
        <NatIpAddress/>
        <PrivateIpAddress>
          <IpAddress>172.17. XX.XXX</IpAddress>
        </PrivateIpAddress>
        <VSwitchId>vsw-2zeh0r1pabwtg6wcsgca</VSwitchId>
        <VpcId>vpc-2zeuphj08tt7q3brdb36x</VpcId>
      </VpcAttributes>
      <InternetMaxBandwidthOut>1</InternetMaxBandwidthOut>
      <DeviceAvailable>true</DeviceAvailable>
      <SecurityGroupIds>
        <SecurityGroupId>sg-2ze21r9qb638hvtrvsus</SecurityGroupId>
      </SecurityGroupIds>
      <SpotPriceLimit>0.0</SpotPriceLimit>
      <SaleCycle>Week</SaleCycle>
      <AutoReleaseTime/>
      <InstanceName>ECS-BUY-2017-57-10</InstanceName>
      <Description/>
      <ResourceGroupId/>
      <OSType>linux</OSType>
      <OSName>Ubuntu 16.04 64</OSName>
      <InstanceNetworkType>vpc</InstanceNetworkType>
      <PublicIpAddress>
        <IpAddress>47.94. XX.XX</IpAddress>
      </PublicIpAddress>
    </Instance>
  </Instances>

```

```

<HostName>iZ2zeh9atclduxvf1zxuylZ</HostName>
<InstanceType>ecs.g5.large</InstanceType>
<CreationTime>2017-12-10T04:04Z</CreationTime>
<Tags>
  <Tag>
    <TagValue>fqwfew</TagValue>
    <TagKey>fefqe</TagKey>
  </Tag>
  <Tag>
    <TagValue>weqfwq</TagValue>
    <TagKey>fqewfwqewf</TagKey>
  </Tag>
  <Tag>
    <TagValue>ewqffeqw</TagValue>
    <TagKey>fqfwewfqw</TagKey>
  </Tag>
</Tags>
<Status>Running</Status>
<ClusterId/>
<Recyclable>>false</Recyclable>
<RegionId>cn-beijing</RegionId>
<GPUSpec/>
<OperationLocks/>
<GPUPAmount>0</GPUPAmount>
<InstanceChargeType>PrePaid</InstanceChargeType>
<ExpiredTime>2017-12-17T16:00Z</ExpiredTime>
</Instance>
</Instances>
</DescribeInstancesResponse>

```

### JSON format

```

{
  "Instances": {
    "Instance": [
      {
        "CreationTime": "2015-07-27T07:08Z",
        "DeviceAvailable": "true",
        "EipAddress": {},
        "ExpiredTime": "2011-09-08T16:00Z",
        "HostName": "iZ94t3s0jxkZ",
        "ImageId": "centos6u5_64_20G_aliaegis_20150130.vhd",
        "InnerIpAddress": {
          "IpAddress": [
            "10.170. XX.XXX"
          ]
        },
        "InstanceChargeType": "PostPaid",
        "InstanceId": "XXXXXXXXXX",
        "InstanceName": "dd\u6027\u80fd\u6d4b\u8bd5",
        "InstanceNetworkType": "classic",
        "InstanceType": "ecs.s2.large",
        "InternetChargeType": "PayByTraffic",
        "InternetMaxBandwidthIn": "-1",
        "InternetMaxBandwidthOut": "1",
        "IoOptimized": "false",
        "OperationLocks": {
          "LockReason": []
        },
        "PublicIpAddress": {
          "IpAddress": [

```

```

        "120.25. XX.XXX"
    ],
    },
    "RegionId": "cn-shenzhen",
    "SecurityGroupIds": {
        "SecurityGroupId": [
            "sg-94kd0cyg0"
        ]
    },
    "SerialNumber": "51d1353b-22bf-4567-a176-8b3e12e43135",
    "Status": "Running",
    "VpcAttributes": {
        "PrivateIpAddress": {
            "IpAddress": []
        }
    },
    },
    "ZoneId": "cn-shenzhen-a"
}
]
},
"PageNumber": "1",
"PageSize": 10,
"RequestId": "14A07460-EBE7-47CA-9757-12CC4761D47A",
"TotalCount": "1"
}

```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                                  | Error messages                                         | HTTP status code | Description                                                                      |
|---------------------------------------------|--------------------------------------------------------|------------------|----------------------------------------------------------------------------------|
| InvalidTag.Mismatch                         | The specified Tag.n.Key and Tag.n.Value are not match. | 400              | The specified Tag . n . Key and Tag . n . Value must be key-value matched.       |
| InvalidTagCount                             | The specified tags are beyond the permitted range.     | 400              | You can add up to five tags to the specified ECS resource in this query request. |
| InvalidInstanceChargeType.NotFound          | The InstanceChargeType does not exist in our records.  | 404              | The specified InstanceChargeType does not exist.                                 |
| InvalidInternetChargeType.ValueNotSupported | The specified InternetChargeType is not valid          | 404              | The specified InternetChargeType is invalid.                                     |

| Error code                  | Error messages                                 | HTTP status code | Description                                       |
|-----------------------------|------------------------------------------------|------------------|---------------------------------------------------|
| InvalidNetworkType.NotFound | The specified InstanceNetworkType is not found | 404              | The specified InstanceNetworkType does not exist. |
| InvalidStatus.NotFound      | The specified Status is not found              | 404              | The specifiedStatus does not exist.               |

## 5.10 DescribeInstanceVncUrl

Queries the *management terminal URL* before connecting to an instance.

### Description

When you call this interface, consider the following:

- A management terminal URL is valid for 15 seconds. If a connection is not established within 15 seconds after a successful query, the URL expires and you must query it again.
- The **KeepAlive** time of an individual management terminal connection is 60 seconds. If you do not interact with the management terminal window within 60 seconds, the connection is automatically closed.
- If the connection is interrupted, you cannot reconnect for more than 30 times per minute.

### How to use the response parameter

At the end of the fixed URL <https://g.alicdn.com/aliyun/ecs-console-vnc/0.0.7/index.html?>, add `vncUrl=xxxx`, `instanceId=xxx`, `isWindows=true`, `isWindows=false` and `password=XXXXXX`, and use symbol & between the parameters. Wherein:

- Parameter `vncUrl`: The value of `VncUrl` is responded after calling the interface successfully.
- Parameter `instanceId`: The ID of your instance to which you are about to connect.
- Parameter `isWindows`: Whether the operating system of an instance is Windows or not. The value `true` indicates a Windows instance, and the value `false` indicates other operating system, for example, Linux.
- (Optional). Parameter `password`: The instance connection password in the Management Terminal. It consists of 6 numbers or uppercase/lowercase letters. This parameter eliminates the need to enter the password before the connection establishes.

**Sample:**

```
https://g.alicdn.com/aliyun/ecs-console-vnc/0.0.7/index.html?vncUrl=ws%3A%2F%xxx&instanceId=i-wz9hhwq5a6tmxxxxxxx&isWindows=true
```

Or

```
https://g.alicdn.com/aliyun/ecs-console-vnc/0.0.7/index.html?vncUrl=ws%3A%2F%xxx&instanceId=i-wz9hhwq5a6tmxxxxxxx&isWindows=true&Password=111111
```

**Request parameters**

| Name       | Type   | Required | Description                                                                                                                 |
|------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------|
| Action     | String | Yes      | The name of this interface. Value: DescribeInstanceVncUrl                                                                   |
| RegionId   | String | Yes      | The region ID of the instance. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list. |
| InstanceId | String | Yes      | The ID of an instance.                                                                                                      |

**Response parameters**

| Name   | Type   | Description                  |
|--------|--------|------------------------------|
| VncUrl | String | The management terminal URL. |

**Examples****Request example**

```
https://ecs.aliyuncs.com/?Action=DescribeInstanceVncUrl
&RegionId=cn-qingdao
&InstanceId=AY121018033933eaxxxxxxx
&<Common Request Parameters>
```

**Response example****XML format**

```
<DescribeInstanceVncUrlResponse>
  <RequestId>1450F2D7-5435-4420-BBC9-49C5xxxxxxxx</RequestId>
  <VncUrl>ws%3A%2F%2Fhz01-vncproxy.aliyun.com%2Fwebsockify%2F%
3Fs%3DDvh%252FIA%252BYc73gw048cBx2gBxUDVzaAnSKr74pq30mzqUYgeUMcB%
252FbkNixDxdEA996</VncUrl>
```

```
</DescribeInstanceVncUrlResponse>
```

### JSON format

```
{
  "RequestId": "1450F2D7-5435-4420-BBC9-49C514B0157E",
  "VncUrl": "ws%3A%2F%2Fhz01-vncproxy.aliyun.com%2Fwebsockify%2F%3Fs%3DDvh%252FIA%252BYc73gW048cBx2gBxUDVzaAnSKr74pq30mzqUYgeUMcB%252FbkNixDxdEA996"
```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                 | Error message                                                       | HTTP status code | Description                                                      |
|----------------------------|---------------------------------------------------------------------|------------------|------------------------------------------------------------------|
| IncorrectInstanceStatus    | The current status of the resource does not support this operation. | 403              | The specified instance must be in the <b>Running</b> status.     |
| InstanceNotReady           | The specified instance is not ready for use                         | 403              | The specified instance is being created. Please try again later. |
| InvalidInstanceId.NotFound | The specified InstanceId does not exist.                            | 404              | The specified <code>InstanceId</code> does not exist.            |
| InvalidRegionId.NotFound   | The specified RegionId does not exist.                              | 404              | The specified <code>RegionId</code> does not exist.              |

## 5.11 DescribeInstanceAutoRenewAttribute

Queries the auto renewal status of an instance.

### Description

- Queries the auto renewal status of your instance to view if your instance is set to auto renewal.
- Supports [Subscription](#) ECS instances only. If you use this API on a [Pay-As-You-Go](#) instance, an error is returned.

### Request parameters

| Name   | Type   | Required | Description                        |
|--------|--------|----------|------------------------------------|
| Action | String | Yes      | The name of this interface. Value: |

| Name       | Type   | Required | Description                                                                                                                                |
|------------|--------|----------|--------------------------------------------------------------------------------------------------------------------------------------------|
|            |        |          | DescribeInstanceAutoRenewAttribute.                                                                                                        |
| RegionId   | String | Yes      | Region ID of an instance. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                     |
| InstanceId | String | Yes      | Instance ID set. A maximum of 100 Subscription instances are supported, in the format of ["instanceId1", "instanceId2", "instanceId3"...]. |

### Response parameters

| Name             | Type    | Description                                                                                                                                                                                                         |
|------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| InstanceId       | String  | ID of the instance, which is generated by the system and is globally unique. The unique identity to accesses an instance.                                                                                           |
| Duration         | Integer | Auto renewal duration.                                                                                                                                                                                              |
| AutoRenewEnabled | Boolean | Auto renewal or not. <ul style="list-style-type: none"><li>• true: Auto renewal is enabled.</li><li>• false: Auto renewal is disabled.</li></ul>                                                                    |
| RenewalStatus    | String  | Returns whether to renew an ECS instance automatically or not. <ul style="list-style-type: none"><li>• AutoRenewal: Auto renewal is enabled.</li><li>• Normal: Auto renewal is disabled. However, you can</li></ul> |

| Name | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |      | <p>renew your ECS instance manually.</p> <ul style="list-style-type: none"> <li>• NotRenewal: No renewal any longer. If this value is returned, Alibaba Cloud ceases to send notification of instance expiry, and only gives a brief reminder on the third day before the instance expiry. In this case, if you want to renew your instance, you can change the renewal status of your instance to RenewalStatus=Normal (Normal) before a manual renewal or setting it to auto renewal.</li> </ul> |

## Example

### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeInstanceAutoRenewAttribute
&RegionId=cn-hangzhou
&InstanceId=i-instance1,i-instance2
&<Common Request Parameters>
```

### Response example

### XML format

```
<DescribeInstanceAutoRenewAttributeResponse>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FE73368</RequestId>
  <InstanceRenewAttributes>
    <InstanceRenewAttribute>
      <Instance>
        <InstanceId>i-instance1</InstanceId>
        <Duration>0</Duration>
        <AutoRenewEnabled>>false</AutoRenewEnabled>
        <RenewalStatus>Normal</RenewalStatus>
      </Instance>
      <Instance>
        <InstanceId>i-instance2</InstanceId>
        <Duration>1</Duration>
        <AutoRenewEnabled>>true</AutoRenewEnabled>
        <RenewalStatus>AutoRenewal</RenewalStatus>
      </Instance>
    </InstanceRenewAttribute>
  </InstanceRenewAttributes>
```



```
</DescribeInstanceAutoRenewAttributeResponse>
```

### JSON format

```
{
  "InstanceRenewAttributes": {
    "InstanceRenewAttribute": [
      {
        "Duration": 0,
        "InstanceId": "i-instance1",
        "AutoRenewEnabled": false,
        "RenewalStatus": "Normal"
      },
      {
        "Duration": 1,
        "InstanceId": "i-instance2",
        "AutoRenewEnabled": true,
        "RenewalStatus": "AutoRenewal"
      }
    ]
  },
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FE73368"
}
```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                              | Error message                                                       | HTTP status code | Meaning                                                           |
|-----------------------------------------|---------------------------------------------------------------------|------------------|-------------------------------------------------------------------|
| Abs.MissingParamter.<br>InstanceId      | InstanceId should not be null.                                      | 403              | InstanceId is required.                                           |
| ChargeTypeViolation                     | Pay-As-You-Go instances do not support this operation.              | 403              | Pay-As-You-Go instances do not support this operation.            |
| IncorrectInstanceStatus                 | The current status of the resource does not support this operation. | 403              | This operation is not supported because the instance has expired. |
| InvalidParameter.<br>InvalidInstanceId  | The specified instanceId is not valid.                              | 403              | The specified InstanceId is invalid.                              |
| InvalidParameter.<br>TooManyInstanceIds | No more than 100 InstanceIds can be specified.                      | 403              | The number of the specified InstanceId cannot exceed 100.         |

## 5.12 DescribeInstanceRamRole

Queries information related to the *instance RAM role*.

### Request parameters

| Name        | Type   | Required | Description                                                                                                                                                          |
|-------------|--------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action      | String | Yes      | The name of this interface.<br>Value: DescribeInstanceRamRole                                                                                                        |
| InstanceIds | String | Yes      | Instance ID set<br>. A maximum of 100 instances are supported, in the format of ["instanceId1", "instanceId2", "instanceId3"...].                                    |
| RamRoleName | String | No       | Queries all the ECS instances to which the specified RAM role is attached. You can use RAM API <a href="#">ListRoles</a> to query your available instance RAM roles. |

### Return parameters

| Name                | Type  | Description                                                                        |
|---------------------|-------|------------------------------------------------------------------------------------|
| InstanceRamRoleSets | Array | Information set of Instance RAM role<br>( <a href="#">InstanceRamRoleSetType</a> ) |

### Example

#### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeInstanceRamRole
&RegionId=cn-hangzhou
&InstanceIds=["i-instance1"]
&<Common Request Parameters>
```

#### Response sample

**XML format**

```
<DescribeInstanceRamRoleResponse>
  <RequestId>8F4CAE3F-7892-4662-83A5-2C2FFD639553</RequestId>
  <InstanceRamRoleSets>
    <InstanceRamRoleSet>
      <InstanceId>i-instance1</InstanceId>
      <RamRoleName>RamRoleTest</RamRoleName>
    </InstanceRamRoleSet>
  </InstanceRamRoleSets>
  <TotalCount>1</TotalCount>
</DescribeInstanceRamRoleResponse>
```

**JSON format**

```
{
  "RequestId": "8F4CAE3F-7892-4662-83A5-2C2FFD639553",
  "InstanceRamRoleSets": {
    "InstanceRamRoleSet": [
      {
        "InstanceId": "i-instance1",
        "RamRoleName": "RamRoleTest"
      }
    ]
  },
  "TotalCount": 1
}
```

**Error codes**

Error codes specific to this interface are as follows. For more error codes, see [API Error Center](#).

| Error code                             | Error message                                                         | HTTP status code | Note                                                                                                                              |
|----------------------------------------|-----------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| InvalidInstanceIds.<br>Malformed       | The specified InstanceIds is not valid .                              | 400              | The specified InstanceIds are not valid.                                                                                          |
| InvalidNetworkType.<br>MismatchRamRole | The Ram role cannot be attached to instances of Classic network type. | 403              | RAM roles cannot be attached to InstanceIds of Classic network type. Ram role cannot be attached to instances of Classic network. |
| InvalidInstanceId.<br>NotFound         | The specified InstanceId does not exist.                              | 404              | The specified InstanceIds does not exist.                                                                                         |
| InvalidRamRole.<br>NotFound            | The specified RamRoleName does not exist.                             | 404              | The specified RamRoleName does not exist.                                                                                         |

## 5.13 ModifyInstanceVpcAttribute

Modifies the attributes of a Virtual Private Cloud (VPC).

### Description

- The ECS instance must be in the `Stopped` status before the VSwitch can be changed.
- A new instance must have been started and stopped before you call this interface.
- An ECS instance that has successfully modified the VPC properties must have been started and stopped before you call this interface again.
- When VPC attributes are modified for a specified `VSwitchId`, the `VSwitchId` must belong to the same VPC.
- When `VSwitchId` is specified and `PrivateIpAddress` is not specified, the system automatically allocates a private IP address for your ECS instance.
- The current `VSwitchId` and new VSwitch of the specified instance must belong to the same zone.
- The current VSwitch and new `VSwitchId` of the specified instance must belong to the same VPC.
- When both `VSwitchId` and `PrivateIpAddress` are specified, the specified `PrivateIpAddress` must be in the [network segment](#) of the specified VSwitch. The value of `PrivateIpAddress` depends on `VSwitchId`. You must specify the `VSwitchId` when you modify the `PrivateIpAddress` of your instance.
- For more information about the APIs for VPC, see [API Reference of VPC](#).

### Request parameters

| Name       | Type   | Required | Description                                                                                           |
|------------|--------|----------|-------------------------------------------------------------------------------------------------------|
| Action     | String | Yes      | The name of this interface. Value: <code>modifyinstancevpcattribute</code> .                          |
| InstanceId | String | Yes.     | Instance Id.                                                                                          |
| VSwitchId  | String | Yes.     | New VSwitch Id. Only <code>VSwitchId</code> in the same zone of the previous VSwitch can be selected. |

| Name             | Type   | Required | Description                                                                                                                                                                            |
|------------------|--------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Privateipaddress | String | No       | New private IP addresses of your instance. The value of PrivateIpAddress depends on the VSwitchId. You must specify the VSwitch when you modify the PrivateIpAddress of your instance. |

### Response parameters

All parameters are common response parameters. For more information, see [Common parameters](#).

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=ModifyInstanceVpcAttribute
&InstanceId=35F20777-0DFF-C152-41FA-BCE0EA0B2FD7
&VSwitchId=[vswitchid]
&<Common Request Parameters>
```

#### Response example

##### XML format

```
<ModifyInstanceAttributeResponse>
  <RequestId>473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E</RequestId>
</ModifyInstanceAttributeResponse>
```

##### JSON format

```
{
  "RequestId": "473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E"
}
```

### Error codes

The following error codes are specific to this interface. For more error codes, visit the [API error center](#).

| Error code                         | Error message                                                            | HTTP status code | Description                                                                                                                          |
|------------------------------------|--------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| IncorrectInstanceStatus            | The current status of instance does not support this operation.          | 400              | Only an instance in Stopped status supports this operation.                                                                          |
| InvalidPrivateIp.Changing          | Previous action is not finished yet.                                     | 400              | The private IP address cannot be modified because the previous modification is not finished yet.                                     |
| InvalidPrivateIp.Changing          | Specified private IP address is not in the CIDR block of virtual switch. | 400              | The private IP address is being modified by the instance (the private IP address can be modified only when the instance is stopped). |
| InvalidPrivateIpAddress.Duplicated | Specified private IP address is duplicate.                               | 400              | The specified private IP address is already in use.                                                                                  |
| InvalidPrivateIpAddress.Malformed  | Specified private IP address is malformed.                               | 400              | The specified private IP address is invalid.                                                                                         |
| InvalidPrivateIpAddress.Mismatch   | Specified private IP address is not in the CIDR block of virtual switch. | 400              | The specified private IP address is not in the network segment of the specified VSwitch.                                             |
| InvalidVSwitchId.Mismatch          | Specified instance and virtual switch are not in the same zone.          | 400              | The specified instance and VSwitchId are not in the same zone.                                                                       |
| OperationDenied                    | Specified operation is denied as your instance is not in VPC.            | 400              | The network type for the specified instance must be VPC.                                                                             |
| InvalidInstanceId.NotFound         | The specified InstanceId does not exist.                                 | 404              | The specified ECS instance does not exist.                                                                                           |
| InvalidVSwitchId.NotFound          | Specified virtual switch does not exist.                                 | 404              | The specified VSwitch ID does not exist.                                                                                             |

| Error code                | Error message                                         | HTTP status code | Description                                                                                          |
|---------------------------|-------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------|
| InvalidVSwitchId.NotFound | Specified virtual switch is not found in current VPC. | 404              | The specified VSwitch of the instance cannot be modified because it is not found in the current VPC. |

## 5.14 ModifyInstanceAttribute

Modifies the information such as the name, password, host name, and description of an instance.

### Description

When you call this interface, consider the following:

- You cannot reset the password for an instance when it is in the **Starting** status.
- If the specified instance is **locked**, and the OperationLocks of the instance indicates "LockReason" : "security", you cannot reset its password.
- The new password takes effect only after the instance is **restarted** in the console or by calling the interface **RebootInstance**.
- When an instance is in the **Stopped** status and is not limited to pass a **user data** script, you can modify its user data.

### Request parameters

| Name                | Type   | Required | Description                                                                                                                                                                                                                                                |
|---------------------|--------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Action</b>       | String | Yes      | The name of this interface. Value: ModifyInstanceAttribute.                                                                                                                                                                                                |
| <b>InstanceId</b>   | String | Yes      | The specified instance ID.                                                                                                                                                                                                                                 |
| <b>InstanceName</b> | String | No       | The name of the instance. The name is a string of 2 to 128 characters. It must begin with an English or a Chinese character. It can contain A-Z, a-z, Chinese characters, numbers, periods (.), colons (:), underscores (_), and hyphens (-).              |
| <b>Description</b>  | String | No       | The description of the instance is null by default. It cannot begin with http:// or https://.                                                                                                                                                              |
| <b>Password</b>     | String | No       | Resets the administrative password of the instance. The password can be [8, 30] characters in length. It must contain uppercase letters, lowercase letters, and numbers. The following special characters are allowed: ()`~!@#\$%^&*~+= {}[]:;<,>,.? / . A |

| Name                       | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------|---------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                            |         |          | slash (/) cannot be the first character of Windows instances administrative password.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>HostName</b>            | String  | No       | <p>Host name of the instance.</p> <ul style="list-style-type: none"> <li>It cannot start or end with a period (.) or a hyphen (-) and it cannot have two or more consecutive periods (.) or hyphens (-).</li> <li>For Windows: The host name can be [2, 15] characters in length. It can contain A-Z, a-z, numbers, periods (.), and hyphens (-). It cannot only contain numbers.</li> <li>For other operating systems: The host name can be [2, 64] characters in length. It can be segments separated by periods (.). It can contain A-Z, a-z, numbers, and hyphens (-).</li> </ul> |
| <b>UserData</b>            | String  | No       | The user-defined data of your ECS instance. The size of your UserData must be less than 16 KB before the Base64 encodement. Refrain from entering confidential information, such as SSH key pair and AccessKey, in your request. If you do so, make sure the confidential information is encrypted before Base64 encoding. Also, do not forget to decrypt the information after it passes into your ECS instance.                                                                                                                                                                     |
| <b>CreditSpecification</b> | String  | No       | <p>Modifies the running mode of an unlimited credit enabled t5 instance. Optional values:</p> <ul style="list-style-type: none"> <li>Standard: The standard running mode. For more information, see <a href="#">t5 standard instances</a>.</li> <li>Unlimited: The unlimited running mode. For more information, see <a href="#">t5 unlimited instances</a>.</li> </ul> <p>Default value: null.</p>                                                                                                                                                                                   |
| <b>DeletionProtection</b>  | Boolean | No       | <p>Whether an instance can be released manually through the console or API (<a href="#">DeleteInstance</a>).</p> <ul style="list-style-type: none"> <li>true: Enable deletion protection.</li> <li>false: Disable deletion protection.</li> </ul> <div>  <b>Note:</b><br/> This attribute applies to the Pay-As-You-Go instances. However, it can only restrict the manual </div>                                                                                                                  |



| Name | Type | Required | Description                                                    |
|------|------|----------|----------------------------------------------------------------|
|      |      |          | release operation, not the release operation by Alibaba Cloud. |

## Response parameters

All are common response parameters. For more information, see [Common parameters](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=ModifyInstanceAttribute
&InstanceId=i-instance1
&Password=pwd
&<Common Request Parameters>
```

### Response example

#### XML format

```
<ModifyInstanceAttributeResponse>
  <RequestId>473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E</RequestId>
</ModifyInstanceAttributeResponse>
```

#### JSON format

```
{
  "RequestId": "473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E"
}
```

## Error codes

All are common error codes. For more information, see [API Error Center](#).

| Error code                    | Error message                                                  | HTTP status code | Meaning                               |
|-------------------------------|----------------------------------------------------------------|------------------|---------------------------------------|
| InvalidDescription.Malformed  | The specified parameter "Description" is not valid.            | 400              | The specified Description is invalid. |
| InvalidDescription.Malformed  | The specified destination image description is wrongly formed. | 400              | The specified Description is invalid. |
| InvalidHostPassword.Malformed | The specified parameter "Password" is not valid.               | 400              | The specified Password is invalid.    |

| Error code                    | Error message                                                                      | HTTP status code | Meaning                                                                                 |
|-------------------------------|------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------|
| InvalidInstanceName.Malformed | The specified parameter "InstanceName" is not valid.                               | 400              | The specified InstanceName is invalid.                                                  |
| InvalidHostName.Malformed     | The specified parameter "HostName" is not valid.                                   | 400              | The specified HostName is invalid.                                                      |
| InvalidPassword.Malformed     | The specified parameter "Password" is not valid.                                   | 400              | The specified Password is invalid.                                                      |
| InvalidUserData.SizeExceeded  | The specified parameter "UserData" exceeds the size.                               | 400              | The size of your UserData must be less than 16 KB.                                      |
| InvalidUserData.NotSupported  | The specified parameter "UserData" only support the vpc and IoOptimized Instance.  | 400              | You can only specify UserData for a VPC instance or an I/O optimized instance.          |
| IncorrectInstanceStatus       | The current status of the resource does not support this operation.                | 403              | You cannot reset the password for an instance when it is in Deleted or Starting status. |
| InstanceLockedForSecurity     | The specified operation is denied as your instance is locked for security reasons. | 403              | Your instance has been locked.                                                          |
| OperationDenied               | The Specified operation is denied as your instance is locked for security reasons. | 403              | Your instance has been locked.                                                          |
| OperationDenied               | The current status of the resource does not support this operation.                | 403              | You cannot reset the password for an instance when it is in Deleted or Starting status. |
| HOSTNAME_ILLEGAL              | hostname is not valid.                                                             | 404              | The specified HostName is invalid.                                                      |
| InvalidInstanceId.NotFound    | The specified InstanceId does not exist.                                           | 404              | The specified InstanceId does not exist.                                                |

| Error code                      | Error message                                 | HTTP status code | Meaning                                       |
|---------------------------------|-----------------------------------------------|------------------|-----------------------------------------------|
| InvalidSecurityGroupId.NotFound | The specified SecurityGroupId does not exist. | 404              | The specified SecurityGroupId does not exist. |

## 5.15 ModifyInstanceChargeType

Changes the billing method for one or more instances. You can use this interface to change the billing method between Pay-As-You-Go and Subscription. Additionally, you can change all Pay-As-You-Go cloud disks that are mounted to an instance to Subscription ones.

### Description

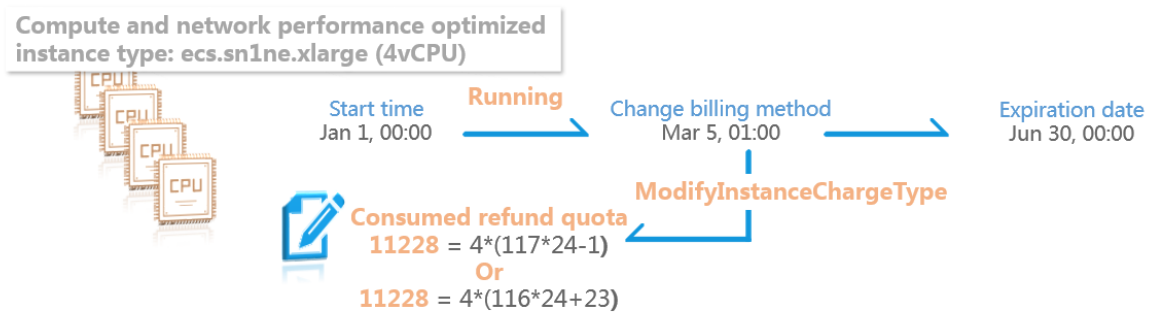
When you call this interface, consider the following:

- You can change the billing method only when the target instance is in the **Running** (indicated by Running) or **Stopped** (indicated by Stopped) state and the balance of your payment method is sufficient.
- By default, the system uses the latest billing method to automatically charge fees. Make sure that your account balance is sufficient. Otherwise, the system regards your order as an exception, and you have to cancel this order. If your account balance is insufficient, set `AutoPay` to `false`. The system then generates a normal unpaid order for the outstanding payment. You can log on to the [ECS console](#) to pay for this order.

### From Subscription to Pay-As-You-Go

- Alibaba Cloud users who reach a certain credit level can change the billing method from Subscription to Pay-As-You-Go.
- After you change the billing method from Subscription to Pay-As-You-Go, the new billing method will be effective throughout the whole instance life cycle, and you will receive a refund of the instance price difference. The refund will be returned to your original payment channel, but the used vouchers will not be returned.
- Refund rule:** You can only freely use a certain amount of refund within a month, and the refund that is not used within the current month will not be accumulated to the next month. After you have used up the refund amount for this month, you can only change the billing method when the next month arrives. The refund amount consumed for a billing method change is calculated by either of the following formulas: **Number of vCPUs x (Number of remaining days within the instance's life cycle excluding the day when the billing method is changed x 24 +**

Number of remaining hours on the day when the billing method is changed) or Number of vCPUs x (Number of remaining days within the instance's life cycle including the day when the billing method is changed x 24 - Number of elapsed hours on the day when the billing method is changed). The following figure illustrates the refund consuming rule by taking the network-enhanced instance type ecs.sn1ne.xlarge (with 4 vCPUs) for example.



### From Pay-As-You-Go to Subscription

- You can change all Pay-As-You-Go data disks that are mounted to an instance to Subscription ones.
- This interface cannot be called if the release time has been set for a Pay-As-You-Go instance.

### Request parameters

| Name        | Type    | Required | Description                                                                                                                                                                                                                 |
|-------------|---------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action      | String  | Yes      | Name of this interface. Value: ModifyInstanceChargeType                                                                                                                                                                     |
| RegionId    | String  | Yes      | ID of the region where the instance is located. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                |
| InstanceIds | String  | Yes      | Instance ID. The parameter value is a JSON array composed of multiple instance IDs in the ["s-xxxxxxx", "s-yyyyyyy", ... "s-zzzzzzz"] format. A maximum of 20 IDs are allowed, and the IDs must be separated by commas (,). |
| Period      | Integer | No       | Instance life cycle                                                                                                                                                                                                         |
| PeriodUnit  | String  | No       | Unit of the instance life cycle. Value range: year, month, week, and day<br>Currently, only Year, Week, and Month are supported.                                                                                            |

| Name               | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------|---------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IncludeDataDisks   | Boolean | No       | Whether to change all Pay-As-You-Go data disks that are mounted to the instance to Subscription ones. The default value is true.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| InstanceChargeType | String  | No       | Target billing method. Value range: <ul style="list-style-type: none"> <li>PrePaid (default value): Subscription, indicating the billing method change from Pay-As-You-Go to Subscription</li> <li>PostPaid: Pay-As-You-Go, indicating the billing method change from Subscription to Pay-As-You-Go</li> </ul>                                                                                                                                                                                                                                                                                                    |
| AutoPay            | Boolean | No       | Whether to allow automatic payment. Value range: <ul style="list-style-type: none"> <li>true (default value): Automatic payment is allowed. Make sure that the balance of your payment method is sufficient. If the balance is insufficient, an abnormal order will be generated, which can only be voided.</li> <li>false: An order is generated with no fee charged. If the balance of your payment method is insufficient, a normal unpaid order will be generated. In this case, you can log on to the <a href="#">ECS console</a> to pay for the order.</li> </ul>                                           |
| DryRun             | Boolean | No       | Whether the system performs a permission check only. <ul style="list-style-type: none"> <li>true: Sends a permission check request, without performing actual API action. An enabled DryRun checks whether your AccessKey is valid, the authorization status of a RAM user, and whether the required parameters are set. If you do not have the required permissions, a related error response is returned. Otherwise, it is DryRunOperation.</li> <li>False: Sends a normal request, returns the 2XX HTTP status code after the check and queries the resource status directly.</li> </ul> Default value: false. |
| ClientToken        | String  | No       | Guarantees the idempotence of the request. The value is generated by a client and must be globally unique. Only ASCII characters are allowed. It can                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Name | Type | Required | Description                                                                                                     |
|------|------|----------|-----------------------------------------------------------------------------------------------------------------|
|      |      |          | contain a maximum of 64 ASCII characters. For more information, see <a href="#">How to ensure idempotence</a> . |

### Response parameters

| Name    | Type | Description             |
|---------|------|-------------------------|
| OrderId | Long | ID of a generated order |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=ModifyInstanceChargeType
&RegionId=cn-hangzhou
&InstanceIds=["i-xxxxx1","i-xxxxx2"]
&Period=1
&PeriodUnit=Month
&AutoPay=false
&IncludeAllDisks=true
&ClientToken=xxxxxxxxxxxxxx
&<Common Request Parameters>
```

#### Response example

##### XML format

```
<ModifyInstanceConfigurationResponse>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FExxxxx</RequestId>
  <OrderId>101111111111xxxx</OrderId>
</ModifyInstanceConfigurationResponse>
```

##### JSON format

```
{
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FExxxxx",
  "OrderId": 1011111111111111,
}
```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code      | Error message                                 | HTTP status code | Description                                      |
|-----------------|-----------------------------------------------|------------------|--------------------------------------------------|
| ExpiredInstance | Expired instances exist in your request list. | 400              | An overdue instance exists in the instance list. |

| Error code                            | Error message                                                                                          | HTTP status code | Description                                                                                          |
|---------------------------------------|--------------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------|
| InstancesIdQuotaExceed                | The maximum number of Instances is exceeded.                                                           | 400              | A maximum of 20 instances can be specified at a time.                                                |
| InvalidInstance.UnpaidOrder           | The specified instance has unpaid order.                                                               | 400              | There are still unpaid orders under this instance.                                                   |
| InvalidClientToken.ValueNotSupported  | The ClientToken provided is invalid.                                                                   | 400              | The value of ClientToken is invalid. Only ASCII characters are allowed.                              |
| InvalidParameter.InstanceIds          | The specified InstanceIds are invalid.                                                                 | 400              | The specified InstanceIds is invalid.                                                                |
| InvalidStatus.ValueNotSupported       | The instance cannot be modified in the specified status.                                               | 400              | The instance must be <b>running</b> (indicated by Running) or <b>stopped</b> (indicated by Stopped). |
| ReleaseTimeHaveBeenSet                | The specified instance has been set released time.                                                     | 400              | Your request involves an instance whose release time has been set.                                   |
| Throttling                            | You have made too many requests within a short time; your request is denied due to request throttling. | 400              | Your operations are too frequent. Please try again later.                                            |
| InvalidPeriod.ExceededDedicatedHost   | Instance expired date can't exceed dedicated host expired date.                                        | 400              | The instance life cycle cannot be longer than the dedicated host life cycle.                         |
| InvalidAccountStatus.NotEnoughBalance | Your account does not have enough balance.                                                             | 403              | The balance of your payment method is insufficient                                                   |
| InvalidInstanceId.NotFound            | The specified InstanceId does not exist.                                                               | 404              | The specified instance does not exist.                                                               |

| Error code    | Error message                                                                      | HTTP status code | Description                 |
|---------------|------------------------------------------------------------------------------------|------------------|-----------------------------|
| InternalError | The request processing has failed due to some unknown error, exception or failure. | 500              | There is an internal error. |

## 5.16 ModifyInstanceSpec

Changes the instance type or modifies the Internet bandwidth of a Pay-As-You-Go () instance.

### Description

When you call this interface, consider the following:

- The instance cannot have overdue payment.
- You can only modify the Internet bandwidth when the ECS instance is **Running** (Running) or **Stopped** (Stopped).
- Before upgrading or lowering the instance specification, you can use [DescribeResourcesModification](#) to query the current instance for instance specifications that support variant matches.
- You can only change the instance type when the ECS instance is **Stopped** (Stopped).
- You can only either change the instance type or modify the Internet bandwidth each time.
- n instance that was successfully modified once cannot be modified again within 5 minutes.

### Request parameters

| Name         | Type   | Required | Description                                                                                                                                                                     |
|--------------|--------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action       | String | Yes      | The name of this interface. Value: ModifyInstanceSpec                                                                                                                           |
| InstanceId   | String | Yes      | The specified instance ID.                                                                                                                                                      |
| InstanceType | String | No       | Instance type. For more information, see <a href="#">Instance generations and type families</a> , or call <a href="#">DescribeInstanceTypes</a> to obtain the latest type list. |



| Name                    | Type    | Required | Description                                                                                                                                                                                                                                     |
|-------------------------|---------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| InternetMaxBandwidthOut | Integer | No       | Maximum value of public network outbound bandwidth; unit: Mbps (Megabit per second). Optional values: <ul style="list-style-type: none"><li>PayByTraffic: [0, 100]</li></ul>                                                                    |
| InternetMaxBandwidthIn  | Integer | No       | Maximum value of inbound Internet bandwidth, in Mbps (Megabit per second). Value range: <ul style="list-style-type: none"><li>Pay-By-Traffic: [1, 200]</li></ul>                                                                                |
| ClientToken             | String  | No       | Used to guarantee the idempotence of the request. The value is generated by a client. It must be unique among all requests and contains a maximum of 64 ASCII characters. For more information, see <a href="#">How to ensure idempotence</a> . |

### Return parameters

| Name      | Type   | Description     |
|-----------|--------|-----------------|
| RequestId | String | The Request ID. |

### Example

#### Request example

```
https://ecs.aliyuncs.com/?Action=ModifyInstanceSpec
&InstanceId=i-xxxxx1
&InstanceType=ecs.s1.large
&InternetMaxBandwidthOut=10
&InternetMaxBandwidthIn=100
```

```
&ClientToken=xxxxxxx  
&<common request parameters>
```

### Response sample

### XML format

```
<ModifyInstanceSpecResponse>  
  <RequestId>04F0F334-1335-436C-A1D7-6C044FE73368</RequestId>  
</ModifyInstanceSpecResponse>
```

### JSON format

```
{  
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FE73368",  
}
```

### Error codes

Error codes specific to this interface are as follows. For more error codes, see [API Error Center](#).

| Error code                            | Error message                                                                           | HTTP status code | Note                                                                  |
|---------------------------------------|-----------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------|
| Account.Arrearage                     | Your account has an outstanding payment.                                                | 400              | Your account has an overdue payment.                                  |
| DependencyViolation.InstanceType      | The current InstanceType cannot be changed to the specified InstanceType.               | 400              | You cannot change the instance type to the specified instance type.   |
| IdempotenceParamNotMatch              | Request uses a client token in a previous request but is not identical to that request. | 400              | The request parameters for the same ClientToken do not match.         |
| InvalidClientToken.ValueNotSupported  | The ClientToken provided is invalid.                                                    | 400              | The value of ClientToken is invalid. Only ASCII characters are valid. |
| InvalidInstance.UnpaidOrder           | The specified instance has unpaid order.                                                | 400              | The current instance has unpaid orders.                               |
| InvalidInstanceType.ValueNotSupported | The specified InstanceType is not supported.                                            | 400              | The specified InstanceType is invalid or does not exist.              |

| Error code                                  | Error message                                                              | HTTP status code | Note                                                                                                  |
|---------------------------------------------|----------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------|
| InvalidInstanceType.ValueUnauthorized       | The specified instancetype is not authorized.                              | 400              | The specified InstanceType is not authorized for use.                                                 |
| InvalidInternetChargeType.ValueNotSupported | The specified InternetChargeType is not valid.                             | 400              | The specified InternetChargeType does not exist.                                                      |
| InvalidParameter                            | The specified parameter InternetMaxBandwidthOut is not valid.              | 400              | The specified InternetMaxBandwidthOut is invalid (it is not a number or a number out of value range). |
| InvalidParameter.Bandwidth                  | The specified parameter Bandwidth is not valid.                            | 400              | The specified bandwidth value is invalid.                                                             |
| InvalidParameter.Conflict                   | The specified image does not support the specified instance type.          | 400              | The image is not allowed to be used on an instance of the specified InstanceType.                     |
| InvalidParameter.Mismatch                   | Too many parameters in one request.                                        | 400              | Request parameters are excessive.                                                                     |
| InvalidStatus.ValueNotSupported             | The current status of the resource does not support this operation.        | 400              | The status of the instance does not support this operation.                                           |
| InvalidStatus.ValueNotSupported             | The instance cannot be modified in the specified status.                   | 400              | The current instance status does not support this operation.                                          |
| OperationDenied                             | The specified instance is in VPC.                                          | 400              | The network type of the instance is VPC.                                                              |
| Price.PricePlanResultNotFound               | The internetMaxBandwidthIn or internetMaxBandwidthOut provided is invalid. | 400              | The specified parameter InternetMaxBandwidthIn or InternetMaxBandwidthOut is invalid.                 |

| Error code                                | Error message                                                                                          | HTTP status code | Note                                                                                            |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------|
| Throttling                                | You have made too many requests within a short time; your request is denied due to request throttling. | 400              | Too many requests were sent.                                                                    |
| InvalidInstanceStatus.<br>NotStopped      | The specified Instance status is not stopped.                                                          | 400              | The instance is not in the Stopped status.                                                      |
| CategoryViolation                         | The specified instance does not support this operation because of its disk category.                   | 403              | The network type of the current instance does not support this operation.                       |
| ChargeTypeViolation                       | The operation is not permitted due to charge type of the instance.                                     | 403              | The billing method of the instance does not support this operation.                             |
| Imagenotsupportinstancetype               | pecified image does not support the specified InstanceType.                                            | 403              | The instance type is not supported for the specified mirror.                                    |
| InstanceLockedForSecurity                 | The input parameter InstanceId that is mandatory for processing this security reasons.                 | 403              | The instance is currently locked down and the operation is denied.                              |
| InvalidAccountStatus.<br>NotEnoughBalance | Your account does not have enough balance.                                                             | 403              | Your registered credit card is invalid or you have insufficient balance in your PayPal account. |
| LastTokenProcessing                       | The last token request is processing.                                                                  | 403              | The last request is still in process.                                                           |
| OperationDenied                           | The instance is out of usage.                                                                          | 403              | The specified instance type has insufficient inventory.                                         |
| InvalidInstanceId.<br>NotFound            | The specified InstanceId does not exist.                                                               | 404              | The specified InstanceId does not exist.                                                        |

| Error code          | Error message                                                                      | HTTP status code | Note                              |
|---------------------|------------------------------------------------------------------------------------|------------------|-----------------------------------|
| InternalServerError | The request processing has failed due to some unknown error, exception or failure. | 500              | Internal error.                   |
| InvalidAction       | The specified action is not valid.                                                 | 500              | The current operation is invalid. |

## 5.17 ModifyPrepayInstanceSpec

Changes the instance type of Subscription instances.

### Description

When using this operation, consider the following:

- The specified instance must be in the **Stopped** (Stopped) status.
- The specified instance cannot have outstanding payment.
- Before changing the [subscribed](#) instance type, you can use the [DescribeResourcesModification](#) API to query the instance types you can change to.
- After downgrading the instance type, the new instance type applies to the entire lifecycle of the instance. After an instance is downgraded, you are refunded the price difference for the instance to the payment method you used. If you used coupons, they are not refunded.
- An instance that was successfully operated upon once cannot be operated upon again within five minutes.
- An instance cannot be downgraded more than three times.

### Request parameters

| Name         | Type   | Required | Description                                                                                                 |
|--------------|--------|----------|-------------------------------------------------------------------------------------------------------------|
| Action       | String | Yes      | The operation that you want to perform. Value: ModifyPrepayInstanceSpec.                                    |
| InstanceId   | String | Yes      | Instance ID.                                                                                                |
| RegionId     | String | Yes      | The region ID. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list. |
| InstanceType | String | Yes      | The instance type to change to. For more information, see <a href="#">instance Type Family</a> , or call    |

| Name                    | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------|---------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         |         |          | <a href="#">DescribeInstanceTypes</a> to obtain the latest type list.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| OperatorType            | String  | No       | <p>Operation type. Optional values:</p> <ul style="list-style-type: none"> <li>upgrade: Upgrades the instance type.</li> <li>downgrade: Downgrades the instance type.</li> </ul> <p>Default: Upgrade.</p> <p>Make sure that your registered credit card is valid or enough balance in your PayPal account when you set <code>OperatorType</code> to <code>upgrade</code>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| AutoPay                 | Boolean | No       | <p>Whether or not automatic payment is enabled.</p> <p>Optional values:</p> <ul style="list-style-type: none"> <li>true: Automatic payment. Make sure that your registered credit card is valid or enough balance in your PayPal account. If the balance is not sufficient, an exception order is generated, which can only be voided.</li> <li>false: Generates orders, but does not deduct the funds. If your registered credit card is invalid or has credit limit set, a normal unpaid order is generated. You can log on to the ECS console to settle this order. By default, the system uses the latest billing method to automatically charge fees. Make sure that your account balance is sufficient. Otherwise, the system regards your order as an exception, and you have to cancel this order. If your account balance is insufficient, set <code>AutoPay</code> to <code>false</code>. The system then generates a normal unpaid order for the outstanding payment. You can log on to the <a href="#">ECS console</a> to pay for this order.</li> </ul> <p>Default: true.</p> <p>When the parameter <code>OperatorType</code> is set to <code>downgrade</code>, the <code>AutoPay</code> parameter is ignored.</p> |
| SystemDisk.<br>Category | String  | No       | <p>The new category of system disk. This parameter is only used for upgrades from <a href="#">Phased-out instance types</a>, to <a href="#">instance type families available for sale</a> and from non-I/O optimized instance types to I/O optimized instance types. Optional values:</p> <ul style="list-style-type: none"> <li>cloud_efficiency: Ultra cloud disk.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Name              | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------|---------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |         |          | <ul style="list-style-type: none"> <li>cloud_ssd: SSD cloud disk.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| MigrateAcrossZone | Boolean | No       | <p>Specifies whether to upgrade the instance among different clusters or not.</p> <p>Default: false.</p> <p>When the MigrateAcrossZone is set to True and you change the instance type according to the returned information, you must make sure that:</p> <ul style="list-style-type: none"> <li>For classic network-connected instances: <ul style="list-style-type: none"> <li>If you upgrade the <a href="#">Phased-out instance types</a>, non-I/O optimized instances to I/O optimized instances, the instance-related intranet IP address, disk device names and license key of the instance may change. For Linux instances, Basic Cloud Disks (cloud) will be recognized as xvda or xvdb, while Ultra Cloud Disks (cloud_efficiency) and SSD Cloud Disks (cloud_ssd) as vda or vdb.</li> <li>If your classic network instances are available in the <a href="#">instance type families</a>, the private IP of the instances may change.</li> </ul> </li> <li>For VPC-Connected instances: <p>If you upgrade the <a href="#">Phased-out instance types</a>, non-I/O optimized instances to I/O optimized instances, the disk device names and license key of the ECS may change. For Linux instances, Basic Cloud Disks (cloud) will be recognized as xvda or xvdb, while Ultra Cloud Disks (cloud_efficiency) and SSD Cloud Disks (cloud_ssd) as vda or vdb.</p> </li> </ul> |
| ClientToken       | String  | No       | <p>Guarantees the idempotence of the request. The value is generated by a client and must be globally unique. Only ASCII characters are allowed. It can contain a maximum of 64 ASCII characters. For more information, see <a href="#">How to ensure idempotence</a>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## Response parameters

| Name    | Type | Description |
|---------|------|-------------|
| OrderId | Long | Order ID.   |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=ModifyPrepayInstanceSpec
&RegionId=cn-hangzhou
&InstanceId=i-xxxxx1
&InstanceType=ecs.s1.large
&AutoPay=true
&OperatorType=upgrade
&ClientToken=xxxxxxxxxxxxxx
&<Common Request Parameters>
```

### Response example

#### XML format

```
<ModifyPrepayInstanceSpecResponse>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FE73368</RequestId>
  <OrderId>1011111111111111</OrderId>
</ModifyPrepayInstanceSpecResponse>
```

#### JSON format

```
{
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FE73368",
  "OrderId": 1011111111111111,
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                | Error message                                                                           | HTTP status code | Description                                                                |
|---------------------------|-----------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------|
| Account.Arrearage         | Your account has an outstanding payment.                                                | 400              | Overdue payment exists in your account.                                    |
| IdempotencieParamNotMatch | Request uses a client token in a previous request but is not identical to that request. | 400              | The parameters of the requests that use the same ClientToken do not match. |



| Error code                                  | Error message                                                                                          | HTTP status code | Description                                                             |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------|
| InvalidBillingMethod.<br>ValueNotSupported  | The operation is not permitted due to an invalid billing method of the instance.                       | 400              | The instance billing method is invalid.                                 |
| InvalidClientToken.<br>ValueNotSupported    | The ClientToken provided is invalid.                                                                   | 400              | The value of ClientToken is invalid. Only ASCII characters are allowed. |
| InvalidInstance.<br>UnpaidOrder             | The specified Instance has unpaid order.                                                               | 400              | The current instance has outstanding orders.                            |
| InvalidInstanceId.<br>NotFound              | The specified InstanceId does not exist.                                                               | 400              | The specified instance ID does not exist.                               |
| InvalidInstanceId.<br>Released              | The specified Instance has been released.                                                              | 400              | The specified instance has been released.                               |
| InvalidInstanceType.<br>ValueNotSupported   | The specified InstanceType is not supported.                                                           | 400              | The specified InstanceType is invalid or does not exist.                |
| InvalidInstanceType.<br>ValueUnauthorized   | The specified InstanceType is not authorized.                                                          | 400              | The specified InstanceType is unauthorized.                             |
| MissingParameter.InstanceId<br>NotSupported | The InstanceId should not be null.                                                                     | 400              | The InstanceId is required.                                             |
| MissingParameter.RegionId                   | The RegionId should not be null.                                                                       | 400              | The RegionId is required.                                               |
| OrderCreationFailed                         | Order creation failed, please check your params and try it again later.                                | 400              | Failed to create the order because of the parameters setting.           |
| Throttling                                  | You have made too many requests within a short time; your request is denied due to request throttling. | 400              | You have made too many frequent requests in a short time.               |

| Error code                                | Error message                                                                      | HTTP status code | Description                                                                                                                                     |
|-------------------------------------------|------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| ImageNotSupportedInstanceType             | The specified image does not support the specified InstanceType.                   | 403              | The specified image does not support this instance type.                                                                                        |
| InvalidAccountStatus.<br>NotEnoughBalance | Your account does not have enough balance.                                         | 403              | Your registered credit card is invalid or has credit limit set.                                                                                 |
| InvalidBillingMethod                      | The specified billing method is invalid.                                           | 403              | The specified billing method does not exist.                                                                                                    |
| InvalidUser.<br>PassRoleForbidden         | The RAM user does not have privilege to pass a role.                               | 403              | Your RAM user does not have the PassRole permission. Contact the owner of the primary account to <a href="#">grant</a> the PassRole permission. |
| BillingMethodNotFound                     | The account has not chosen any billing method.                                     | 404              | No payment method was selected for your account.                                                                                                |
| InvalidRegionId.<br>NotFound              | The specified RegionId does not exist.                                             | 404              | The specified RegionId does not exist.                                                                                                          |
| InternalError                             | The request processing has failed due to some unknown error, exception or failure. | 500              | Internal error.                                                                                                                                 |

## 5.18 ReactivateInstances

Reactivates a Pay-As-You-Go ECS instance that is suspended because of overdue payments and in the Stopped status.

### Description

When you call this interface, consider the following:

- The instance must be in the **Expired** (Stopped) or **Overdue and Being Recycled** (Stopped) status.

- You must pay the bills and reactivate the instance within 15 days after the instance is suspended because of overdue payments. Otherwise, the instance is released and the data cannot be restored. If you cannot reactivate a VPC-connected instance, try again later or [open a ticket](#) to contact Alibaba Cloud.
- For more information about the service restrictions, see [Reactivate instances](#) in the User Guide manual.
- If the operation is successful, the status of the instance becomes **Starting** (Starting).
- The OperationLocks of the [locked](#) instance cannot be "LockReason" : "security".

### Request parameters

| Name       | Type   | Required | Description                                             |
|------------|--------|----------|---------------------------------------------------------|
| Action     | String | Yes      | The name of this interface. Value: ReactivateInstances. |
| InstanceId | String | Yes      | The ID of the instance that you want to reactivate.     |

### Response parameters

All are common response parameters. See [Common response parameters](#).

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=ReactiveInstances
&InstanceId=i-instance1
&<Common Request Parameters>
```

#### Response examples

##### XML format

```
<ReactiveInstancesResponse>
  <RequestId>51AB7717-6E1A-4D1D-A44D-54CBxxxxxxxx</RequestId>
</ReactiveInstancesResponse>
```

##### JSON format

```
{
  "RequestId": "51AB7717-6E1A-4D1D-A44D-54CBxxxxxxxx"
}
```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                                     | Error message                                                                      | HTTP status code | Description                                                                                          |
|------------------------------------------------|------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------|
| IncorrectInstanceStatus                        | The current status of the resource does not support this operation.                | 403              | The operation is not supported when the instance is in its current status.                           |
| InstanceLockedForSecurity                      | The specified operation is denied as your instance is locked for security reasons. | 403              | The request is denied because this resource is locked for safety concerns.                           |
| InsufficientBalance                            | Your account does not have enough balance.                                         | 403              | Your account has unpaid bills. Pay all the bills and try again.                                      |
| ReactivateInstances.<br>InstanceStatusNotValid | Instance status is not Expired, ImageExpired or EcsAndImageExpired.                | 403              | The Pay-As-You-Go instance is not in the <b>Expired</b> or <b>Overdue and Being Recycled</b> status. |
| InvalidInstanceId.NotFound                     | The specified InstanceId does not exist.                                           | 404              | The specified <b>InstanceId</b> does not exist.                                                      |
| InvalidPayType.NotSupport                      | The specified pre pay instance not support.                                        | 404              | This operation is supported only for Pay-As-You-Go instances.                                        |
| InternalError                                  | The request processing has failed due to some unknown error.                       | 500              | The error message returned when an internal error occurs. Please try again later.                    |

## 5.19 RenewInstance

Renews a subscription instance.

### Description

When you call this interface, consider the following:

- This interface supports only Subscription ECS instances.
- By default, coupons available under your account will be preferentially used during payment if you are not using a free account.

- Your account must support credit payment. Otherwise, your request will be denied.

### Request parameters

| Name        | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------|---------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action      | String  | Yes      | Name of this interface. Value: RenewInstance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| InstanceId  | String  | Yes      | ID of the instance to be renewed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Period      | Integer | Yes      | Renewal period of a Subscription instance. This parameter is valid and mandatory only when InstanceChargeType is set to PrePaid.<br>Once <b>DedicatedHostId</b> is specified, the value range of the Period parameter must be within the subscription period of the dedicated host. Value range: <ul style="list-style-type: none"> <li>• {"1", "2", "3", "4"} when <b>PeriodUnit</b> is set to week.</li> <li>• {"1", "2", "3", "4", "5", "6", "7", "8", "9", "12", "24", "36", "48", "60"} when <b>PeriodUnit</b> is set to month</li> </ul> |
| PeriodUnit  | String  | No       | Unit of Period. Value range: <ul style="list-style-type: none"> <li>• Week</li> <li>• Month (Default value)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                         |
| ClientToken | String  | No       | Guarantees the idempotence of the request. The value is generated by a client and must be globally unique. Only ASCII characters are allowed. It can contain a maximum of 64 ASCII characters. For more information, see <a href="#">How to ensure idempotence</a> .                                                                                                                                                                                                                                                                           |

### Response parameters

All are common response parameters. See [Common response parameters](#).

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=RenewInstance
&InstanceId=i-instance1
&Period=1
&<Common Request Parameters>
```

#### Response example

**XML format**

```
<ModifyInstanceSpecResponse>
  <RequestId>473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E</RequestId>
</ModifyInstanceSpecResponse>
```

**JSON format**

```
{
  "RequestId": "473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E"
}
```

**Error codes**

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                           | Error message                                                                           | HTTP status code | Meaning                                                                        |
|--------------------------------------|-----------------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------|
| IdempotencieParamNotMatch            | Request uses a client token in a previous request but is not identical to that request. | 400              | The parameter does not match the request parameter using the same ClientToken. |
| InvalidClientToken.ValueNotSupported | The ClientToken provided is invalid.                                                    | 400              | The ClientToken value is invalid. Only ASCII characters are allowed.           |
| InvalidPeriod                        | The specified period is not valid.                                                      | 400              | The specified Period is invalid (not a digit or beyond the value range).       |
| ChargeTypeViolation                  | The operation is not permitted due to charge type of the instance.                      | 403              | The payment method does not support this operation.                            |
| IncorrectInstanceStatus              | The current status of the resource does not support this operation.                     | 403              | The current state of the resource does not support this operation.             |
| Instance.UnPaidOrder                 | The specified instance has unpaid order.                                                | 403              | There are still unpaid orders under this instance.                             |
| InstanceLockedForSecurity            | The specified operation is denied as your instance is locked for security reasons.      | 403              | This operation is denied because the instance is locked for security reasons.  |

| Error code                 | Error message                            | HTTP status code | Meaning                                  |
|----------------------------|------------------------------------------|------------------|------------------------------------------|
| LastTokenProcessing        | The last token request is processing.    | 403              | The last request is still in progress.   |
| InvalidInstanceId.NotFound | The specified InstanceId does not exist. | 404              | The specified InstanceId does not exist. |

## 6 Launch templates

---

### 6.1 CreateLaunchTemplate

Creates an instance launch template, or launch template for short. An instance launch template saves you the trouble of entering a large number of configuration parameters each time you create an instance.

#### Description

Instance launch templates contain configurations used to create instances, such as the instance region, image ID, instance type, security group ID, and internet bandwidth settings. If you do not specify a certain instance configuration in the template, you must specify this configuration when creating an instance. When creating templates (**CreateLaunchTemplate**), the template version numbers start from 1. After creating one template, you can create multiple versions based on this template (**CreateLaunchTemplateVersion**). Version numbers start from 1 and increase sequentially. If you do not specify a template version number when creating an instance (**RunInstances**), default version is used.

When you call this interface, consider the following:

- You can create up to 30 instance launch templates per region. Each template can have up to 30 versions.
- Most instance launch template parameters are optional. When you create a template, ECS does not verify the existence or validity of its parameter values. The validity of parameter values is only verified when you create instances.
- If you set a certain configuration in an instance launch template, you cannot filter out this configuration when creating an instance (**RunInstances**). For example, if you set `HostName=LocalHost` in the template and in **RunInstances** the value of `HostName` is null, the `LocalHost` still takes effect. If you want to overwrite the `HostName=LocalHost` configuration, set `HostName=MyHost` in **RunInstances** or other parameter values if you want.

#### Request parameters

| Name   | Type   | Required | Description                                              |
|--------|--------|----------|----------------------------------------------------------|
| Action | String | Yes      | The name of this interface. Value: CreateLaunchTemplate. |



| Name                    | Type   | Required | Description                                                                                                                                                                                                                                                                                             |
|-------------------------|--------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RegionId                | String | Yes      | Region ID of an instance. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                                  |
| LaunchTemplateName      | String | Yes      | Instance launch template name. Can contain [2, 128] characters in length. It must start with an English letter (uppercase or lowercase) and can contain numbers, periods (.), colons (:), underscores (_), and hyphens (-). It cannot start with "http://" or "https://".                               |
| VersionDescription      | String | No       | Description of instance launch template version 1. It can be [2, 256] characters in length. It cannot start with "http://" or "https://". The default value is null.                                                                                                                                    |
| ImageId                 | String | No       | Image ID.                                                                                                                                                                                                                                                                                               |
| InstanceType            | String | No       | Instance type. For more information, call <a href="#">DescribeInstanceTypes</a> to obtain the latest instance type list.                                                                                                                                                                                |
| SecurityGroupId         | String | No       | The security group ID.                                                                                                                                                                                                                                                                                  |
| NetworkType             | String | No       | Network type of the instance. Value options: Classic   VPC.                                                                                                                                                                                                                                             |
| VSwitchId               | String | No       | When creating a VPC-Connected instance, you must specify its VSwitch ID.                                                                                                                                                                                                                                |
| InstanceName            | String | No       | The name of the instance. The name is a string of 2 to 128 characters. It must begin with an English or a Chinese character. It can contain A-Z, a-z, Chinese characters, numbers, periods (.), colons (:), underscores (_), and hyphens (-).                                                           |
| Description             | String | No       | Instance description.                                                                                                                                                                                                                                                                                   |
| InternetMaxBandwidthIn  | String | No       | The maximum inbound bandwidth from the internet network, measured in Mbit/s. Value range: [1, 200].                                                                                                                                                                                                     |
| InternetMaxBandwidthOut | String | No       | Maximum outbound bandwidth from the Internet, its unit of measurement is Mbit/s. Value range: [0, 100].                                                                                                                                                                                                 |
| HostName                | String | No       | Instance host name. <ul style="list-style-type: none"> <li>It cannot start or end with a period (.) or a hyphen (-) and it cannot have two or more consecutive periods (.) or hyphens (-).</li> <li>For Windows: The host name can be [2, 15] characters in length. It can contain A-Z, a-z,</li> </ul> |

| Name                   | Type    | Required | Description                                                                                                                                                                                                                                                                                                     |
|------------------------|---------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        |         |          | <p>numbers, periods (.), and hyphens (-). It cannot only contain numbers.</p> <ul style="list-style-type: none"> <li>For other operating systems: The host name can be [2, 64] characters in length. It can be segments separated by periods (.). It can contain A-Z, a-z, numbers, and hyphens (-).</li> </ul> |
| ZoneId                 | String  | No       | The zone ID of the instance.                                                                                                                                                                                                                                                                                    |
| SystemDisk.Category    | String  | No       | <p>The category of the system disk. System disk type. Optional values:</p> <ul style="list-style-type: none"> <li>Cloud: Basic cloud disk.</li> <li>cloud_efficiency: Ultra cloud disk.</li> <li>cloud_ssd: SSD Cloud Disks.</li> <li>ephemeral_ssd: Ephemeral SSD.</li> </ul>                                  |
| SystemDisk.Size        | Integer | No       | Size of the system disk, measured in GB. Value range: [20, 500].                                                                                                                                                                                                                                                |
| SystemDisk.DiskName    | String  | No       | System disk name. The name is a string of 2 to 128 characters. It must begin with an English or a Chinese character. It can contain A-Z, a-z, Chinese characters, numbers, periods (.), colons (:), underscores (_), and hyphens (-).                                                                           |
| SystemDisk.Description | String  | No       | System disk description. It cannot begin with http:// or https://.                                                                                                                                                                                                                                              |
| DataDisk.n.Category    | String  | No       | <p>The data disk type. Value range of n: [1, 16]. Optional values</p> <ul style="list-style-type: none"> <li>Cloud: Basic cloud disk.</li> <li>cloud_efficiency: Ultra cloud disk.</li> <li>cloud_ssd: SSD Cloud Disks.</li> <li>ephemeral_ssd: Ephemeral SSD.</li> </ul>                                       |
| DataDisk.n.Size        | Integer | No       | <p>The data disk capacity. Value range of n: [1, 16]. Value range:</p> <ul style="list-style-type: none"> <li>cloud: [5, 2000]</li> <li>cloud_efficiency: [20, 32768]</li> <li>cloud_ssd: [20, 32768]</li> <li>ephemeral_ssd: [5, 800]</li> </ul>                                                               |

| Name                                    | Type    | Required | Description                                                                                                                                       |
|-----------------------------------------|---------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| DataDisk.n.SnapshotId                   | String  | No       | The snapshot used to create the data disk. Value range of n: [1, 16].                                                                             |
| DataDisk.n.Encrypted                    | Boolean | No       | The data disk capacity. Value range of n: [1, 16].                                                                                                |
| DataDisk.n.DiskName                     | String  | No       | The data disk name. Value range of n: [1, 16].                                                                                                    |
| DataDisk.n.Description                  | String  | No       | Description of a data disk. The valid range of n is [1, 16].                                                                                      |
| DataDisk.n.DeleteWithInstance           | String  | No       | Whether the data disk is released with its instance. Value range of n: [1, 16].                                                                   |
| IoOptimized                             | String  | No       | Whether it is an I/O-optimized instance or not.<br>Optional values: <ul style="list-style-type: none"> <li>• none</li> <li>• optimized</li> </ul> |
| NetworkInterface.1.PrimaryIpAddress     | String  | No       | The primary private IP address of the ENI.                                                                                                        |
| NetworkInterface.1.VSwitchId            | String  | No       | The VSwitch ID for ENI. The instance must be in the same zone of the same VPC network as the ENI, but they may belong to different VSwitches.     |
| NetworkInterface.1.SecurityGroupId      | String  | No       | The security group ID must be one in the same VPC.                                                                                                |
| NetworkInterface.1.NetworkInterfaceName | String  | No       | ENI name.                                                                                                                                         |
| NetworkInterface.1.Description          | String  | No       | The ENI description.                                                                                                                              |
| InternetChargeType                      | String  | No       | Internet bandwidth billing method. Optional values: PayByTraffic                                                                                  |
| UserData                                | String  | No       | User data of the instance, which is Base64-encoded. Size of the raw data cannot exceed 16 KB.                                                     |
| KeyPairName                             | String  | No       | The name of the key pair.                                                                                                                         |

| Name                        | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------|--------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                             |        |          | <ul style="list-style-type: none"> <li>Ignore this parameter for Windows instances. It is null by default. Even if you enter this parameter, only the Password content is used.</li> <li>The password logon method for Linux instances is set to forbidden upon initialization.</li> </ul>                                                                                                                                                        |
| RamRoleName                 | String | No       | The RAM role name of the instance. You can use the RAM API <a href="#">ListRoles</a> to query instance RAM role names.                                                                                                                                                                                                                                                                                                                            |
| AutoReleaseTime             | String | No       | Instance auto release time. The time is presented using the <a href="#">ISO8601</a> standard and in UTC time. The format is YYYY-MM-DDTHH:MM:SSZ.                                                                                                                                                                                                                                                                                                 |
| SpotStrategy                | String | No       | <p>The spot strategy for a Pay-As-You-Go instance. This parameter is valid and mandatory only when InstanceChargeType is set to PostPaid. Value range:</p> <ul style="list-style-type: none"> <li>NoSpot: Normal Pay-As-You-Go instance.</li> <li>SpotWithPriceLimit: Sets the maximum price for a spot instance.</li> <li>SpotAsPriceGo: The system automatically calculates the price. The maximum value is the Pay-As-You-Go price.</li> </ul> |
| SpotPriceLimit              | Float  | No       | Sets the maximum hourly instance price. Supports up to three decimal places.                                                                                                                                                                                                                                                                                                                                                                      |
| SecurityEnhancementStrategy | String | No       | Whether or not to activate the security enhancement feature and install network security software free of charge. Optional values: Active   Deactive.                                                                                                                                                                                                                                                                                             |
| Tag.n.Key                   | String | No       | This tag applies to instance, disk, security group, or image. The key of a tag of which n is from 1 to 20. Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                                                                                                                                                                     |
| Tag.n.Value                 | String | No       | This tag applies to instance, disk, security group, or image. The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                                                                                                                                                            |

| Name                    | Type   | Required | Description                                                                                                                                                                                                                                                   |
|-------------------------|--------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TemplateTag.n.<br>Key   | String | No       | This tag applies to launch template. The key of a tag of which n is from 1 to 20. Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".          |
| TemplateTag.n.<br>Value | String | No       | This tag applies to launch template. The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://". |

### Response parameters

| Name             | Type   | Description                      |
|------------------|--------|----------------------------------|
| LaunchTemplateId | String | The launch instance template ID. |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=CreateLaunchTemplate
&RegionId=cn-hangzhou
&LaunchTemplateName=lt-name1
&InstanceType=ecs.cm4.6xlarge
&SecurityGroupId=sg-securitygroupid
&<Common Response Parameters>
```

#### Response example

#### XML format

```
<CreateLaunchTemplateResponse>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FExxxxx</RequestId>
  <LaunchTemplateId>lt-m5eiaupmvm2op9dxxxxx</LaunchTemplateId>
</CreateLaunchTemplateResponse>
```

#### JSON format

```
{
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FExxxxx",
  "LaunchTemplateId": "lt-m5eiaupmvm2op9dxxxxx"
```

}

## Error codes

The following error codes are specific to this interface. For more error codes, visit the [API error center](#).

| Error code                          | Error messages                                                                     | HTTP status code | Description                                                   |
|-------------------------------------|------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------|
| MissingParameter                    | The input parameter that is mandatory for processing this request is not supplied. | 400              | A required parameter is missing.                              |
| InvalidParameter                    | the parameter(s) provided is(are) invalid.                                         | 400              | The specified parameter is invalid.                           |
| InvalidLaunchTemplateName.Malformed | The specified parameter LaunchTemplateName is not valid.                           | 400              | The specified LaunchTemplateName is invalid.                  |
| InvalidDescription.Malformed        | The specified parameter "VersionDescription" is not valid.                         | 400              | The specified VersionDescription is invalid.                  |
| InvalidUserData.SizeExceeded        | The specified parameter UserData exceeds the size.                                 | 400              | The raw UserData exceeds 16 KB.                               |
| InvalidUserData.Base64FormatInvalid | The specified parameter UserData must be base64 encoded.                           | 400              | UserData must be Base64-encoded.                              |
| LaunchTemplateLimitExceed           | The maximum number of templates is exceeded.                                       | 403              | You can create up to 30 instance launch templates per region. |
| LaunchTemplateName.Duplicated       | The specified LaunchTemplateName "{0}" already exist.                              | 403              | The specified LaunchTemplateName already exists.              |
| InnerServiceFailed                  | call inner service failed                                                          | 403              | An internal server error.                                     |

## 6.2 CreateLaunchTemplateVersion

Creates a version based on the specified instance launch template.

### Description

You can create up to 30 versions of each instance launch template. Instead of a template modification API, we provide a version iteration API (**CreateLaunchTemplateVersion**) that allows you to modify the parameters in a template by creating a new version. For more information, see **CreateLaunchTemplate**.

### Request parameters

| Name               | Type   | Required | Description                                                                                                                                                                                                                                   |
|--------------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action             | String | Yes      | The name of this interface. Value: CreateLaunchTemplateVersion.                                                                                                                                                                               |
| RegionId           | String | Yes      | Region ID of an instance. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                        |
| LaunchTemplateId   | String | Yes      | Instance launch template ID. For more information, call <a href="#">DescribeLaunchTemplates</a> . Either the LaunchTemplateId or the LaunchTemplateName must be specified to choose a template.                                               |
| LaunchTemplateName | String | Yes      | Instance launch template name.                                                                                                                                                                                                                |
| VersionDescription | String | No       | Description of instance launch template version. It cannot begin with http:// or https://.                                                                                                                                                    |
| ImageId            | String | No       | Image ID.                                                                                                                                                                                                                                     |
| InstanceType       | String | No       | Instance type. For more information, call <a href="#">Instance type families</a> to obtain the latest instance type list.                                                                                                                     |
| SecurityGroupId    | String | No       | The security group ID.                                                                                                                                                                                                                        |
| NetworkType        | String | No       | Network type of the instance. Optional values: Classic   VPC.                                                                                                                                                                                 |
| VSwitchId          | String | No       | When creating a VPC-Connected instance, you must specify its VSwitch ID.                                                                                                                                                                      |
| InstanceName       | String | No       | The name of the instance. The name is a string of 2 to 128 characters. It must begin with an English or a Chinese character. It can contain A-Z, a-z, Chinese characters, numbers, periods (.), colons (:), underscores (_), and hyphens (-). |

| Name                    | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------|---------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description             | String  | No       | Instance description.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| InternetMaxBandwidthIn  | String  | No       | The maximum inbound bandwidth from the internet network, measured in Mbit/s. Value range: [1, 200].                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| InternetMaxBandwidthOut | String  | No       | The maximum outbound bandwidth to the internet network, measured in Mbit/s. Value range: [0, 100].                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| HostName                | String  | No       | Instance host name. <ul style="list-style-type: none"> <li>It cannot start or end with a period (.) or a hyphen (-) and it cannot have two or more consecutive periods (.) or hyphens (-).</li> <li>For Windows: The host name can be [2, 15] characters in length. It can contain A-Z, a-z, numbers, periods (.), and hyphens (-). It cannot only contain numbers.</li> <li>For other operating systems: The host name can be [2, 64] characters in length. It can be segments separated by periods (.). It can contain A-Z, a-z, numbers, and hyphens (-).</li> </ul> |
| ZoneId                  | String  | No       | The zone ID of the instance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| SystemDisk.Category     | String  | No       | The category of the system disk. Optional values: <ul style="list-style-type: none"> <li>Cloud: Basic cloud disk.</li> <li>cloud_efficiency: Ultra cloud disk.</li> <li>cloud_ssd: SSD Cloud Disks.</li> <li>ephemeral_ssd: Ephemeral SSD.</li> </ul>                                                                                                                                                                                                                                                                                                                   |
| SystemDisk.Size         | Integer | No       | The system disk size, in GiB. Value range: [20, 500].                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| SystemDisk.DiskName     | String  | No       | System Disk name. It is a string of 2 to 128 English letters and special characters. It must start with an English letter. It can contain numbers, colons (:), periods (.), underscores (_), and hyphens (-). It cannot start with "http://" or "https://".                                                                                                                                                                                                                                                                                                             |
| SystemDisk.Description  | String  | No       | System Disk description. Length: [2, 256] characters. It cannot start with "http://" or "https://".                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| DataDisk.n.Category     | String  | No       | The data disk type. Value range of n: [1, 16]. Optional values: <ul style="list-style-type: none"> <li>Cloud: Basic cloud disk.</li> <li>cloud_efficiency: Ultra cloud disk.</li> <li>cloud_ssd: SSD Cloud Disks.</li> </ul>                                                                                                                                                                                                                                                                                                                                            |



| Name                                    | Type    | Required | Description                                                                                                                                                                                                                                       |
|-----------------------------------------|---------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                         |         |          | <ul style="list-style-type: none"> <li>ephemeral_ssd: Ephemeral SSD.</li> </ul>                                                                                                                                                                   |
| DataDisk.n.Size                         | Integer | No       | <p>The data disk capacity. Value range of n: [1, 16]. Value range:</p> <ul style="list-style-type: none"> <li>cloud: [5, 2000]</li> <li>cloud_efficiency: [20, 32768]</li> <li>cloud_ssd: [20, 32768]</li> <li>ephemeral_ssd: [5, 800]</li> </ul> |
| DataDisk.n.SnapshotId                   | String  | No       | The snapshot used to create the data disk. Value range of n: [1, 16].                                                                                                                                                                             |
| DataDisk.n.Encrypted                    | Boolean | No       | Whether the data disk is encrypted. Value range of n: [1, 16].                                                                                                                                                                                    |
| DataDisk.n.DiskName                     | String  | No       | The data disk name. Value range of n: [1, 16].                                                                                                                                                                                                    |
| DataDisk.n.Description                  | String  | No       | The data disk description. Value range of n: [1, 16].                                                                                                                                                                                             |
| DataDisk.n.DeleteWithInstance           | String  | No       | Whether the data disk is released with its instance. Value range of n: [1, 16].                                                                                                                                                                   |
| IoOptimized                             | String  | No       | <p>Whether it is an I/O-optimized instance or not. Optional values:</p> <ul style="list-style-type: none"> <li>none</li> <li>optimized</li> </ul>                                                                                                 |
| NetworkInterface.1.PrimaryIpAddress     | String  | No       | The primary private IP address of ENI.                                                                                                                                                                                                            |
| NetworkInterface.1.VSwitchId            | String  | No       | The VSwitch ID for ENI. The instance must be in the same zone of the same VPC network as the ENI, but they may belong to different VSwitches.                                                                                                     |
| NetworkInterface.1.SecurityGroupId      | String  | No       | The security group ID of ENI. You must specify a security group in the same VPC network.                                                                                                                                                          |
| NetworkInterface.1.NetworkInterfaceName | String  | No       | The name of ENI. The name is a string of 2 to 128 characters. It must begin with an English or a Chinese character. It can contain A-Z, a-z,                                                                                                      |

| Name                           | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------|--------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                |        |          | Chinese characters, numbers, periods (.), colons (:), underscores (_), and hyphens (-).                                                                                                                                                                                                                                                                                                                                                                        |
| NetworkInterface.1.Description | String | No       | The description of ENI. It cannot begin with http:// or https://.                                                                                                                                                                                                                                                                                                                                                                                              |
| InternetChargeType             | String | No       | Internet bandwidth billing method. Value options: PayByTraffic                                                                                                                                                                                                                                                                                                                                                                                                 |
| UserData                       | String | No       | User data of the instance, which is Base64-encoded. Size of the raw data cannot exceed 16 KB.                                                                                                                                                                                                                                                                                                                                                                  |
| KeyPairName                    | String | No       | The name of the key pair. <ul style="list-style-type: none"> <li>This parameter is valid only for a Linux instance. It is null by default. If a value is set for parameter KeyPairName, the Password still takes effect.</li> <li>The user name and password authentication method is disabled if a value is set for parameter KeyPairName for a Linux instance.</li> </ul>                                                                                    |
| RamRoleName                    | String | No       | The RAM role name of the instance. You can use the RAM API <a href="#">ListRoles</a> to query instance RAM role names.                                                                                                                                                                                                                                                                                                                                         |
| AutoReleaseTime                | String | No       | Instance auto release time. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is yyyy-MM-ddTHH:mm:ssZ.                                                                                                                                                                                                                                                                                                        |
| SpotStrategy                   | String | No       | The preemption strategy for Pay-As-You-Go (PostPaid) instances. This parameter is valid and mandatory only when InstanceChargeType is set to PostPaid. Optional values: <ul style="list-style-type: none"> <li>NoSpot: Normal Pay-As-You-Go instance.</li> <li>SpotWithPriceLimit: Sets the maximum price for a spot instance.</li> <li>SpotAsPriceGo: The system automatically calculates the price. The maximum value is the Pay-As-You-Go price.</li> </ul> |
| SpotPriceLimit                 | Float  | No       | Sets the maximum hourly instance price. Supports up to three decimal places.                                                                                                                                                                                                                                                                                                                                                                                   |
| SecurityEnhancementStrategy    | String | No       | Whether or not to activate the security enhancement feature and install network security software free of charge. Optional values: Active   Deactive.                                                                                                                                                                                                                                                                                                          |

| Name        | Type   | Required | Description                                                                                                                                                                                                                                                                              |
|-------------|--------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tag.n.Key   | String | No       | This tag applies to instance, disk, security group, or image. The key of a tag of which n is from 1 to 20 . Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https ://".          |
| Tag.n.Value | String | No       | This tag applies to instance, disk, security group, or image. The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length . It cannot begin with "aliyun", "acs:", "http://", or " https://". |

### Response parameters

| Name                        | Type | Description                                  |
|-----------------------------|------|----------------------------------------------|
| LaunchTemplateVersionNumber | Long | The launch instance template version number. |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=CreateLaunchTemplateVersion
&RegionId=cn-hangzhou
&LaunchTemplateName=lt-name1
&InstanceType=ecs.cm4.6xlarge
&SecurityGroupId=sg-securitygroupid
&<Common Request Parameters>
```

#### Response example

#### XML format

```
<CreateLaunchTemplateVersionResponse>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FExxxxx</RequestId>
  <LaunchTemplateVersionNumber>2</LaunchTemplateVersionNumber>
</CreateLaunchTemplateVersionResponse>
```

#### JSON format

```
{
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FExxxxx",
  "LaunchTemplateVersionNumber": 2
}
```

}

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                          | Error messages                                                                           | HTTP status code | Description                                                        |
|-------------------------------------|------------------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------|
| InvalidLaunchTemplate.NotFound      | The specified LaunchTemplateId "{0}" LaunchTemplateName "{1}" is not found.              | 400              | The specified LaunchTemplateId or LaunchTemplateName is not found. |
| MissingParameter                    | The input parameter "{0}" that is mandatory for processing this request is not supplied. | 400              | A required parameter is missing.                                   |
| InvalidParameter                    | the parameter(s) "{0}" provided is(are) invalid.                                         | 400              | The specified parameter is invalid.                                |
| InvalidDescription.Malformed        | The specified parameter "VersionDescription" is not valid.                               | 400              | The specified VersionDescription is invalid.                       |
| InvalidUserData.SizeExceeded        | The specified parameter UserData exceeds the size.                                       | 400              | The raw UserData exceeds 16 KB.                                    |
| InvalidUserData.Base64FormatInvalid | The specified parameter UserData must be base64 encoded.                                 | 400              | UserData must be Base64-encoded.                                   |
| LaunchTemplateVersionLimitExceed    | The maximum number of template's versions is exceeded.                                   | 403              | You can create up to 30 versions of each instance launch template. |
| InnerServiceFailed                  | call inner service failed                                                                | 403              | An internal server error.                                          |

## 6.3 DeleteLaunchTemplate

Deletes an instance launch template.

### Request parameters

| Name               | Type   | Required | Description                                                                                                                                                                                          |
|--------------------|--------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action             | String | Yes      | The name of this interface. Value : DeleteLaunchTemplate.                                                                                                                                            |
| RegionId           | String | Yes      | Region ID of an instance launch template. To view the latest list of Alibaba Cloud regions, call <a href="#">DescribeRegions</a> .                                                                   |
| LaunchTemplateId   | String | No       | Instance launch template ID. For more information, call <a href="#">DescribeLaunchTemplates</a> . Either the LaunchTemplateId or the LaunchTemplateName must be specified to determine the template. |
| LaunchTemplateName | String | No       | Instance launch template name.                                                                                                                                                                       |

### Response parameters

All are common response parameters. See [Common parameters](#).

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=DeleteLaunchTemplate
&RegionId=cn-hangzhou
&LaunchTemplateName=lt-name1
&<Common Request Parameters>
```

#### Response example

### XML format

```
<DeleteLaunchTemplateResponse>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FExxxxx</RequestId>
</DeleteLaunchTemplateResponse>
```

### JSON format

```
{
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FExxxxx",
}
```

### Error codes

The following error codes are specific to this interface. For more error codes, visit the [API error center](#).

| Error code         | Error message                                                                            | HTTP status code | Description                         |
|--------------------|------------------------------------------------------------------------------------------|------------------|-------------------------------------|
| MissingParameter   | The input parameter "{0}" that is mandatory for processing this request is not supplied. | 400              | A required parameter is missing.    |
| InvalidParameter   | the parameter(s) "{0}" provided is(are) invalid.                                         | 400              | The specified parameter is invalid. |
| InnerServiceFailed | call inner service failed                                                                | 403              | Internal server error.              |

## 6.4 DeleteLaunchTemplateVersion

Deletes a specified instance launch template version. However, if the instance launch template version you intend to delete is the default version, you must use the [DeleteLaunchTemplate](#) API to delete the entire instance launch template.

### Request parameters

| Name     | Type   | Required | Description                                                        |
|----------|--------|----------|--------------------------------------------------------------------|
| Action   | String | Yes      | The name of this interface.<br>Value: DeleteLaunchTemplateVersion. |
| RegionId | String | Yes      | Region ID of the template. For more information, call              |

| Name               | Type   | Required | Description                                                                                                                                                         |
|--------------------|--------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |        |          | <a href="#">DescribeRegions</a> to view the latest list of Alibaba Cloud regions.                                                                                   |
| DeleteVersion.n    | Long   | Yes      | Template version number. Value range of `n`: [1, 29]. For more information, call <a href="#">DescribeLaunchTemplateVersions</a> to query the template version list. |
| LaunchTemplateId   | String | No       | Template ID. Either the LaunchTemplateId or the LaunchTemplateName must be specified to determine the template.                                                     |
| LaunchTemplateName | String | No       | Template name.                                                                                                                                                      |

### Response parameters

All are common response parameters. See [Common parameters](#).

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=DeleteLaunchTemplateVersion
&RegionId=cn-hangzhou
&LaunchTemplateName=lt-name1
&DeleteVersion.1=1
&<Common Request Parameters>
```

#### Response example

#### XML format

```
<DeleteLaunchTemplateVersionResponse>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FExxxxx</RequestId>
</DeleteLaunchTemplateVersionResponse>
```

#### JSON format

```
{
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FExxxxx",
```

```
}
```

## Error codes

The following error codes are specific to this interface. For more error codes, visit the [API error center](#).

| Error code                                | Error message                                                                            | HTTP status code | Description                                              |
|-------------------------------------------|------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------|
| MissingParameter                          | The input parameter "{0}" that is mandatory for processing this request is not supplied. | 400              | A required parameter is missing.                         |
| InvalidParameter                          | the parameter(s) "{0}" provided is(are) invalid.                                         | 400              | The specified parameter is invalid.                      |
| InnerServiceFailed                        | call inner service failed                                                                | 403              | Internal server error.                                   |
| InvalidOperation.<br>DeleteDefaultVersion | Delete default version from template is not allowed.                                     | 403              | You cannot delete the default template version directly. |

## 6.5 DescribeLaunchTemplates

Queries one or more available instance launch templates.

### Request parameters

| Name               | Type   | Required | Description                                                                                                                                                       |
|--------------------|--------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action             | String | Yes      | The name of this interface Value: DescribeLaunchTemplates.                                                                                                        |
| RegionId           | String | Yes      | Region ID of an instance launch template. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                            |
| LaunchTemplateId   | List   | No       | One or more instance launch template ID, 100 IDs can be specified at most. You must specify the LaunchTemplateId or LaunchTemplateName to determine the template. |
| LaunchTemplateName | List   | No       | One or more instance launch template name, 100 names can be specified at most.                                                                                    |
| Tag.n.Key          | String | No       | This tag applies to instance, disk, security group, or image. The key of a tag of which n is from 1 to 20                                                         |



| Name                | Type    | Required | Description                                                                                                                                                                                                                                                                            |
|---------------------|---------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     |         |          | . Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                                                                                                                   |
| Tag.n.Value         | String  | No       | This tag applies to instance, disk, security group, or image. The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://". |
| TemplateTag.n.Key   | String  | No       | This tag applies to launch template. The key of a tag of which n is from 1 to 20. Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                                   |
| TemplateTag.n.Value | String  | No       | This tag applies to launch template. The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                          |
| PageNumber          | Integer | No       | Page number of the instance launch template list.<br>Start value: 1.<br>Default value: 1.                                                                                                                                                                                              |
| PageSize            | Integer | No       | Number of rows per page when querying by page.<br>Maximum Value: 50.<br>Default value: 10.                                                                                                                                                                                             |

### Response parameters

| Name              | Type                              | Description                                    |
|-------------------|-----------------------------------|------------------------------------------------|
| TotalCount        | Integer                           | Total number of instance launch templates.     |
| PageNumber        | Integer                           | Current page number.                           |
| PageSize          | Integer                           | Number of rows per page when querying by page. |
| LaunchTemplateSet | <a href="#">LaunchTemplateSet</a> | The instance launch template information set.  |

### LaunchTemplateSet

| Name                 | Type   | Description                                       |
|----------------------|--------|---------------------------------------------------|
| CreateTime           | String | The creation time of an instance launch template. |
| ModifiedTime         | String | Time of last modification.                        |
| LaunchTemplateId     | String | Template ID.                                      |
| LaunchTemplateName   | String | Template name.                                    |
| DefaultVersionNumber | Long   | The default template version number.              |
| LatestVersionNumber  | Long   | The latest template version number.               |
| CreatedBy            | String | Creator of the template.template.                 |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeLaunchTemplates
&RegionId=cn-hangzhou
&<Common Request Parameters>
```

### Response example

#### XML format

```
<DescribeLaunchTemplatesResponse>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FExxxxx</RequestId>
  <TotalCount>1</TotalCount>
  <PageNumber>1</PageNumber>
  <PageSize>10</PageSize>
  <LaunchTemplateSets>
    <LaunchTemplateSet>
      <CreateTime>2018-05-14T14:18:00Z</CreateTime>
      <ModifiedTime>2018-05-14T14:18:00Z</ModifiedTime>
      <LaunchTemplateId>lt-m5e3ofjr1zn1aw7xxxx</LaunchTemplateId>
      <LaunchTemplateName>wd-1526307480xxx</LaunchTemplateName>
      <DefaultVersionNumber>1</DefaultVersionNumber>
      <LatestVersionNumber>1</LatestVersionNumber>
      <CreatedBy>1942111349714xxx</CreatedBy>
    </LaunchTemplateSet>
  </LaunchTemplateSets>
</DescribeLaunchTemplatesResponse>
```

#### JSON format

```
"RequestId": "04F0F334-1335-436C-A1D7-6C044FExxxxx",
"TotalCount": 1,
"PageNumber": 1,
```

```
"PageSize":10,
"LaunchTemplateSets":{
  "LaunchTemplateSet":[{
    "LaunchTemplateName":"wd-1526307480xxx",
    "CreatedBy":"1942111349714xxx",
    "ModifiedTime":"2018-05-14T14:18:00Z",
    "LatestVersionNumber":1,
    "CreateTime":"2018-05-14T14:18:00Z",
    "LaunchTemplateId":"lt-m5e3ofjr1zn1aw7qdx",
    "DefaultVersionNumber":1
  }
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                | Error message                                                                            | HTTP status code | Description                         |
|---------------------------|------------------------------------------------------------------------------------------|------------------|-------------------------------------|
| MissingParameter          | The input parameter "{0}" that is mandatory for processing this request is not supplied. | 400              | A required parameter is missing.    |
| InvalidParameter          | the parameter(s) "{0}" provided is(are ) invalid.                                        | 400              | The specified parameter is invalid. |
| InternalServerErrorFailed | call inner service failed                                                                | 403              | Internal server error.              |

## DescribeLaunchTemplateVersions

Queries instance launch template versions.

### Request Parameters

| Parameter | Type   | Required | Description                                                                                                                             |
|-----------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Action    | String | Yes      | The name of this interface. Value : DescribeLaunchTemplateVersions.                                                                     |
| RegionId  | String | Yes.     | Region ID of an instance launch template. You can all <a href="#">DescribeRegions</a> to view the latest list of Alibaba Cloud regions, |

| Parameter               | Type    | Required | Description                                                                                                                 |
|-------------------------|---------|----------|-----------------------------------------------------------------------------------------------------------------------------|
| LaunchTemplateId        | String  | No       | Instance launch template ID. Either the LaunchTemplateId or LaunchTemplateName must be specified to determine the template. |
| LaunchTemplateName      | String  | No       | Instance launch template name.                                                                                              |
| LaunchTemplateVersion.N | Long    | No       | One or more instance launch template versions.                                                                              |
| MinVersion              | Long    | No       | The minimum version number when a range is used to specify the template.                                                    |
| MaxVersion              | Long    | No       | The maximum version number when a range is used to specify the template.                                                    |
| DefaultVersion          | Boolean | No       | Whether to query the default version.                                                                                       |
| PageNumber              | Integer | No       | Page number of the instance launch template list. Start value: 1.<br>Default value: 1.                                      |
| PageSize                | Integer | No       | Number of rows per page when querying by page. Maximum Value: 50.<br>Default value: 10.                                     |

### Response parameters

| Parameter  | Type    | Description                                |
|------------|---------|--------------------------------------------|
| TotalCount | Integer | Total number of instance launch templates. |

| Parameter                | Type                                     | Description                                    |
|--------------------------|------------------------------------------|------------------------------------------------|
| Pagenumber               | Integer                                  | Current page number.                           |
| Pagesize                 | Integer                                  | Number of rows per page when querying by page. |
| LaunchTemplateVersionSet | <a href="#">LaunchTemplateVersionSet</a> | Information about the template version.        |

**LaunchTemplateVersionSet**

| Parameter          | Type                               | Description                          |
|--------------------|------------------------------------|--------------------------------------|
| CreateTime         | String                             | Template creation time.              |
| ModifiedTime       | String                             | Time of last template modification.  |
| LaunchTemplateId   | String                             | Template ID.                         |
| LaunchTemplateName | String                             | Template name.                       |
| DefaultVersion     | Boolean                            | Default template version.            |
| VersionNumber      | Long                               | Template version number.             |
| VersionDescription | Long                               | Template version description.        |
| CreatedBy          | String                             | Creator of the template.             |
| LaunchTemplateData | <a href="#">LaunchTemplateData</a> | The specific template configuration. |

**Data type: LaunchTemplateData**

| Parameter              | Type   | Description                       |
|------------------------|--------|-----------------------------------|
| ImageId                | String | Image ID.                         |
| InstanceType           | String | Instance type.                    |
| SecurityGroupId        | String | Security group ID.                |
| VSwitchId              | String | VSwitch ID.                       |
| InstanceName           | String | Instance name.                    |
| Description            | String | Instance description.             |
| InternetMaxBandwidthIn | String | Maximum inbound public bandwidth. |

| Parameter                               | Type    | Description                                                      |
|-----------------------------------------|---------|------------------------------------------------------------------|
| InternetMaxBandwidthOut                 | String  | Maximum outbound public bandwidth.                               |
| HostName                                | String  | Instance host name.                                              |
| ZoneId                                  | String  | Instance zone ID.                                                |
| Systemdisk.Category                     | String  | System disk type.                                                |
| SystemDisk.Size                         | Integer | System disk size, in GiB.                                        |
| SystemDisk.DiskName                     | String  | System disk name.                                                |
| SystemDisk.Description                  | String  | System disk description.                                         |
| DataDisk.n.Size                         | Integer | Data disk size.                                                  |
| DataDisk.n.SnapshotId                   | String  | Snapshot ID used for the data disk.                              |
| DataDisk.n.Category                     | String  | Data disk type.                                                  |
| DataDisk.n.Encrypted                    | Boolean | Whether the data disk is encrypted.                              |
| DataDisk.n.DiskName                     | String  | System disk name                                                 |
| DataDisk.n.Description                  | String  | System disk description.                                         |
| DataDisk.n.DeleteWithInstance           | String  | Whether the data disk is released with its instance.             |
| IoOptimized                             | String  | Whether this is an I/O optimized instance.                       |
| NetworkInterface.n.PrimaryIpAddress     | String  | Primary private IP address of the ENI.                           |
| NetworkInterface.n.VSwitchId            | String  | The ID of the ENI's VSwitch.                                     |
| NetworkInterface.n.SecurityGroupId      | String  | The security group ID, which must be in the same VPC as the ENI. |
| NetworkInterface.n.NetworkInterfaceName | String  | ENI name.                                                        |
| NetworkInterface.n.Description          | String  | ENI description.                                                 |
| Period                                  | Integer | Duration of purchased resource.                                  |

| Parameter                   | Type   | Description                                         |
|-----------------------------|--------|-----------------------------------------------------|
| InternetChargeType          | String | Public bandwidth billing method.                    |
| NetworkType                 | String | Network type.                                       |
| UserData                    | String | User data of the instance, which is Base64-encoded. |
| KeyPairName                 | String | Key pair name.                                      |
| RamRoleName                 | String | Instance's RAM role name.                           |
| AutoReleaseTime             | String | Automatic release time.                             |
| SpotStrategy                | String | Spot strategy for Pay-As-You-Go instances.          |
| SpotPriceLimit              | Float  | Sets the maximum hourly price for instances.        |
| SecurityEnhancementStrategy | String | Whether Security Reinforcement is enabled.          |
| Tag.n.Key                   | String | Instance tag key.                                   |
| Tag.n.Value                 | Float  | Instance tag value.                                 |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeLaunchTemplateVersions
&Regionid = cn-Hangzhou
&LaunchTemplateName=lt-name1
&<Common request parameters>
```

### Response example

#### XML format

```
<DescribeLaunchTemplateVersionsResponse>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FExxxxx</RequestId>
  <TotalCount>1</TotalCount>
  <PageNumber>1</PageNumber>
  <PageSize>10</PageSize>
  <LaunchTemplateVersionSets>
    <LaunchTemplateVersionSet>
      <CreateTime>2018-05-14T14:18:00Z</CreateTime>
      <ModifiedTime>2018-05-14T14:18:00Z</ModifiedTime>
      <LaunchTemplateId>lt-m5e3ofjr1zn1aw7xxxx</LaunchTemplateId>
      <LaunchTemplateName>wd-1526307480xxx</LaunchTemplateName>
      <DefaultVersion>true</DefaultVersion>
      <VersionNumber>1</VersionNumber>
      <CreatedBy>1942111349714xxx</CreatedBy>
```

```

<VersionDescription>www</VersionDescription>
<launchtemplatedata>
  <imageowneralias>ImageOwnerAlias1</imageowneralias>
  <description>Description1</description>
  <resourcegroupid>ResourceGroupId1</resourcegroupid>
  <datadisks>
    <datadisk>
      <snapshotid>SnapshotId1</snapshotid>
      <description>Description1</description>
      <category>cloud_efficiency</category>
      <encrypted>false</encrypted>
      <size>44</size>
      <deletewithinstance>true</deletewithinstance>
      <diskname>DataDiskName1</diskname>
    </datadisk>
  </datadisks>
  <userdata>UserData1</userdata>
  <systemdisk.diskname>SystemDiskDiskName1</systemdisk.diskname>
  <systemdisk.size>44</systemdisk.size>
  <ramrolename>RamRoleName1</ramrolename>
  <networktype>NetworkType1</networktype>
  <networkinterfaces>
    <networkinterface>
      <description>Description1</description>
      <securitygroupid>SecurityGroupId1</securitygroupid>
      <vswitchid>VSwitchId1</vswitchid>
      <networkinterfacename>NetworkInterfaceName1</networkint
erfacename>
      <primaryipaddress>PrimaryIpAddress1</primaryipaddress>
    </networkinterface>
  </networkinterfaces>
  <imageid>windows2008.vhd</imageid>
  <spotpricelimit>1</spotpricelimit>
  <systemdisk.category>cloud_efficiency</systemdisk.category>
  <instancetype>ecs.xn4.small</instancetype>
  <spotstrategy>SpotWithPriceLimit</spotstrategy>
  <hostname>HostName1</hostname>
  <tags>
    <instancetag>
      <value>bb</value>
      <key>ss</key>
    </instancetag>
  </tags>
  <keypairname>KeyPairName1</keypairname>
  <systemdisk.iops>22</systemdisk.iops>
  <iooptimized>true</iooptimized>
  <zoneid>ZoneId1</zoneid>
  <systemdisk.description>SystemDiskDescription1</systemdisk.
description>
  <securitygroupid>sg-tiantt1234</securitygroupid>
  <vswitchid>vsw-xxxxxx</vswitchid>
  <period>1</period>
  <internetchargetype>PayByBandwidth</internetchargetype>
  <instancename>InstanceName1</instancename>
  <internetmaxbandwidthout>20</internetmaxbandwidthout>
  <internetmaxbandwidthin>1</internetmaxbandwidthin>
  <securityenhancementstrategy>Active</securityenhancementstrategy>
>
  <autoreleasetime>2019-10-21T00:00:00Z</autoreleasetime>
</launchtemplatedata>
</LaunchTemplateVersionSet>
</LaunchTemplateVersionSets>

```



```
</DescribeLaunchTemplateVersionsResponse>
```

### JSON format

```
{
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FExxxxx",
  "TotalCount": 1,
  "PageNumber": 1,
  "PageSize": 10,
  "LaunchTemplateVersionSets": {
    "LaunchTemplateVersionSet": [{
      {
        "LaunchTemplateData": {
          "Description": "Description1",
          "ResourceGroupId": "ResourceGroupId1",
          "DataDisks": {
            "DataDisk": [
              {
                "SnapshotId": "SnapshotId1",
                "Description": "Description1",
                "Category": "cloud_efficiency",
                "Encrypted": false,
                "Size": 44,
                "DeleteWithInstance": true,
                "DiskName": "DataDiskName1"
              }
            ]
          },
          "UserData": "UserData1",
          "SystemDisk.DiskName": "SystemDiskDiskName1",
          "SystemDisk.Size": 44,
          "RamRoleName": "RamRoleName1",
          "NetworkType": "NetworkType1",
          "NetworkInterfaces": {
            "NetworkInterface": [
              {
                "Description": "Description1",
                "SecurityGroupId": "SecurityGroupId1",
                "VSwitchId": "VSwitchId1",
                "NetworkInterfaceName": "NetworkInterfaceName1",
                "PrimaryIpAddress": "PrimaryIpAddress1"
              }
            ]
          },
          "ImageId": "windows2008.vhd",
          "SpotPriceLimit": 1,
          "SystemDisk.Category": "cloud_efficiency",
          "InstanceType": "ecs.xn4.small",
          "SpotStrategy": "SpotWithPriceLimit",
          "HostName": "HostName1",
          "Tags": {
            "InstanceTag": [
              {
                "Value": "bb",
                "Key": "ss"
              }
            ]
          },
          "KeyPairName": "KeyPairName1",
          "SystemDisk.Iops": 22,
          "IoOptimized": "true",
```

```

    "ZoneId": "ZoneId1",
    "SystemDisk.Description": "SystemDiskDescription1",
    "SecurityGroupId": "sg-tiantt1234",
    "VSwitchId": "vsw-xxxxxx",
    "Period": 1,
    "InternetChargeType": "PayByBandwidth",
    "InstanceName": "InstanceName1",
    "InternetMaxBandwidthOut": 20,
    "InternetMaxBandwidthIn": 1,
    "SecurityEnhancementStrategy": "Active",
    "AutoReleaseTime": "2019-10-21T00:00:00Z"
  },
  "LaunchTemplateName": "wd-1526308145065",
  "CreatedBy": "1942111349714263",
  "VersionDescription": "wwwdesc",
  "ModifiedTime": "2018-05-14T14:29:05Z",
  "CreateTime": "2018-05-14T14:29:05Z",
  "DefaultVersion": true,
  "LaunchTemplateId": "lt-m5efs0xpur7pey3y9yt7",
  "VersionNumber": 1
}
}
}
}

```

## Error codes

The following error codes are specific to this interface. For more error codes, see [API error center](#).

| Error code                     | Error message                                                                            | HTTP status code | Meaning                                                            |
|--------------------------------|------------------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------|
| InvalidLaunchTemplate.NotFound | The specified LaunchTemplateId "{0}" LaunchTemplateName "{1}" is not found.              | 400              | The specified LaunchTemplateId or LaunchTemplateName is not found. |
| MissingParameter               | The input parameter "{0}" that is mandatory for processing this Request is not supplied. | 400              | A required parameter is missing.                                   |
| InvalidParameter               | the parameter(s) "{0}" provided is(are) invalid.                                         | 400              | The specified parameter is invalid.                                |
| Innerservicefailed             | Call inner service failed                                                                | 403              | Internal server error.                                             |

## 6.7 ModifyLaunchTemplateDefaultVersion

Sets a specified version of this template as the default version. If you do not specify a template version number when creating an instance ([RunInstances](#)), default version is used.

### Request parameters

| Name                 | Type   | Required | Description                                                                                                                 |
|----------------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------|
| Action               | String | Yes      | The name of this interface. Value : ModifyLaunchTemplateDefaultVersion.                                                     |
| RegionId             | String | Yes      | Region ID of the template. To view the latest list of Alibaba Cloud regions, call <a href="#">DescribeRegions</a> .         |
| DefaultVersionNumber | Long   | Yes      | Sets the default version number for the instance launch template.                                                           |
| LaunchTemplateId     | String | No       | Instance launch template ID. Either the LaunchTemplateId or LaunchTemplateName must be specified to determine the template. |
| LaunchTemplateName   | String | No       | Instance launch template name. You must specify the LaunchTemplateId or LaunchTemplateName to determine the template.       |

### Response parameters

All are common response parameters. See [Common parameters](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=ModifyLaunchTemplateDefaultVersion
&RegionId=cn-hangzhou
&LaunchTemplateName=lt-name1
&DefaultVersionNumber=2
&<Common Request Parameters>
```

### Response example

#### XML format

```
<ModifyLaunchTemplateDefaultVersionResponse>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FExxxxx</RequestId>
</ModifyLaunchTemplateDefaultVersionResponse>
```

#### JSON format

```
{
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FExxxxx",
}
```

## Error codes

The following error codes are specific to this interface. For more error codes, visit the [API error center](#).

| Error code                            | Error message                                                                            | HTTP status code | Description                                                          |
|---------------------------------------|------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------|
| InvalidLaunchTemplate.NotFound        | The specified LaunchTemplateId "{0}" LaunchTemplateName "{1}" is not found.              | 400              | The specified LaunchTemplateId or LaunchTemplateName does not exist. |
| InvalidLaunchTemplateVersion.NotFound | The specified LaunchTemplateId "{0}" Version "{1}" is not found.                         | 400              | The specified DefaultVersionNumber does not exist.                   |
| MissingParameter                      | The input parameter "{0}" that is mandatory for processing this request is not supplied. | 400              | A required parameter is missing.                                     |
| InvalidParameter                      | the parameter(s) "{0}" provided is(are) invalid.                                         | 400              | The specified parameter is invalid.                                  |

| Error code         | Error message             | HTTP status code | Description            |
|--------------------|---------------------------|------------------|------------------------|
| InnerServiceFailed | call inner service failed | 403              | Internal server error. |

## 7 Disks

### 7.1 CreateDisk

Creates a portable data disk. The disk category contains basic cloud disk, efficiency cloud disk, and cloud SSD disk.

#### Description

- Creating a disk involves resource billing. Know the billing methods of ECS in advance. For more information, see [Pay-As-You-Go](#) (PostPaid).
- The `DeleteAutoSnapshot` attribute of the created disk is `true`, and automatic snapshots are deleted by default when you delete the data disk. You can use [ModifyDiskAttribute](#) to modify this attribute.
- By default, the `Portable` attribute of the created data disk is `true`, and the billing method is Pay-As-You-Go.
- You must specify either the request parameter `Size` or `SnapshotId`. The `Size` specifies the volume capacity of the data disk, and the `SnapshotId` specifies a snapshot to create the data disk.

#### Request Parameters

| Name        | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------|--------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action      | String | Yes      | The name of this interface. Value: CreateDisk.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| RegionId    | String | Yes      | The ID of the region to which an instance belongs. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                                                                                                                                                                                                   |
| ZoneId      | String | Yes      | ID of the zone.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| DiskName    | String | No       | Indicates the disk name. <ul style="list-style-type: none"><li>• The disk name can be 2 to 128 characters in length. It must begin with an uppercase or lowercase English letter, or Chinese character . It can contain digits, periods (.), colons (:), underscores (_), and hyphens (-).</li><li>• The disk name is displayed in the console.</li><li>• It cannot begin with <code>http://</code> or <code>https://</code>.</li><li>• By default, the value of the disk name is null.</li></ul> |
| Description | String | No       | Indicates the disk description.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Name         | Type    | Required | Description                                                                                                                                                                                                                                                                                |
|--------------|---------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |         |          | <ul style="list-style-type: none"> <li>It can be 2 to 256 characters in length.</li> <li>The disk description is displayed in the console.</li> <li>It cannot begin with http:// or https://.</li> <li>By default, the value of the disk description is null.</li> </ul>                   |
| Encrypted    | Boolean | No       | Whether the disk is encrypted or not. Optional values: <ul style="list-style-type: none"> <li>true</li> <li>false</li> </ul> By default, the value of the encryption is false.                                                                                                             |
| DiskCategory | String  | No       | Indicates the category of the data disk. Optional values: <ul style="list-style-type: none"> <li>cloud: Basic cloud disk.</li> <li>cloud_efficiency: Efficiency cloud disk.</li> <li>cloud_ssd: Cloud SSD.</li> </ul> By default, the value is cloud.                                      |
| Size         | Integer | No       | Indicates the size of the system disk (GiB). The value must be equal to or greater than the size of the specific SnapshotId. Optional values: <ul style="list-style-type: none"> <li>cloud: [5, 2000].</li> <li>cloud_efficiency: [20, 32768].</li> <li>cloud_ssd: [20, 32768].</li> </ul> |
| SnapshotId   | String  | No       | Indicates the snapshot ID. Snapshots are used to create the data disk. After this parameter is specified, Size is ignored. The actual size of the created disk is the size of the specified snapshot. Snapshots generated on or before July 15, 2013 cannot be used to create a disk.      |
| Tag.n.Key    | String  | Yes      | The key of a tag of which n is from 1 to 20. Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                                                                            |
| Tag.n.Value  | String  | Yes      | The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It                                                                                                                                 |

| Name        | Type   | Required | Description                                                                                                                                                                                                                                                          |
|-------------|--------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             |        |          | cannot begin with "aliyun", "acs:", "http://", or "https://".                                                                                                                                                                                                        |
| ClientToken | String | No       | Guarantees the idempotence of the request. The value is generated by a client and must be globally unique. Only ASCII characters are allowed. It can contain a maximum of 64 ASCII characters. For more information, see <a href="#">How to ensure idempotence</a> . |

### Response parameters

| Name   | Type   | Description    |
|--------|--------|----------------|
| DiskId | String | ID of the disk |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=CreateDisk
&RegionId=cn-qingdao
&ZoneId=cn-qingdao-b
&Size=200
&DiskName=ThisIsDiskName
&Description=ThisIsDescription
&<Common Request Parameters>
```

#### Response example

#### XML format

```
<CreateDiskResponse>
  <RequestId>473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E</RequestId>
  <DiskId>d-bp131n0q38u3a4ziXXXXX</DiskId>
</CreateDiskResponse>
```

#### JSON format

```
"RequestId": "473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E",
"DiskId": "d-bp131n0q38u3a4ziXXXXX"
```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).



| Error code                               | Error message                                                 | HTTP status code | Meaning                                                                                 |
|------------------------------------------|---------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------|
| Account.Arrearage                        | Your account has an outstanding payment.                      | 400              | Your account balance is insufficient. Update your account status and try again.         |
| InvalidDescription.Malformed             | The specified description is wrongly formed.                  | 400              | The specified DescriptionName format is invalid.                                        |
| InvalidDiskCategory.NotSupported         | The specified disk category is not support.                   | 400              | The specified disk category is not supported.                                           |
| InvalidDiskCategory.ValueNotSupported    | The specified parameter DiskCategory is not valid.            | 400              | The specified DiskCategory is invalid.                                                  |
| InvalidDiskName.Malformed                | The specified disk name is wrongly formed.                    | 400              | The specified DiskName format is invalid.                                               |
| EncryptedOption.Conflict                 | Encryption value of disk conflicts with that of snapshot.     | 400              | The encryption value of disk and snapshot must be the same.                             |
| InvalidParameter.Encrypted.KmsNotEnabled | The encrypted disk need enable KMS.                           | 400              | No KMS service is available in your account, please enable the KMS service by yourself. |
| InvalidParameter.EncryptedIllegal        | The value of parameter encrypted is illegal.                  | 400              | The specified parameter Encrypted is invalid.                                           |
| InvalidParameter.EncryptedNotSupported   | Encrypted disk is not support in this region.                 | 400              | The specified region does not support encryption.                                       |
| InvalidParameter.EncryptedNotSupported   | Corresponding data disk category does not support encryption. | 400              | The corresponding disk category does not support encryption.                            |

| Error code                                          | Error message                                                                 | HTTP status code | Meaning                                                                        |
|-----------------------------------------------------|-------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------|
| InvalidSize.<br>ValueNotSupported                   | The specified parameter Size is not valid.                                    | 400              | The specified Size is not invalid.                                             |
| MissingParameter                                    | The input parameter either SnapshotId or Size should be specified.            | 400              | The SnapshotId or Size parameter is not specified.                             |
| InstanceDiskCategoryLimitExceed                     | The total size of specified disk category in an instance exceeds.             | 403              | The specified disk category exceeds the maximum capacity of a single instance. |
| InvalidAccountStatus.<br>NotEnoughBalance           | Your account does not have enough balance.                                    | 403              | The account balance is insufficient.                                           |
| InvalidAccountStatus.<br>SnapshotServiceUnavailable | Snapshot service has not been opened yet.                                     | 403              | The Snapshot service is not activated.                                         |
| InvalidDataDiskCategory.<br>NotSupported            | Specified disk category is not supported.                                     | 403              | The specified disk category is not supported.                                  |
| InvalidDataDiskCategory.<br>NotSupported            | diskCategory is CLOUD_SSD, but the supported DiskCategory is [io1, io4, io3]. | 403              | The specified disk category is not supported.                                  |
| InvalidDiskCategory.<br>ValueUnauthorized           | The disk category is not authorized.                                          | 403              | The specified disk category is unauthorized.                                   |
| InvalidDiskSize.<br>NotSupported                    | disk size is not supported.                                                   | 403              | The specified disk size is not supported.                                      |
| InvalidDiskSize.<br>TooSmall                        | Specified disk size is less than the size of snapshot.                        | 403              | The size of the specified disk is smaller than the specified snapshot.         |

| Error code                      | Error message                                                                            | HTTP status code | Meaning                                                                                        |
|---------------------------------|------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------|
| InvalidSnapshot.<br>NotReady    | The specified snapshot creation is not completed yet.                                    | 403              | The specified snapshot is not yet complete.                                                    |
| InvalidSnapshot.<br>TooLarge    | The capacity of snapshot emissions 2000 GB.                                              | 403              | The size of the specified snapshot exceeds the maximum value of the disk type.                 |
| InvalidSnapshot.<br>TooOld      | This operation is forbidden because the specified snapshot is created before 2013-07-15. | 403              | The specified snapshot was created on or before July 15 , 2013, so the disk cannot be created. |
| InvalidSnapshotId<br>.NotReady  | The specified snapshot has not completed yet.                                            | 403              | The specified snapshot is not yet complete.                                                    |
| OperationDenied                 | The specified snapshot is not allowed to create disk.                                    | 403              | The specified snapshot is not permitted to create a disk.                                      |
| OperationDenied                 | The type of the disk does not support the operation.                                     | 403              | The specified disk type does not support this operation.                                       |
| QuotaExceeded.PortableCloudDisk | The quota of portable cloud disk exceeds.                                                | 403              | The portable general cloud disk quota has exceeded.                                            |
| InvalidRegionId.<br>NotFound    | The specified RegionId does not exist .                                                  | 404              | The specified RegionId does not exist.                                                         |
| InvalidRegionId.<br>NotFound    | The specified RegionId does not exist .                                                  | 404              | The specified RegionId does not exist.                                                         |
| InvalidSnapshotId<br>.NotFound  | The specified SnapshotId does not exist.                                                 | 404              | The specified SnapshotId does not exist.                                                       |
| InvalidZoneId.<br>NotFound      | The specified zone does not exist.                                                       | 404              | The specified ZoneId does not exist.                                                           |

## 7.2 DescribeDisks

Queries your available cloud disks.

### Description

- You can specify request parameters to separate the possible response results. Request parameters, such as `RegionId`, `ZoneId`, `DiskIds`, and `InstanceId` act as a filter, and parameters are passed in the logical relation of AND (AND).
- The value of parameter `DiskIds` is a JSON array in the format of `["DiskId1", "DiskId2", "DiskId3", ...]`, you can specify at most 100 `DiskId` each time. If `DiskIds` is not passed (that is, `[]`), all your cloud disks are queried.

### Request parameters

| Name       | Type    | Required | Description                                                                                                                                                                                                                                                      |
|------------|---------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action     | String  | Yes      | The name of this interface. Value: DescribeDisks.                                                                                                                                                                                                                |
| RegionId   | String  | Yes      | The Region ID of the disk. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                          |
| Encrypted  | Boolean | No       | Filter an encrypted disk. Optional values: <ul style="list-style-type: none"><li>true: Only query encrypted disks.</li><li>false: Have no restriction on the encryption attribute.</li></ul> Default value: false.                                               |
| ZoneId     | String  | No       | The default value is null, which indicates a query of disks in all zones.                                                                                                                                                                                        |
| DiskIds    | String  | No       | ID of the disk. ID of the disk. A formatted JSON Array: <code>["d-xxxxxxx", "d-yyyyyyyy", ... "d-zzzzzzzz"]</code> . A maximum of 10 IDs separated by single-byte commas.                                                                                        |
| InstanceId | String  | No       | ID of an instance.                                                                                                                                                                                                                                               |
| DiskType   | String  | No       | The type of disk. Optional values: <ul style="list-style-type: none"><li>all: Queries the system disk and data disks at the same time.</li><li>system: Queries the system disk only.</li><li>data: Queries the data disk only.</li></ul> The default value: all. |
| Category   | String  | No       | The disk category. Optional values:                                                                                                                                                                                                                              |

| Name       | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |        |          | <ul style="list-style-type: none"> <li>all: All kinds of disks.</li> <li>cloud: Basic cloud disk.</li> <li>cloud_efficiency: Ultra cloud disk.</li> <li>cloud_ssd: Cloud SSD.</li> <li>ephemeral: Ephemeral disk.</li> <li>local_hdd_pro: Local SATA HDD.</li> <li>local_ssd_pro: Local NVMe SSD.</li> <li>ephemeral_ssd: Ephemeral SSD.</li> </ul> <p>Default value: all.</p>                                                                                                                                                                                                                                        |
| Status     | String | No       | <p>Disk status. See <a href="#">Basic Cloud Disk Status</a> for more information. Optional values:</p> <ul style="list-style-type: none"> <li>In_use</li> <li>Available</li> <li>Attaching</li> <li>Detaching</li> <li>Creating</li> <li>Relniting</li> <li>All</li> </ul> <p>The default value: All.</p>                                                                                                                                                                                                                                                                                                             |
| SnapshotId | String | No       | The snapshot used to create the disk.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| DiskName   | String | No       | The name of queried disk.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Portable   | String | No       | <p>Whether or not the disk can be detached. Optional values:</p> <ul style="list-style-type: none"> <li>True: Disks can be freely attached and detached in a zone.</li> <li>False: Disks are created and deleted along with instances.</li> </ul> <p>If you attach or detach the specified disk, query disks with a property value of true. However, disk categories as follows have Portable=False by default.</p> <ul style="list-style-type: none"> <li>Local disks. For ephemeral disks,</li> <li>Ephemeral SSD.</li> <li>System disk that use basic cloud disk, cloud efficiency disk, and cloud SSD.</li> </ul> |

| Name                | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                             |
|---------------------|---------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     |         |          | <ul style="list-style-type: none"> <li>Subscribed disk that use basic cloud disk, cloud efficiency disk, and cloud SSD.</li> </ul> <p>false indicates you cannot attach or detach the preceding disks independently.</p>                                                                                                                                |
| DeleteWith Instance | String  | No       | <p>Whether or not the disk is released along with the instance. Optional values:</p> <ul style="list-style-type: none"> <li>true: When the instance is released, this disk is released with it.</li> <li>false: When the instance is released, this disk is retained.</li> </ul> <p>Default value: false.</p>                                           |
| DeleteAuto Snapshot | String  | No       | <p>Whether or not auto snapshots are deleted when the disk is deleted. Optional values:</p> <ul style="list-style-type: none"> <li>true: The auto snapshots are deleted with the disk.</li> <li>false: The auto snapshots are retained.</li> </ul> <p>Default value: false.</p>                                                                         |
| EnableAuto Snapshot | String  | No       | <p>Whether the queried cloud disks have been applied automatic snapshot policies. Optional values:</p> <ul style="list-style-type: none"> <li>true: The queried cloud disks have been applied automatic snapshot policies.</li> <li>false: The queried cloud disks have no automatic snapshot policies applied.</li> </ul> <p>Default value: false.</p> |
| Tag.n.Key           | String  | Yes      | <p>The key of a tag of which n is from 1 to 20. Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".</p>                                                                                                                                  |
| Tag.n.Value         | String  | Yes      | <p>The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".</p>                                                                                                                         |
| PageNumber          | Integer | No       | <p>The current page of the disk status list. The start value: 1.</p> <p>Default value: 1.</p>                                                                                                                                                                                                                                                           |

| Name     | Type    | Required | Description                                                                                         |
|----------|---------|----------|-----------------------------------------------------------------------------------------------------|
| PageSize | Integer | No       | The number of lines per page set for paging query.<br>The maximum value: 100.<br>Default value: 10. |

### Response parameters

| Name       | Type                         | Description                                                      |
|------------|------------------------------|------------------------------------------------------------------|
| Encrypted  | Boolean                      | Whether it is an encrypted disk.                                 |
| TotalCount | Integer                      | The total number of instances.                                   |
| PageNumber | Integer                      | The page number of the instance list.                            |
| PageSize   | Integer                      | The number of lines per page set during input.                   |
| Disks      | <a href="#">DiskItemType</a> | A collection composed of disk information, such as DiskItemType. |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?action=DescribeDisks
&RegionId=cn-qingdao
&PageNumber=1
&ZoneId=cn-qingdao-b
&<Common Request Parameters>
```

#### Response example

#### XML format

```
<DescribeDisksResponse>
  <Disks>
    <Disk>
      <DeleteAutoSnapshot>true</DeleteAutoSnapshot>
      <DeleteWithInstance>>false</DeleteWithInstance>
      <EnableAutoSnapshot>>false</EnableAutoSnapshot>
      <Category>cloud</Category>
      <Description></Description>
      <DiskName></DiskName>
      <Size>5</Size>
      <Type>data</Type>
      <InstanceId></InstanceId>
      <CreationTime>2014-07-23T02:44:07Z</CreationTime>
      <ImageId></ImageId>
      <ZoneId>cn-qingdao-b</ZoneId>
      <AttachedTime>2014-07-23T07:47:35Z</AttachedTime>
      <DetachedTime>2014-07-23T08:28:48Z</DetachedTime>
      <Device></Device>
      <OperationLocks></OperationLocks>
      <Portable>true</Portable>
      <ProductCode></ProductCode>
```

```

        <RegionId>cn-qingdao</RegionId>
        <DiskId>d-28m5zbua0</DiskId>
        <SourceSnapshotId></SourceSnapshotId>
        <Status>Available</Status>
    </Disk>
    <Disk>
        <DeleteAutoSnapshot>true</DeleteAutoSnapshot>
        <DeleteWithInstance>>false</DeleteWithInstance>
        <EnableAutoSnapshot>>false</EnableAutoSnapshot>
        <Category>cloud</Category>
        <Description></Description>
        <DiskName></DiskName>
        <Size>5</Size>
        <Type>data</Type>
        <InstanceId></InstanceId>
        <CreationTime>2014-07-23T02:44:06Z</CreationTime>
        <ImageId></ImageId>
        <ZoneId>cn-qingdao-b</ZoneId>
        <AttachedTime></AttachedTime>
        <DetachedTime></DetachedTime>
        <Device></Device>
        <OperationLocks></OperationLocks>
        <Portable>true</Portable>
        <ProductCode></ProductCode>
        <RegionId>cn-qingdao</RegionId>
        <DiskId>d-28zfrmo13</DiskId>
        <SourceSnapshotId></SourceSnapshotId>
        <Status>Available</Status>
    </Disk>
</Disks>
<PageNumber>1</PageNumber>
<PageSize>2</PageSize>
<TotalCount>9</TotalCount>
<RequestId>ED5CF6DD-71CA-462C-9C94-A61A78A01479</RequestId>
</DescribeDisksResponse>

```

### JSON format

```

{
  "Disks": {
    "Disk": [
      {
        "AttachedTime": "2014-07-23T07:47:35Z",
        "Category": "cloud",
        "CreationTime": "2014-07-23T02:44:07Z",
        "DeleteAutoSnapshot": true,
        "DeleteWithInstance": false,
        "EnableAutoSnapshot": false,
        "Description": "",
        "DetachedTime": "2014-07-23T08:28:48Z",
        "Device": "",
        "DiskId": "d-28m5zbua0",
        "DiskName": "",
        "ImageId": "",
        "InstanceId": "",
        "OperationLocks": {
          "OperationLock": []
        },
        "Portable": true,
        "ProductCode": "",
        "RegionId": "cn-qingdao",

```



```

        "Size": 5,
        "SourceSnapshotId": "",
        "Status": "Available",
        "Type": "data",
        "ZoneId": "cn-qingdao-b"
    },
    {
        "AttachedTime": "",
        "Category": "cloud",
        "CreationTime": "2014-07-23T02:44:06Z",
        "DeleteAutoSnapshot": true,
        "DeleteWithInstance": false,
        "EnableAutoSnapshot": false
        "Description": "",
        "DetachedTime": "",
        "Device": "",
        "DiskId": "d-28zfrmo13",
        "DiskName": "",
        "ImageId": "",
        "InstanceId": "",
        "OperationLocks": {
            "OperationLock": []
        },
        "Portable": true,
        "ProductCode": "",
        "RegionId": "cn-qingdao",
        "Size": 5,
        "SourceSnapshotId": "",
        "Status": "Available",
        "Type": "data",
        "ZoneId": "cn-qingdao-b"
    }
]
},
"PageNumber": 1,
"PageSize": 2,
"RequestId": "ACD9BBB0-A9D1-46D7-9630-B7A69889E110",
"TotalCount": 9
}

```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                            | Error message                                 | HTTP status code | Description                                                                                               |
|---------------------------------------|-----------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------|
| InvalidCategory<br>.ValueNotSupported | The specified disk category is not supported. | 400              | The specified Category is not supported. Otherwise, you are not authorized to use the specified DiskType. |

| Error code                             | Error message                                          | HTTP status code | Description                                                |
|----------------------------------------|--------------------------------------------------------|------------------|------------------------------------------------------------|
| InvalidDiskType.<br>.ValueNotSupported | The specified disk type is not supported.              | 400              | The specified DiskType is not supported.                   |
| InvalidRegion.<br>NotFound             | The specified parameter RegionId is not valid.         | 400              | The specified RegionId does not exist.                     |
| InvalidStatus.<br>.ValueNotSupported   | The specified disk status is not supported.            | 400              | The specified Status is not supported.                     |
| InvalidTag.<br>Mismatch                | The specified Tag.n.Key and Tag.n.Value are not match. | 400              | The specified Tag .n.Key and Tag .n.Value must be matched. |
| InvalidTagCount                        | The specified tags are beyond the permitted range.     | 400              | A maximum of 5 Tag.n.Key can be specified.                 |
| InvalidZoneId.<br>NotFound             | The ZoneId provided does not exist.                    | 400              | The specified ZoneId does not exist.                       |
| InvalidDiskIds.<br>Malformed           | The amount of specified disk Ids exceeds the limit.    | 403              | The maximum number of DiskId is exceeded.                  |
| InvalidDiskChargeType.<br>NotFound     | The DiskChargeType does not exist.                     | 404              | The specified DiskChargeType does not exist.               |
| InvalidLockReason.<br>NotFound         | The specified LockReason is not found.                 | 404              | The specified LockReason does not exist.                   |

## 7.3 AttachDisk

Attaches a data disk to an instance.

### Description

When you call this interface, consider the following:

- The target instance must be in the **Running** (Running) or **Stopped** (Stopped).
- The target cloud disk must be in the **Available** (Available) status.
- The OperationLocks of the *locked* instance cannot be "LockReason" : "security".

- Even if you set the `DeleteWithInstance` to `false` when attaching the cloud disk, once the instance is locked and the `OperationLocks` of the instance indicates `"LockReason": "security"`, when you release the instance, the `DeleteWithInstance` attribute of the cloud disk is ignored and the disk is released along with the instance.

### Request parameters

| Name               | Type    | Required | Description                                                                                                                                |
|--------------------|---------|----------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Action             | String  | Yes      | The name of this interface. Value: <code>AttachDisk</code> .                                                                               |
| InstanceId         | String  | Yes      | The ID of the target instance.                                                                                                             |
| DiskId             | String  | Yes      | Indicates the cloud disk ID. The cloud disk ( <code>DiskId</code> ) and instance ( <code>InstanceId</code> ) must be in the same zone.     |
| DeleteWithInstance | Boolean | No       | When the instance is released, whether the cloud disk is released along with the instance or retained. Default value: <code>False</code> . |

### Response parameters

All are common response parameters. See [Common response parameters](#).

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=AttachDisk
&InstanceId=i-23jggx34b
&DiskId=d-23jbf2v5m
&<Common Request Parameters>
```

#### Response example

#### XML format

```
<AttachDiskResponse>
  <RequestId>473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E</RequestId>
</AttachDiskResponse>
```

#### JSON format

```
{
  "RequestId": "473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E"
}
```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                 | Error message                                                                                                     | HTTP status code | Meaning                                                                                         |
|----------------------------|-------------------------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------|
| IncorrectInstanceStatus    | The current status of the resource does not support this operation.                                               | 400              | The target instance must be in the <b>Running</b> (Running) or <b>Stopped</b> (Stopped) status. |
| InvalidParameter           | The input parameter is mandatory for processing this request is empty.                                            | 400              | The specified DeleteWithInstance is invalid.                                                    |
| DiskError                  | IncorrectDiskStatus.                                                                                              | 403              | The target disk must be in the <b>Available</b> (Available) status.                             |
| DiskId.ValueNotSupported   | The specified parameter diskid is not supported.                                                                  | 403              | The specified DiskId is not supported.                                                          |
| DiskInArrears              | The specified operation is denied as your disk owing fee.                                                         | 403              | The specified instance has an outstanding payment.                                              |
| DiskNotPortable            | The specified disk is not a portable disk.                                                                        | 403              | The specified disk cannot be detached.                                                          |
| IncorrectDiskStatus        | The operation is not supported in this status.                                                                    | 403              | The target disk must be in the <b>Available</b> (Available) status.                             |
| InstanceExpiredOrInArrears | The specified operation is denied as your prepay instance is expired (prepay mode) or in arrears (afterpay mode). | 403              | The specified instance has an outstanding payment.                                              |
| InstanceLockedForSecurity  | The instance is locked due to security.                                                                           | 403              | The instance is locked for security reasons.                                                    |
| InvalidDeviceInUse         | The specified device has been occupied.                                                                           | 403              | The specified disk has already been attached to another instance.                               |
| ResourcesNotInSameZone     | The specified instance and disk are not in the same zone.                                                         | 403              | The specified disk and instance are not in the same zone.                                       |
| InvalidDiskId.NotFound     | The specified disk does not exist.                                                                                | 404              | The specified cloud disk does not exist.                                                        |

| Error code                 | Error message                            | HTTP status code | Meaning                                |
|----------------------------|------------------------------------------|------------------|----------------------------------------|
| InvalidInstanceId.NotFound | The specified InstanceId does not exist. | 404              | The specified instance does not exist. |

## 7.4 DetachDisk

Detaches a cloud disk from a specified instance. The disk category can be basic cloud disk, efficiency cloud disk, and cloud SSD disk.

### Description

When you call this interface, consider the following:

- The `Portable` attribute of the cloud disk must be `True`.
- The status of the specified cloud disk must be **In Use** (`In_Use`).
- The status of the specified instance must be **Running** (`Running`) or **Stopped** (`Stopped`).
- If the specified instance is *locked*, `OperationLocks` of the instance cannot be `"LockReason": "security"`.
- After a cloud disk is detached, the `DeleteWithInstance` attribute of the target cloud disk is automatically set to `false`.
- The actions are asynchronous tasks, you may wait for a few minutes before the action is completed, and the duration is about one minutes.

### Request parameters

| Name       | Type   | Required | Description                                                  |
|------------|--------|----------|--------------------------------------------------------------|
| Action     | String | Yes      | The name of this interface. Value: <code>DetachDisk</code> . |
| InstanceId | String | Yes      | The ID of the target ECS instance.                           |
| DiskId     | String | Yes      | The ID of the disk.                                          |

### Response parameters

All are common response parameters. For more information, see [common parameters](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DetachDisk
&InstanceId=i-23jggx34b
&DiskId=d-23jbf2v5m
&<Common Request Parameters>
```

### Response example

#### XML format

```
<DetachDiskResponse>
  <RequestId>473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E</RequestId>
</DetachDiskResponse>
```

#### JSON format

```
{
  "RequestId": "473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E"
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Code Center](#).

| Error code          | Error message                                                                                 | HTTP status code | Meaning                                                       |
|---------------------|-----------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------|
| MissingParameter    | The input parameter InstanceId that is mandatory for processing this request is not supplied. | 400              | You must specify a InstanceId.                                |
| DependencyViolation | The specified disk has not been attached on the specified instance.                           | 403              | The specified disk is not attached to the specified instance. |
| DiskNotPortable     | The specified disk is not a portable disk.                                                    | 403              | The specified disk cannot be detached.                        |
| DiskTypeViolation   | The specified disk is a system disk and cannot support the operation.                         | 403              | You cannot detach a system disk from your instance.           |

| Error code                 | Error message                                                       | HTTP status code | Meaning                                                                                            |
|----------------------------|---------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------|
| IncorrectDiskStatus        | The current disk status does not support this operation.            | 403              | The status of the specified cloud disk must be <b>In Use</b> (In_Use).                             |
| IncorrectInstanceStatus    | The current status of the resource does not support this operation. | 403              | The status of the specified instance must be <b>Running</b> (Running) or <b>Stopped</b> (Stopped). |
| InstanceLockedForSecurity  | The instance is locked due to security.                             | 403              | The specified instance is <i>locked</i> for the sake of security.                                  |
| InvalidDiskId.Released     | The specified disk has been released.                               | 403              | The specified disk has been released.                                                              |
| InvalidDiskId.NotFound     | The specified DiskId does not exist.                                | 404              | The specified disk does not exist.                                                                 |
| InvalidInstanceId.NotFound | The specified InstanceId does not exist.                            | 404              | The specified disk does not exist.                                                                 |

## 7.5 ModifyDiskChargeType

Modifies the billing method for up to 16 disks that are attached to an instance.

### Description

When calling this operation, consider the following:

- Changing the billing method from Subscription to Pay-As-You-Go is suitable for subscribed disks that are attached to a subscribed instance.
- Changing the billing method from Pay-As-You-Go to Subscription is suitable for Pay-As-You-Go data disks that are attached to a subscribed or Pay-As-You-Go instance.
- This instance cannot be suspended and have overdue payment.
- Billing method that was successfully modified cannot be changed again within 5 minutes.
- By default, the system uses the latest billing method to automatically charge fees. Make sure that your account balance is sufficient. If your account has insufficient funds, the system regards your order as an exception, and you have to cancel this order. If your account balance

is insufficient, set `AutoPay` to `false`. The system then generates a normal unpaid order for the outstanding payment. You can log on to the [ECS console](#) to pay for this order.

### Request parameters

| Name           | Type   | Required | Description                                                                                                                                                                                                                                             |
|----------------|--------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action         | String | Yes      | The operation that you want to perform.<br>Value: <code>ModifyDiskChargeType</code> .                                                                                                                                                                   |
| DiskIds        | String | Yes      | The list of disk identifiers. This is a JSON formatted array <code>["d-xxxxxxxx", "d-yyyyyyyy", ... "d-zzzzzzzz"]</code> , including up to 16 identifiers. These identifiers are separated with commas (,).                                             |
| InstanceId     | String | Yes      | The identifier of an instance that disks are attached to.                                                                                                                                                                                               |
| RegionId       | String | Yes      | The region identifier of an instance.<br>You can call <a href="#">DescribeRegions</a> to view the list of latest regions of Alibaba Cloud.                                                                                                              |
| DiskChargeType | String | No       | The billing method for disks. Optional values: <ul style="list-style-type: none"><li>PrePaid: Changes the billing method from Pay-As-You-Go to Subscription.</li><li>PostPaid: Changes the billing method from Subscription to Pay-As-You-Go.</li></ul> |



| Name    | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------|---------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |         |          | Default value:<br>PrePaid.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| DryRun  | Boolean | No       | Whether the system performs a dry run only. When DryRun is <code>true</code> , the system performs a dry run only, but does not change the actual billing method.<br>Optional values: <ul style="list-style-type: none"><li><code>true</code></li><li><code>false</code></li></ul> Default value: <code>false</code> .                                                                                                                                                                                                                 |
| AutoPay | Boolean | No       | Whether automatic payment is enabled.<br>Optional values: <ul style="list-style-type: none"><li><code>true</code>: Automatic payment is enabled . Make sure that you maintain a sufficient balance in the linked credit card or PayPal account to complete the payment. Otherwise, ECS regards your order as an exception, and you have to cancel this order.</li><li><code>false</code>: Generates the order, but does not charge fees. If your PayPal balance is insufficient or the linked credit card reaches the credit</li></ul> |

| Name        | Type   | Required | Description                                                                                                                                                                                                              |
|-------------|--------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             |        |          | limit, the system generates a normal unpaid order for the outstanding payment. You can log on to the ECS console to complete the payment.<br><br>Default value: true.                                                    |
| ClientToken | String | No       | Guarantees the idempotence of the request. The value is generated by a client and must be unique. It can contain a maximum of 64 ASCII characters. For more information, see <a href="#">How to ensure idempotence</a> . |

### Response parameters

| Name    | Type | Description                     |
|---------|------|---------------------------------|
| OrderId | Long | The generated order identifier. |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=ModifyDiskChargeType
&RegionId=cn-hangzhou
&DiskIds=["d-xxxxx1","d-xxxxx2"]
&InstanceId=i-xxxxx1
&AutoPay=false
&ClientToken=xxxxxxxxxxxxxx
&<Common Request Parameters>
```

#### Response example

#### XML format

```
<ModifyDiskChargeType>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FE73368</RequestId>
```

```
<Order>1011111111111111</Order>
</ModifyDiskChargeType>
```

### JSON format

```
{
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FE73368",
  "Order": 1011111111111111,
}
```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                           | Error message                                                                                          | HTTP status code | Description                                                                       |
|--------------------------------------|--------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------|
| Account.Arrearage                    | Your account has an outstanding payment.                                                               | 400              | Your account has an outstanding payment.                                          |
| IdempotencieParamNotMatch            | Request uses a client token in a previous request but is not identical to that request.                | 400              | The parameters of the requests that use the same <b>ClientToken</b> do not match. |
| InvalidClientToken.ValueNotSupported | The ClientToken provided is invalid.                                                                   | 400              | The <b>ClientToken</b> value is invalid. It should be ASCII characters only.      |
| InvalidInstance.UnpaidOrder          | The specified instance has unpaid order.                                                               | 400              | The specified instance has an unpaid order.                                       |
| InvalidInstanceId.Released           | The specified instance has been released.                                                              | 400              | The specified instance has been released.                                         |
| OrderCreationFailed                  | Order creation failed , please check your params and try it again later.                               | 400              | Order creation has failed.                                                        |
| Throttling                           | You have made too many requests within a short time; your request is denied due to request throttling. | 400              | You've made too many attempts. Please try again later.                            |
| ChargeTypeViolation                  | The operation is not permitted due to charge type of the instance.                                     | 403              | The billing method of the specified instance does not support this operation.     |

| Error code                                | Error message                                                                      | HTTP status code | Description                                                                                                                                     |
|-------------------------------------------|------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| InvalidAccountStatus.<br>NotEnoughBalance | Your account does not have enough balance.                                         | 403              | The account balance is insufficient.                                                                                                            |
| InvalidPayMethod                          | The specified billing method is invalid.                                           | 403              | The specified billing method does not exist.                                                                                                    |
| InvalidUser.<br>PassRoleForbidden         | The RAM user does not have privilege to pass a role.                               | 403              | Your RAM user does not have the PassRole permission. Contact the owner of the primary account to <a href="#">grant</a> the PassRole permission. |
| InvalidDiskIds.<br>NotFound               | Some of the specified data disks do not exist.                                     | 404              | The disk identifier does not exist.                                                                                                             |
| InvalidDiskIds.<br>NotPortable            | The specified DiskId is not portable.                                              | 404              | The specified undetachable disk does not support changing the billing method.                                                                   |
| InvalidRegionId.<br>NotFound              | The RegionId provided does not exist.                                              | 404              | The specified <b>RegionId</b> does not exist.                                                                                                   |
| PaymentMethodNotFound                     | No billing method has been registered on the account.                              | 404              | You have not selected any billing method.                                                                                                       |
| InternalError                             | The request processing has failed due to some unknown error, exception or failure. | 500              | Internal error.                                                                                                                                 |

## 7.6 ModifyDiskAttribute

Modifies the attribute of a cloud disk.

### Description

In this interface, when the **DeleteWithInstance** (DeleteWithInstance=false) attribute is set to false, once the ECS instance on which the disk is attached is [locked](#) and the OperationLocks

of instance indicates "LockReason" : "security", the DeleteWithInstance attribute of disk is ignored and the disk is released along with the instance.

### Request parameters

| Name        | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                         |
|-------------|--------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action      | String | Yes      | The name of this interface. Value: ModifyDiskAttribute.                                                                                                                                                                                                                                                                                                                             |
| DiskId      | String | Yes      | ID of the target disk.                                                                                                                                                                                                                                                                                                                                                              |
| DiskName    | String | No       | The disk name. <ul style="list-style-type: none"><li>It can contain [2, 128] English letters and must begin with an uppercase or lowercase letter. Can contain digits, colons (:), periods (.), underscores ( _ ), and hyphens (-).</li><li>It cannot begin with http:// or https://.</li><li>If it is left empty, the original value is used. The default value is null.</li></ul> |
| Description | String | No       | The description of a disk. <ul style="list-style-type: none"><li>It can contain [2, 256] letters and must begin with an uppercase or lowercase letter. Can contain digits, colons (:), periods (.), underscores ( _ ), and hyphens (-).</li><li>Cannot begin with http:// or https://.</li><li>If it is left empty, the original value is</li></ul>                                 |

| Name               | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------|--------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |        |          | used. The default value is null.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| DeleteWithInstance | String | No       | <p>Whether the disk is released along with the instance or not. Optional values:</p> <ul style="list-style-type: none"> <li>• True: If the instance is released, this disk is also released.</li> <li>• False: If the instance is released, this disk is retained.</li> </ul> <p>Default value: None.</p> <p>In the following conditions, when you set <code>DeleteWithInstance</code> to false, an error is returned.</p> <ul style="list-style-type: none"> <li>• When the <code>Category</code> (category) attribute of disk is ephemeral (ephemeral).</li> <li>• When the <code>Category</code> (category) attribute of disk is cloud (cloud) and the <code>Portable</code> (Portable=false) attribute is false.</li> </ul> |
| DeleteAutoSnapshot | String | No       | Whether the automatic snapshots of a cloud disk are deleted or not when the disk is deleted. Optional values:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Name               | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                         |
|--------------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |        |          | <ul style="list-style-type: none"><li>• True: If the disk is released, its automatic snapshots are also released.</li><li>• False: If the disk is released, its automatic snapshots are retained.</li></ul> Default value: None.                                                                                                                    |
| EnableAutoSnapshot | String | No       | If you have created an automatic snapshot policy, you can decide whether an automatic snapshot policy is applied to the disk or not. Optional values: <ul style="list-style-type: none"><li>• True: The disk runs an automatic snapshot policy.</li><li>• False: The disk does not run an automatic snapshot policy.</li></ul> Default value: None. |

## Response parameters

All are common return parameters. For more information, see [Common parameters](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=ModifyDiskAttribute
&DiskId=d-23jbf2v5m
&DiskName=MyDiskName
&<Common Request Parameters>
```

### Response example

**XML format**

```
<ModifyDiskAttributeResponse>
  <RequestId>473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E</RequestId>
</ModifyDiskAttributeResponse>
```

**JSON format**

```
{
  "RequestId": "473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E"
}
```

**Error codes**

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                       | Error message                                  | HTTP status code | Meaning                                                                                                                                                                  |
|----------------------------------|------------------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| InvalidDiskName.<br>Malformed    | The specified disk name is wrongly formed.     | 400              | The format of the specified DiskName is incorrect.                                                                                                                       |
| NoAttributeToModify              | No attribute to be modified in this request.   | 400              | Duplicate requests.                                                                                                                                                      |
| DiskNotPortable                  | The specified disk is not a portable disk.     | 403              | When you set the <code>DeleteWithInstance=false</code> attribute, you cannot set the attribute <code>Portable</code> of the specified cloud disk to <code>false</code> . |
| IncorrectDiskStatus              | The operation is not supported in this status. | 403              | The status of the cloud disk is incorrect. For more information, see <a href="#">Basic cloud disk status</a> .                                                           |
| InvalidDescription.<br>Malformed | The specified description is wrongly formed.   | 404              | The format of specified Description is incorrect.                                                                                                                        |
| InvalidDiskId.<br>NotFound       | The specified disk does not exist.             | 404              | The specified DiskId does not exist.                                                                                                                                     |



## 7.7 ReplaceSystemDisk

Replaces the system disk or changes the operating system of an ECS instance.

### Description

When you call this interface, consider the following:

- You cannot change the category of the system disk for your ECS instance.
- The billing method of the system disk remains unchanged. However, the disk ID of the system disk for your ECS instance is replaced. The original system disk is released once the action is completed.
- The instance must be in the **Stopped** (Stopped) status. If your VPC-Connected instance has the No fees for stopped instances (VPC-Connected) feature enabled, we recommend that you disable the feature when you stop the instance to guarantee a successful restart attempt. For more information, see [StopInstance](#).
- If the specified instance is [locked](#), the `OperationLocks` of the instance cannot be `"LockReason": "security"`.
- The ECS instance cannot have an unpaid order.
- You can specify the size of the new system disk by specifying the parameter `SystemDisk.Size`. The `SystemDisk.Size` must be equal to or greater than `max{20, [size of the current system disk]}`. Extra fees are charged for the size that exceeds `max{20, [the volume of current system disk]}`.

### Request parameters

| Name       | Type   | Required | Description                                                                                                                                                                                                                                                                                                                      |
|------------|--------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action     | String | Yes      | The name of this interface. Value: ReplaceSystemDisk.                                                                                                                                                                                                                                                                            |
| InstanceId | String | Yes      | The ID of the specified instance.                                                                                                                                                                                                                                                                                                |
| ImageId    | String | Yes      | The ID of the image used when you replace the system disk.                                                                                                                                                                                                                                                                       |
| Password   | String | No       | Password of your ECS instance. The password can be [8, 30] characters in length. It must contain uppercase letters, lowercase letters, and numbers . The following special characters are allowed: ()~!@#\$%^&*~+= {}[]:; '< > , . ? / . A slash (/) cannot be the first character of Windows instances administrative password. |

| Name                        | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------|---------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                             |         |          |  <b>Note:</b><br>If you specify the Password parameter, use HTTPS to call the API to avoid password breach.                                                                                                                                                                                                                                                                                           |
| PasswordInherit             | Boolean | No       | Whether or not to use the password pre-configured in the image you select. PasswordInherit is specified, the Password must be null. For a secured access, make sure that the selected image has password configured.                                                                                                                                                                                                                                                                   |
| KeyPairName                 | String  | No       | Key pair name. <ul style="list-style-type: none"> <li>For a Windows instance, ignore this parameter, and the default value is null. If a value is set for the KeyPairName parameter, the parameter Password is still effective.</li> <li>For a Linux instance, the password of username is disabled if a value is set for the KeyPairName parameter.</li> </ul>                                                                                                                        |
| SystemDisk.Size             | Integer | No       | Size of the new system disk, measured in GiB. Valid range: [Max{20, [the size of the specified image file]}, 500].<br>Default value: Max{40, [the size of the specified image file]}.                                                                                                                                                                                                                                                                                                  |
| ClientToken                 | String  | No       | Guarantees the idempotence of the request. The value is generated by a client and must be globally unique. Only ASCII characters are allowed. It can contain a maximum of 64 ASCII characters. For more information, see <a href="#">How to ensure idempotence</a> .                                                                                                                                                                                                                   |
| SecurityEnhancementStrategy | String  | No       | Whether or not to activate the security enhancement feature and install network security software free of charge. Optional values: <ul style="list-style-type: none"> <li>Active: Enables the security enhancement feature and install network security software free of charge. Only applicable to the ECS official images.</li> <li>Deactive: Disables the security enhancement feature and no network security software installation. Applicable to all kinds of images.</li> </ul> |

## Response parameters

| Name   | Type   | Description                                   |
|--------|--------|-----------------------------------------------|
| DiskId | String | Indicates the disk ID of the new system disk. |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=ReplaceSystemDisk
&InstanceId=i-23jggx34b
&ImageId=m-myimage11
&<Common Request Parameters>
```

### Response example

#### XML format

```
<ReplaceSystemDiskResponse>
  <DiskId>d-23jbf2v5m</DiskId>
  <RequestId>F3CD6886-D8D0-4FEE-B93E-1B73239673DE</RequestId>
</ReplaceSystemDiskResponse>
```

#### JSON format

```
{
  "RequestId": "337568C5-64F3-4B76-8CDD-D3D8C57B5B8C",
  "DiskId": "d-j6cam2z21u4ks3dj6flb"
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                    | Error message                                                     | HTTP status code | Meaning                                                        |
|-------------------------------|-------------------------------------------------------------------|------------------|----------------------------------------------------------------|
| InvalidParameter.Conflict     | The specified image does not support the specified instance type. | 400              | The specified image cannot run in the specified instance type. |
| InvalidPassword.Malformed     | The specified parameter "Password" is not valid.                  | 400              | The specified Password is invalid.                             |
| InvalidPasswordParam.Mismatch | The input password should be null when passwdInherit is true.     | 400              | When PasswdInherit is specified, the Password must be null.    |

| Error code                                      | Error message                                                                                | HTTP status code | Meaning                                                                                                                                               |
|-------------------------------------------------|----------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| InvalidSystemDiskSize                           | The specified parameter SystemDisk.Size is invalid.                                          | 400              | The specified SystemDisk.Size is invalid.                                                                                                             |
| InvalidSystemDiskSize.<br>ImageNotSupportResize | The specified image does not support resize.                                                 | 400              | You cannot specify the SystemDisk.Size for the specified ImageId.                                                                                     |
| InvalidSystemDiskSize.<br>.ValueNotSupported    | The specified parameter SystemDisk.Size is invalid.                                          | 400              | The specified SystemDisk.Size is invalid.                                                                                                             |
| OperationDenied                                 | The specified image contains the snapshot of the data disk, does not support this operation. | 400              | You cannot change the system disk of the specified instance when the specified image is created by using a snapshot that contains data of data disks. |
| ChargeTypeViolation                             | The operation is not permitted due to charge type of the instance.                           | 403              | You cannot change the system disk for the specified instance because of its billing method.                                                           |
| DiskCreatingSnapshot                            | The operation is denied due to a snapshot of the specified disk is not completed yet.        | 403              | A snapshot is being created for the specified disk, please try again later.                                                                           |
| ImageNotSubscribed                              | The specified image has not been subscribed.                                                 | 403              | You must subscribe the specified image before the action.                                                                                             |
| ImageNotSupportInstanceType                     | The specified image does not support the InstanceType instance.                              | 403              | The specified image cannot run in the specified category of the instance.                                                                             |

| Error code                 | Error message                                                                                                                                                                                                                                             | HTTP status code | Meaning                                                                                                                              |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| ImageRemovedInMarket       | The specified market image is not available, Or the specified user defined image includes product code because it is based on an image subscribed from marketplace, and that image in marketplace including exact the same product code has been removed. | 403              | The specified ImageId is no longer available in the cloud market.                                                                    |
| IncorrectInstanceState     | The current status of the resource does not support this operation.                                                                                                                                                                                       | 403              | The status of the ECS instance must be Stopped.                                                                                      |
| INST_HAS_UNPAID_ORDER      | The instance has unpaid order.                                                                                                                                                                                                                            | 403              | An unpaid order exists for the specified instance.                                                                                   |
| Instanceexpiredin arrears  | The specified operation is denied as your prepay instance is expired (prepay mode) or in arrears (afterpay mode).                                                                                                                                         | 403              | The specified instance has an overdue payment.                                                                                       |
| InstanceLockedForSecurity  | The instance is locked due to security .                                                                                                                                                                                                                  | 403              | The specified instance is locked for security reasons.                                                                               |
| IoOptimized.NotSupported   | The specified image is not support IoOptimized Instance.                                                                                                                                                                                                  | 403              | The specified ImageId must be able to run in an I/O optimized instance.                                                              |
| QuotaExceed.BuyImage       | The specified image is from the image market. You have not bought it or your quota has been exceeded.                                                                                                                                                     | 403              | You must purchase the specified ImageId before the action. You have reached the maximum number of available images purchased by you. |
| InvalidImageId.NotFound    | The specified ImageId does not exist.                                                                                                                                                                                                                     | 404              | The specified ImageId does not exist.                                                                                                |
| InvalidInstanceId.NotFound | The specified InstanceId does not exist.                                                                                                                                                                                                                  | 404              | The specified InstanceId does not exist.                                                                                             |

| Error code                              | Error message                                                        | HTTP status code | Meaning                                                                                   |
|-----------------------------------------|----------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------|
| InvalidSystemDiskSize.LessThanImageSize | The specified parameter SystemDisk.Size is less than the image size. | 404              | The specified SystemDisk.Size cannot be smaller than the size of the ImageId system disk. |
| InvalidSystemDiskSize.LessThanMinSize   | The specified parameter SystemDisk.Size is less than the min size.   | 404              | The specified SystemDisk.Size cannot be smaller than 40 GiB.                              |
| InvalidSystemDiskSize.MoreThanMaxSize   | The specified SystemDisk.Size parameter exceeds the maximum size.    | 404              | The specified SystemDisk.Size cannot exceed 500 GiB.                                      |
| NoSuchResource                          | The specified resource is not found.                                 | 404              | The specified resource does not exist.                                                    |
| OperationDenied                         | Internal Error.                                                      | 500              | Internal error, please try again later.                                                   |

## 7.8 ResetDisk

Rolls back a disk to a specified disk state by using one of its disk snapshots.

### Description

When you call this interface, consider the following:

- The status of the disk must be **In Use** (In\_Use).
- The status of the ECS instance to which the specified disk is attached must be **Stopped** (Stopped).
- The specified SnapshotId must be one of the disk (DiskId) history snapshots.
- If the specified instance is **locked**, the OperationLocks of the instance cannot be "LockReason": "security".

## Request parameters

| Name       | Type   | Required | Description                                            |
|------------|--------|----------|--------------------------------------------------------|
| Action     | String | Yes      | The name of this interface. Value: ResetDisk.          |
| DiskId     | String | Yes      | ID of the specified disk device.                       |
| SnapshotId | String | Yes      | The snapshot ID of the disk that is to be rolled back. |

## Response parameters

All are common response parameters. For more information, see [common parameters](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=ResetDisk
&DiskId=d-23jbf2v5m
&SnapshotId=s-snapshot1
&<Common Request Parameters>
```

### Response example

#### XML format

```
<ResetDiskResponse>
  <RequestId>F3CD6886-D8D0-4FEE-B93E-1B73239673DE</RequestId>
</ResetDiskResponse>
```

#### JSON format

```
{
  "RequestId": "F3CD6886-D8D0-4FEE-B93E-1B73239673DE"
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Code Center](#).

| Error code                                          | Error message                                                                                                     | HTTP status code | Meaning                                                                                                                                 |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| DiskCategory.<br>OperationNotSupported              | The operation is not supported to the specified disk due to its disk category.                                    | 400              | The category of the specified disk does not support rolling back.                                                                       |
| IncorrectDiskStatus                                 | The current disk status does not support this operation.                                                          | 403              | The status of the disk must be <b>In Use</b> ( <code>In_Use</code> ).                                                                   |
| IncorrectInstanceStatus                             | The current status of the resource does not support this operation.                                               | 403              | The status of the ECS instance to which the specified is attached must be <b>Stopped</b> ( <code>Stopped</code> ).                      |
| InstanceExpiredOrInArrears                          | The specified operation is denied as your prepay instance is expired (prepay mode) or in arrears (afterpay mode). | 403              | Your subscription instance has expired . Or your Pay-As-You-Go instance has an overdue payment.                                         |
| InstanceLockedForSecurity                           | The instance is locked due to security.                                                                           | 403              | Your instance has been <i>locked</i> for security reasons.                                                                              |
| InvalidAccountStatus.<br>NotEnoughBalance           | Your account does not have enough balance.                                                                        | 403              | You registered credit card is invalid. Or insufficient balance in your PayPal account.                                                  |
| InvalidAccountStatus.<br>SnapshotServiceUnavailable | Snapshot service has not been opened yet.                                                                         | 403              | You have not signed up for the snapshot service yet. Please visit the <a href="#">ECS console</a> to sign up and activate your account. |
| InvalidParameter.<br>Mismatch                       | The specified snapshot is not created from the specified disk.                                                    | 403              | The specified SnapshotId must be one of the disk history snapshots.                                                                     |
| InvalidSnapshot.<br>TooOld                          | The snapshotId is created before 2013-07-15, it cannot be                                                         | 403              | The specified snapshot was created on or before July 15,                                                                                |



| Error code                     | Error message                                      | HTTP status code | Meaning                                                          |
|--------------------------------|----------------------------------------------------|------------------|------------------------------------------------------------------|
|                                | restored since the first time the disk detached.   |                  | 2013, and it cannot be used to roll back a disk.                 |
| InvalidSnapshotId.<br>NotReady | The specified snapshot has not completed yet.      | 403              | The specified snapshot is being created, please try again later. |
| OperationDenied                | The specified snapshot does not support ResetDisk. | 403              | The specified snapshot cannot be used to roll back the disk.     |
| InvalidDiskId.<br>NotFound     | The specified DiskId does not exist.               | 404              | The specified disk does not exist.                               |
| InvalidSnapshotId.<br>NotFound | The specified SnapshotId does not exist.           | 404              | The specified disk does not exist.                               |

## 7.9 ResizeDisk

Extends the size of a cloud disk.

### Description

When you call this interface, consider the following:

- You can only extend the size of a data disk instead of a system disk.
- You can only extend the size of a basic cloud disk (Cloud), an ultra cloud disk (Cloud\_efficiency), or an SSD cloud disk (Cloud\_ssd).
- You cannot extend the size of a disk when it is used to create a snapshot.
- If a data disk has been attached to an ECS instance:
  - The instance must be in the **Running** (Running) or **Stopped** (Stopped) status.
  - The instance must be **restarted** in the ECS console or by calling the API **RebootInstance** after the size extension.
- This action only extends the capacity of a data disk, and the partitions and the file system are not modified. After the operation, you must manually allocate the storage space.

**Request parameters**

| Name        | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------|---------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action      | String  | Yes      | The name of this interface. Value: ResizeDisk.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| DiskId      | String  | Yes      | The ID of a disk.                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| NewSize     | Integer | Yes      | <p>Extends the size of a disk to a specified value. The unit of measurement is GiB. Value range:</p> <ul style="list-style-type: none"><li>• For a Basic cloud disk (Cloud): [5, 2000]</li><li>• For an Ultra cloud disk (Cloud_efficiency): [5, 2000]</li><li>• For an SSD cloud disk (Cloud_ssd): [5, 2000]</li></ul> <p>The value of NewSize must be greater than the former size of your disk. A disk that is smaller than 2,000 GiB cannot be extended to a size more than 2,000 GiB.</p> |
| ClientToken | String  | No       | <p>Guarantees the idempotence of the request. The value is generated by a client. The client token must be unique among all requests and can only contain up to 64 ASCII characters. For more information, see <a href="#">how to ensure idempotence</a>.</p>                                                                                                                                                                                                                                  |

## Response parameters

All parameters are common response parameters. For more information, see [common parameters](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=ResizeDisk
&DiskId=xxx
&NewSize=1024
&<Common Request Parameters>
```

### Response example

#### XML format

```
<ResizeDiskResponse>
  <RequestId>F3CD6886-D8D0-4FEE-B93E-1B73239673DE</RequestId>
</ResizeDiskResponse>
```

#### JSON format

```
{
  "RequestId": "F3CD6886-D8D0-4FEE-B93E-1B73239673DE"
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code              | Error message                                                                         | HTTP status code | Description                                                                     |
|-------------------------|---------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------|
| DiskCreatingSnapshot    | The operation is denied due to a snapshot of the specified disk is not completed yet. | 403              | A snapshot is being created for the specified disk, please try again later.     |
| DiskError               | IncorrectDiskStatus                                                                   | 403              | Abnormal disk status.                                                           |
| DiskInArrears           | The specified operation is denied as your disk owing fee.                             | 403              | Overdue payment on the specified disk.                                          |
| IncorrectInstanceStatus | The current status of the resource does not support this operation.                   | 403              | The instance to which the data disk is attached must be in the <b>Running</b> ( |

| Error code                 | Error message                                                                                                     | HTTP status code | Description                                                                                                                                                                 |
|----------------------------|-------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                            |                                                                                                                   |                  | Running) or <b>Stopped</b> (Stopped) status.                                                                                                                                |
| InstanceExpiredOrInArrears | The specified operation is denied as your prepay instance is expired (prepay mode) or in arrears (afterpay mode). | 403              | The instance to which the data disk is attached has been out of service.                                                                                                    |
| InvalidDiskSize.TooLarge   | Specified new disk size is beyond the permitted range.                                                            | 403              | The maximum size of the specified disk is exceeded.                                                                                                                         |
| InvalidDiskSize.TooSmall   | Specified new disk size is less than the original disk size.                                                      | 403              | The value of NewSize must be greater than the former size of your disk.                                                                                                     |
| OperationDenied            | The status of the disk or the instance that the disk is attaching with does not support the operation.            | 403              | You can only extend the size of a data disk. Or the instance to which the data disk is attached must be in the <b>Running</b> (Running) or <b>Stopped</b> (Stopped) status. |
| OperationDenied            | The type of the disk does not support the operation.                                                              | 403              | You can only extend the size of a Basic cloud disk, an Ultra cloud disk or an SSD cloud disk.                                                                               |
| InvalidDiskId.NotFound     | The specified disk does not exist.                                                                                | 404              | The specified DiskId does not exist.                                                                                                                                        |
| InvalidInstanceId.NotFound | The specified InstanceId does not exist.                                                                          | 404              | The specified InstanceId does not exist.                                                                                                                                    |

## 8 Images

---

### 8.1 CreateImage

Creates a custom image. You can use a custom image to create instances ([RunInstances](#)) or change the system disk for an existing instance ([ReplaceSystemDisk](#)).

#### Description

When you call this interface, consider the following:

- You can use a custom image only after its status becomes **Available** (`Available`).
- If the specified instance is `locked`, and the `OperationLocks` of the instance indicates `LockReason: "security"`.

#### Approaches

Three approaches of creating a custom image are as follows:

**Approach 1.** If you want to create a custom image based on the system disk of your ECS instance, you can specify one of the system disk snapshots (`SnapshotId`) to create a custom image. However, the specified snapshot cannot be created on or earlier than July 15, 2013.

**Approach 2.** If you want to create a template for a whole ECS instance, you can specify the (`InstanceId`) to create a custom image. You must make sure that the status of the specified instance is `Running` or `Stopped`. **Running** (`Running`) or **Stopped** (`Stopped`). After a successful invocation, each disk of the specified instance has a new snapshot created.

**Approach 3.** If you want to combine multiple snapshots to make an image template, you can specify `DiskDeviceMapping` to create a custom image. When you specify `DiskDeviceMapping`, consider the following:

- You can only specify one system disk snapshot. The device name of the system disk must be `/dev/xvda`.
- You can specify multiple data disk snapshots. The device names of the data disks are allocated sequentially from `/dev/xvdb` to `/dev/xvdz`, without duplicates.
- `SnapshotId` is not required, if you do not specify the `SnapshotId`, a disk with empty size is created.
- However, the specified `SnapshotId` cannot be created on or earlier than July 15, 2013.

**Request parameters**

| Name                           | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action                         | String | Yes      | The name of this interface. Value: CreateImage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| RegionId                       | String | Yes      | The region ID of the image. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| SnapshotId                     | String | No       | The snapshot ID. A custom image is created from the specified snapshot.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| InstanceId                     | String | No       | Instance ID.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| DiskDeviceMapping.N.Size       | String | No       | <p>The size of a disk. The unit of measurement is GiB. Value range: [5, 2000] GiB.</p> <ul style="list-style-type: none"> <li>The default value is the value of snapshot size ( <code>DiskDeviceMapping.N.SnapshotId</code>) if you do not specify this parameter.</li> <li>If you do not specify the snapshot ID ( <code>DiskDeviceMapping.N.SnapshotId</code>), the default size is 5 GiB.</li> <li>The size value cannot be less than the size of the snapshot (<code>DiskDeviceMapping.N.SnapshotId</code>).</li> </ul> <p>The value range of n in <code>DiskDeviceMapping.n</code> is: [1, 17].</p> <ul style="list-style-type: none"> <li>n =1: Indicates the specified disk is a system disk.</li> <li>n =2, 3, .....17: Indicates the specified disk is a data disk.</li> </ul> |
| DiskDeviceMapping.N.SnapshotId | String | No       | The snapshot ID of the disk <code>DiskDeviceMapping.N..</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| ImageName                      | String | No       | <p>Image name.</p> <ul style="list-style-type: none"> <li>Can contain [2, 128] characters in length. Must begin with an English letter or Chinese character . Can contain digits, colons (:), underscores (_), or hyphens (-).</li> <li>Cannot begin with <code>http://</code> or <code>https://</code>.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| ImageVersion                   | String | No       | The version number of the image, with a length limit of [1, 40] English characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| Name        | Type   | Required | Description                                                                                                                                                                                                                                                          |
|-------------|--------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | String | No       | The description of the image. <ul style="list-style-type: none"><li>It can be [0, 256] letters in length.</li><li>It cannot begin with http:// or https://.</li><li>Default value: null.</li></ul>                                                                   |
| Tag.n.Key   | String | Yes      | The key of a tag of which n is from 1 to 20. Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                                                      |
| Tag.n.Value | String | Yes      | The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                                             |
| ClientToken | String | No       | Guarantees the idempotence of the request. The value is generated by a client and must be globally unique. Only ASCII characters are allowed. It can contain a maximum of 64 ASCII characters. For more information, see <a href="#">How to ensure idempotence</a> . |

### Response parameters

| Name    | Type   | Description |
|---------|--------|-------------|
| ImageId | String | Image ID    |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=CreateImage
&RegionId=cn-hangzhou
&SnapshotId=s-snapshot1
&ImageName=demo_image
&<Common Request Parameters>
```

#### Response example

#### XML format

```
<CreateImageResponse>
  <RequestId>C8B26B44-0189-443E-9816-D951F59623A9</RequestId>
  <ImageId>m-63DFD5FB2</ImageId>
```

```
</CreateImageResponse>
```

### JSON format

```
{
  "RequestId": "C8B26B44-0189-443E-9816-D951F59623A9",
  "ImageId": "m-63DFD5FB2"
}
```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                    | Error message                                                                          | HTTP status code | Description                                                                                                            |
|-------------------------------|----------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------|
| IncorrectInstanceStatus       | The current status of the instance does not support this operation.                    | 400              | The status of the specified instance must be Running or Stopped.                                                       |
| InstanceLockedForSecurity     | The input parameter InstanceId that is mandatory for processing this security reasons. | 400              | The specified instance has been locked for the sake of security.                                                       |
| InvalidDescription.Malformed  | The specified description is wrongly formed.                                           | 400              | The specified Description is invalid.                                                                                  |
| InvalidImageName.Duplicated   | The specified Image name has already been used.                                        | 400              | The value of the specified ImageName already exists.                                                                   |
| InvalidImageName.Malformed    | The specified Image name is wrongly formed.                                            | 400              | The format of the specified ImageName is incorrect.                                                                    |
| InvalidImageVersion.Malformed | The specified ImageVersion is wrongly formed.                                          | 400              | The format of the specified ImageVersion is incorrect. Or you are not authorized to access the specified ImageVersion. |
| InvalidInstanceId.NotFound    | The specified InstanceId does not exist.                                               | 400              | The specified InstanceId does not exist.                                                                               |



| Error code                                      | Error message                                                                                                                    | HTTP status code | Description                                                                                                         |
|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------|
| InvalidInstanceId.ValueNotSupported             | The specified InstanceId is not allowed to create image.                                                                         | 400              | The specified InstanceId cannot be used to create custom images.                                                    |
| InvalidSize.ValueNotSupported                   | The specified parameter DiskDeviceMapping.n.Size beyond the permitted range.                                                     | 400              | The maximum size of the specified DiskDeviceMapping.n.Size value is exceeded.                                       |
| MissingParameter                                | The input parameter SnapshotId or InstanceId or DiskDeviceMapping that is mandatory for processing this request is not supplied. | 400              | You must specify the required SnapshotId, InstanceId, or DiskDeviceMapping.                                         |
| OperationDenied                                 | The specified parameter DiskDeviceMapping.n.SnapshotId does not contain system disk snapshot.                                    | 400              | One system disk snapshot must be contained in the list of DiskDeviceMapping.n.SnapshotId.                           |
| OperationDenied                                 | The specified parameter DiskDeviceMapping.n.SnapshotId contains two or more system disk snapshots.                               | 400              | Parameter Only one system disk snapshot can be contained in the list of DiskDeviceMapping.n.SnapshotId.             |
| Invalidaccountant status.                       | Your account does not have enough balance.                                                                                       | 403              | Your registered credit card is invalid or you have insufficient balance in your PayPal account.                     |
| InvalidAccountStatus.SnapshotServiceUnavailable | Snapshot service has not been opened yet.                                                                                        | 403              | You have not signed up for the snapshot service yet. Please visit ECS console to sign up and activate your account. |

| Error code                 | Error message                                                                                                                          | HTTP status code | Description                                                                 |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------|
| InvalidParamter.Conflict   | The specified same token is trying to make requests with different parameters.                                                         | 403              | The specified ClientToken is uniformed with the parameters.                 |
| InvalidSnapshot.TooOld     | This operation is denied because the specified snapshot by DiskDevice Mapping.n.SnapshotId or SnapshotId is created before 2013-07-15. | 403              | The specified snapshot cannot be created on or earlier than July 15 , 2013. |
| InvalidSnapshotId.NotReady | The current status of the DiskDevice Mapping.n.SnapshotId or SnapshotId does not support this operation.                               | 403              | The status of specified snapshot is incorrect.                              |
| OperationDenied            | The specified snapshot is not allowed to create image.                                                                                 | 403              | The snapshot of the specified disk cannot be used to create images.         |
| OperationDenied            | The specified snapshot is not from system disk.                                                                                        | 403              | Only a system disk snapshot can be used to create custom images.            |
| QuotaExceed.Image          | The Image Quota exceeds.                                                                                                               | 403              | The maximum number of your custom images have exceeded.                     |
| InvalidRegionId.NotFound   | The specified RegionId does not exist .                                                                                                | 404              | The specified RegionId does not exist.                                      |
| InvalidSnapshotId.NotFound | The specified SnapshotId does not exist.                                                                                               | 404              | The specified SnapshotId does not exist.                                    |
| InvalidSnapshotId.NotFound | The specified SnapshotId does not exist.                                                                                               | 404              | The specified SnapshotId does not exist.                                    |

## 8.2 ImportImage

Imports an on-premises image to Alibaba Cloud ECS.

### Description

You can use the imported image to create instances ([RunInstances](#)) or replace the system disk of an instance ([ReplaceSystemDisk](#)). When you call this interface, consider the following:

- You must [upload the image file to OSS](#) beforehand.
- You can only import an image file to a region from OSS in the same region. The image and OSS must belong to one account.
- The `n` in `DiskDeviceMapping.n` indicates the disk type. When `n` is set to 1, it represents a system disk. When `n` is set to [2, 17], it represents a data disk.
- You cannot delete an image that is being imported. However, you can cancel the image import task ([CancelTask](#)).
- To use [RAM](#) to allow ECS to access OSS for your Alibaba Cloud account, follow these steps:
  1. Create a role with a name `AliyunECSImageImportDefaultRole` (**image import fails if a different name is used**), and see the following code snippet to set its role policy.

```
{
  "Statement": [
    {
      "Action": "sts:AssumeRole",
      "Effect": "Allow",
      "Principal": {
        "Service": [
          "ecs.aliyuncs.com"
        ]
      }
    }
  ],
  "Version": "1"
}
```

2. Attach the default permission policy `AliyunECSImageImportRolePolicy` to `AliyunECSImageImportDefaultRole`. You can also create a custom policy with the following permissions:

```
{
  "Version": "1",
  "Statement": [
    {
      "Action": [
        "oss:GetObject",
        "oss:GetBucketLocation"
      ],
      "Resource": "*",
      "Effect": "Allow"
    }
  ]
}
```

```
}
]
```

## Request parameters

| Name         | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                               |
|--------------|--------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action       | String | Yes      | The name of this interface. Value: ImportImage.                                                                                                                                                                                                                                                                                                                           |
| RegionId     | String | Yes      | The region ID. You can call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                                                                                                                             |
| ImageName    | String | No       | <p>The image name.</p> <ul style="list-style-type: none"> <li>Can be [2, 128] characters in length. Must start with an uppercase or lowercase English letter, or a Chinese character. Can contain digits, colons (:), underscores (_), or hyphen (-).</li> <li>The image name is displayed in the ECS console.</li> <li>Cannot start with http:// or https://.</li> </ul> |
| Description  | String | No       | <p>The image description.</p> <ul style="list-style-type: none"> <li>Can be null, but the image description is optional and but must not exceed 256 characters.</li> <li>Cannot start with http:// or https://.</li> </ul>                                                                                                                                                |
| Architecture | String | No       | <p>The system architecture. Optional values:</p> <ul style="list-style-type: none"> <li>i386</li> <li>x86_64</li> </ul> <p>Default value: x86_64.</p>                                                                                                                                                                                                                     |
| OSType       | String | No       | <p>The type of operating system platform. Optional values:</p> <ul style="list-style-type: none"> <li>Windows</li> <li>Linux</li> </ul> <p>Default value: Linux.</p>                                                                                                                                                                                                      |
| Platform     | String | No       | <p>The operating system release edition. Optional values:</p> <ul style="list-style-type: none"> <li>CentOS</li> <li>Ubuntu</li> <li>SUSE</li> <li>OpenSUSE</li> <li>Debian</li> </ul>                                                                                                                                                                                    |

| Name                                | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------|--------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                     |        |          | <ul style="list-style-type: none"> <li>CoreOS</li> <li>Aliyun</li> <li>Windows Server 2003</li> <li>Windows Server 2008</li> <li>Windows Server 2012</li> <li>Others Linux</li> <li>Customized Linux</li> </ul> <p>Default value: Others Linux.</p>                                                                                                                                                                                        |
| DiskDevice Mapping.n. Format        | String | No       | <p>The image format. Optional values:</p> <ul style="list-style-type: none"> <li>RAW</li> <li>VHD</li> <li>qcow2</li> </ul> <p>After an image is imported, the image format is automatically checked and scanned. The result obtained from this process is used as the default value of this parameter.</p>                                                                                                                                |
| DiskDevice Mapping.n. OSSBucket     | String | Yes      | The OSS bucket where an image file is stored.                                                                                                                                                                                                                                                                                                                                                                                              |
| DiskDevice Mapping.n. OSSObject     | String | Yes      | The name (key) of the OSS object with an image file.                                                                                                                                                                                                                                                                                                                                                                                       |
| DiskDevice Mapping.n. DiskImageSize | String | No       | <p>The size of a custom image. The space of the disk must be larger than or equal to the actual used space of disks. Value range:</p> <ul style="list-style-type: none"> <li>When n is set to 1: [5, 500] GiB.</li> <li>When n is set to [2, 16]: [5, 1000] GiB.</li> </ul> <p>When you import an image, the system auto scans and checks the size of the image, and the checking result is used as a default value of this parameter.</p> |

### Response parameters

| Name     | Type   | Description    |
|----------|--------|----------------|
| RegionId | String | The region ID. |
| ImageId  | String | The image ID.  |

| Name         | Type   | Description                     |
|--------------|--------|---------------------------------|
| ImportTaskId | String | The ID of an image import task. |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=ImportImage
&RegionId=cn-hangzhou
&DiskDeviceMapping.1.OSSBucket=ecsimageos
&DiskDeviceMapping.1.OSSObject=CentOS_5.4_32.raw
&<Common Request Parameters>
```

### Response example

#### XML format

```
<ImportImageResponse>
  <RequestId>C8B26B44-0189-443E-9816-D951F59623A9</RequestId>
  <ImageId>Img-231234567</ImageId>
  <ImportTaskId>123-345-2332-22323</ImportTaskId>
</ImportImageResponse>
```

#### JSON format

```
{
  "RequestId": "C8B26B44-0189-443E-9816-D951F59623A9",
  "ImageId": "Img-231234567",
  "ImportTaskId": "123-345-2332-22323"
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                        | Error message                                            | HTTP status code | Meaning                                                                                               |
|-----------------------------------|----------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------|
| Forbidden                         | User not authorized to operate on the specified resource | 400              | You cannot import the image now.<br><a href="#">Open a ticket</a> to enable the image import feature. |
| IncorrectImageStatus              | The specified image is not available.                    | 400              | The status of the specified image is incorrect.                                                       |
| InvalidArchitecture.<br>Malformed | The specified Architecture is wrongly formed.            | 400              | The specified Architecture is invalid.                                                                |

| Error code                   | Error message                                                                                                                   | HTTP status code | Meaning                                                                                                                                   |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| InvalidDescription.Malformed | The specified destination image description is wrongly formed.                                                                  | 400              | The specified target image <code>Description</code> is invalid.                                                                           |
| InvalidFormat.Malformed      | The specified Image format is wrongly formed.                                                                                   | 400              | The specified image file format is invalid.                                                                                               |
| InvalidImageName.Duplicated  | The destination image is exist.                                                                                                 | 400              | The value of the specified <code>ImageName</code> already exists.                                                                         |
| InvalidImageName.Malformed   | The specified destination Image name is wrongly formed.                                                                         | 400              | The specified <code>ImageName</code> is invalid.                                                                                          |
| InvalidImageSize             | The specified “ <code>DiskDeviceMapping.n.DiskImageSize</code> ” should be not less than system device size.                    | 400              | The value of the specified <code>DiskDeviceMapping.n.DiskImageSize</code> must be larger than or equal to the actual used space of disks. |
| InvalidOSType.Malformed      | The specified <code>OSType</code> is wrongly formed.                                                                            | 400              | The specified <code>OSType</code> is invalid.                                                                                             |
| InvalidPlatform.Malformed    | The specified Platform is wrongly formed.                                                                                       | 400              | The specified <code>Platform</code> is invalid.                                                                                           |
| MissingParameter             | An input parameter “ <code>RegionId</code> ” that is mandatory for processing the request is not supplied.                      | 400              | You must specify the parameter <code>RegionId</code> .                                                                                    |
| MissingParameter             | An input parameter “ <code>DiskDeviceMapping.n.OSSBucket</code> ” that is mandatory for processing the request is not supplied. | 400              | You must specify the parameter <code>OSSBucket</code> .                                                                                   |
| MissingParameter             | An input parameter “ <code>DiskDeviceMapping.n.OSSObject</code> ” that is mandatory for processing the request is not supplied. | 400              | You must specify the parameter <code>OSSObject</code> .                                                                                   |
| RegionId.NotFound            | The specified region is not found.                                                                                              | 400              | The <code>RegionId</code> of the specified image does not exist.                                                                          |

| Error code               | Error message                                                 | HTTP status code | Meaning                                                                           |
|--------------------------|---------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------|
| ImageIsImporting         | The specified Image is importing.                             | 403              | The specified image is being copied. Please try again later.                      |
| InvalidRegion.NotSupport | The specified region does not support image import or export. | 403              | The specified region currently does not support image import.                     |
| QuotaExceed.Image        | The Image Quota exceeds.                                      | 403              | You have exceeded the custom images import limit. No more images can be imported. |
| QuotaExceed.Snapshot     | The maximum number of snapshots is exceeded.                  | 403              | You have exceeded the snapshot import limit. No more images can be imported.      |

## 8.3 CopyImage

Copies a custom image from one region to other regions. You can use the destination image to create instances ([RunInstances](#)) or replace system disks ([ReplaceSystemDisk](#)).

### Description

When you call this interface, consider the following:

- You can only copy the custom image when it is in the Available status.
- You can only copy the image within your Alibaba Cloud account. Coping an image cross accounts is not allowed.
- You cannot delete an image ([DeleteImage](#)) when copying is in progress. However, you can cancel the copying process ([CancelCopyImage](#)).

### Request parameters

| Name     | Type   | Required | Description                                                                                                                                             |
|----------|--------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action   | String | Yes      | The name of this interface. Value: CopyImage.                                                                                                           |
| RegionId | String | Yes      | ID of the region to which the source custom image belongs. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list. |



| Name                   | Type   | Required | Description                                                                                                                                                                                                                                                                    |
|------------------------|--------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ImageId                | String | Yes      | ID of the source custom image.                                                                                                                                                                                                                                                 |
| DestinationRegionId    | String | Yes      | ID of the region to where the destination custom image belongs.                                                                                                                                                                                                                |
| DestinationImageName   | String | No       | Name of the destination custom image. The name is a string of 2 to 128 characters. It must begin with an English or a Chinese character. It can contain A-Z, a-z, Chinese characters, numbers, periods (.), colons (:), underscores (_), and hyphens (-). Default value: null. |
| DestinationDescription | String | No       | The description of the destination custom image. It cannot begin with http:// or https://. Default value: null.                                                                                                                                                                |

### Response parameters

| Name    | Type   | Description                         |
|---------|--------|-------------------------------------|
| ImageId | String | ID of the destination custom image. |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=CopyImage
&DestinationRegionId=cn-hangzhou
&ImageId=m-281234567
&RegionId=cn-qingdao
&<Common request parameters>
```

#### Response example

#### XML format

```
<CopyImageResponse>
  <RequestId>C8B26B44-0189-443E-9816-D951F59623A9</RequestId>
  <ImageId>Img-231234567</ImageId>
</CopyImageResponse>
```

#### JSON format

```
{
  "RequestId": "C8B26B44-0189-443E-9816-D951F59623A9",
  "ImageId": "Img-231234567"
```

}

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                   | Error message                                           | HTTP status code | Note                                                                                           |
|------------------------------|---------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------|
| DestinationRegion.NotFound   | The destination region not found                        | 400              | The DestinationRegionId does not exist.                                                        |
| IncorrectImageStatus         | The image not available.                                | 400              | The status of the specified source custom image (ImageId) must be Available.                   |
| InvalidDescription.Malformed | The specified description is wrongly formed.            | 400              | The description of the specified destination custom image (DestinationDescription) is invalid. |
| InvalidImageId.NotFound      | The specified ImageId does not exist.                   | 400              | The specified source custom image (ImageId) does not exist.                                    |
| InvalidImageName.Duplicated  | The destination image does not exist.                   | 400              | The name of the destination custom image (DestinationImageName) is already in use.             |
| InvalidImageName.Malformed   | The specified destination Image name is wrongly formed. | 400              | The name of the specified destination custom image (DestinationImageName) is invalid.          |
| InvalidImageName.Malformed   | The specified Image name is wrongly formed.             | 400              | The format of DestinationImageName is incorrect.                                               |

| Error code                        | Error message                                                                         | HTTP status code | Note                                                                                                                 |
|-----------------------------------|---------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------|
| SourceRegion.NotFound             | The source region not found                                                           | 400              | The RegionId of the specified source custom image does not exist.                                                    |
| Forbidden                         | User not authorized to operate on the specified resource.                             | 403              | You don't have permissions for copying images.                                                                       |
| IncorrectDestinationRegion        | The destination region is not equal the target region.                                | 403              | The source region for copying images (RegionId) must be different from the destination region (DestinationRegionId). |
| InvalidSnapshot.TooOld            | This operation is denied because the specified snapshot is created before 2013-07-15. | 403              | The specified ImageId (ImageId) is created on or before July 15, 2013. Please try other images instead.              |
| OperationDenied.EncryptedSnapshot | The image contains encrypted snapshots, which do not support copying.                 | 403              | The source custom image (ImageId) contains encrypted snapshots, which do not support copying.                        |
| OperationDenied.ImageCopying      | The specified image is being copied.                                                  | 403              | The specified source custom image (ImageId) is being copied. Please try again later.                                 |
| QuotaExceed.Image                 | The Image Quota exceeds.                                                              | 403              | No more images will be copied because you have exceeded your custom image quota.                                     |
| QuotaExceed.Snapshot              | The maximum number of snapshots is exceeded.                                          | 403              | No more images will be copied because                                                                                |

| Error code           | Error message                | HTTP status code | Note                                                                                                |
|----------------------|------------------------------|------------------|-----------------------------------------------------------------------------------------------------|
|                      |                              |                  | you have exceeded your snapshot quota.                                                              |
| RegionNotSupportCopy | The region not support copy. | 403              | The specified region of the destination image (DestinationRegionId) does not support image copying. |

## 8.4 DescribeImages

Queries your available images.

### Description

When you call this interface, consider the following:

- The displayed image resource list contains your custom images, official images provided by Alibaba Cloud, available images from the marketplace, and shared images from the other Alibaba Cloud users.
- You can query images by pages. The result consists of the total number of available image resources and all the image resources on the current page. By default, 10 images are displayed on one page.

### Request parameters

| Name     | Type   | Required | Description                                                                                                                                                                                                                                 |
|----------|--------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action   | String | Yes      | The name of this interface. Value: DescribeImages.                                                                                                                                                                                          |
| RegionId | String | Yes      | ID of the region to which an instance belongs. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                 |
| ImageId  | String | No       | The image ID. You can specify multiple image IDs and separate these IDs with commas (,).                                                                                                                                                    |
| Status   | String | No       | The image status. Optional values: <ul style="list-style-type: none"><li>Creating: The image is being created.</li><li>Available: Available images.</li><li>UnAvailable: Unavailable images.</li><li>CreateFailed: Failed images.</li></ul> |

| Name            | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------|---------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |         |          | Default value: Available supports obtaining multiple values. These values are separated with commas ( , ) .                                                                                                                                                                                                                                                                                                                                                                                                                          |
| SnapshotId      | String  | No       | The ID of the snapshot used to create the image.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| ImageName       | String  | No       | The name of the image.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| ImageOwnerAlias | String  | No       | <p>The alias of the image owner. Optional value:</p> <ul style="list-style-type: none"> <li>system: Public images provided by Alibaba Cloud .</li> <li>self: Your custom images.</li> <li>others: Your images that are shared from other Alibaba Cloud users.</li> <li>marketplace: Images provided by <a href="#">marketplace vendors</a>. You need to pay attention to the charging details of the cloud market image.</li> </ul> <p>Default value: null. Null indicates that results of system, self and others are returned.</p> |
| Usage           | String  | No       | <p>Queries whether the specified image is running on ECS instance or not. Optional values:</p> <ul style="list-style-type: none"> <li>instance: The image is running in an ECS instance.</li> <li>none: The image is not in use.</li> </ul>                                                                                                                                                                                                                                                                                          |
| Tag.n.Key       | String  | No       | The key of a tag. The value range of n is [1, 5]. If you query the images according to tags, the value of Tag.n.Key cannot be a null string.                                                                                                                                                                                                                                                                                                                                                                                         |
| Tag.n.Key       | String  | Yes      | The key of a tag of which n is from 1 to 20. Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                                                                                                                                                                                                                                                                                                                      |
| Tag.n.Value     | String  | Yes      | The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                                                                                                                                                                                                                                                                                                             |
| PageSize        | Integer | No       | <p>Sets the number of lines per page for queries per page. Maximum value: 100.</p> <p>Default value: 10.</p>                                                                                                                                                                                                                                                                                                                                                                                                                         |

| Name       | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------|---------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PageNumber | Integer | 否        | The current page of the of image list.<br>Default value: 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| DryRun     | Boolean | No       | Whether the system performs a permission check only. <ul style="list-style-type: none"><li>true: Sends a permission check request, without performing actual API action. An enabled DryRun checks whether your AccessKey is valid, the authorization status of a RAM user, and whether the required parameters are set. If you do not have the required permissions, a related error response is returned. Otherwise, it is <code>DryRunOperation</code>.</li><li>False: Sends a normal request, returns the 2XX HTTP status code after the check and queries the resource status directly.</li></ul> Default value: false. |

### Response parameters

| Name       | Type    | Description                                                            |
|------------|---------|------------------------------------------------------------------------|
| RegionId   | String  | The region ID of the image.                                            |
| TotalCount | Integer | The number of items on the list.                                       |
| PageNumber | Integer | The current page.                                                      |
| PageSize   | Integer | The number of items on the current page.                               |
| Images     | Array   | A collection composed of image information <a href="#">ImageType</a> . |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeImages
&RegionId=cn-hangzhou
&<Common Request Parameters>
```

#### Response example

#### XML format

```
<DescribeImagesResponse>
  <Images>
    <Image>
      <Architecture>i386</Architecture>
```

```

        <CreationTime>2014-07-22T09:53:44Z</CreationTime>
        <Description></Description>
        <DiskDeviceMappings>
            <DiskDeviceMapping>
                <Device>/dev/xvda</Device>
                <Size>20</Size>
                <SnapshotId></SnapshotId>
            </DiskDeviceMapping>
        </DiskDeviceMappings>
        <ImageId>suse11sp3_64_20G_aliaegis_20150428.vhd</ImageId>
        <ImageName>suse11sp3_64_20G_aliaegis_20150428.vhd</
ImageName>
        <ImageOwnerAlias>system</ImageOwnerAlias>
        <ImageVersion>1.0</ImageVersion>
        <IsCopied>>false</IsCopied>
        <IsSubscribed>>false</IsSubscribed>
        <OSName>SUSE Linux Enterprise Server 11 SP3 64位</OSName>
        <ProductCode></ProductCode>
        <OSType>linux</OSType>
        <Platform>SUSE</Platform>
        <Progress>100</Progress>
        <Size>20</Size>
        <Status>Available</Status>
        <Usage>instance</Usage>
    </Image>
</Images>
<PageNumber>1</PageNumber>
<PageSize>2</PageSize>
<RegionId>cn-hangzhou</RegionId>
<TotalCount>24</TotalCount>
<RequestId>7871BB26-3002-4950-B2E6-98D333077EA5</RequestId>
</DescribeImagesResponse>

```

### JSON format

```

{
  "Images": {
    "Image": [
      {
        "Architecture": "x86_64",
        "CreationTime": "2015-05-06T09:01:32Z",
        "DiskDeviceMappings": {
          "DiskDeviceMapping": [
            {
              "Device": "/dev/xvda",
              "Size": "20"
            }
          ]
        },
        "ImageId": "suse11sp3_64_20G_aliaegis_20150428.vhd",
        "ImageName": "suse11sp3_64_20G_aliaegis_20150428.vhd",
        "ImageOwnerAlias": "system",
        "ImageVersion": "1",
        "IsCopied": false,
        "IsSubscribed": false,
        "OSName": "SUSE Linux Enterprise Server 11 SP3 64位",
        "OSType": "linux",
        "Platform": "SUSE",
        "Progress": "100%",
        "Size": 20,

```

```
        "Status": "Available",
        "Usage": "instance"
    }
]
}
"PageNumber": 1,
"PageSize": 1,
"RegionId": "cn-hangzhou",
"RequestId": "49CBCED4-C9B9-4851-BEB5-8FB5E5169E30",
"TotalCount": 24
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                               | Error message                                          | HTTP status code | Meaning                                                                           |
|------------------------------------------|--------------------------------------------------------|------------------|-----------------------------------------------------------------------------------|
| Invalidimageowneralias.value unsupported | The specified ImageOwnerAlias value is not supported.  | 400              | Invalid ImageOwnerAlias value.                                                    |
| Invalidtag.Mismatch                      | The specified Tag.n.Key and Tag.n.Value are not match. | 400              | The key (Tag.n.Key) and value (Tag.n.Value) of the tag must be key-value matched. |
| InvalidTagCount                          | The specified tags are beyond the permitted range.     | 400              | You can specify a maximum of five tags.                                           |
| InvalidUsage                             | The specified Usage is not valid                       | 404              | The specified Usage parameter is invalid.                                         |



## 9 Snapshots

### 9.1 CreateSnapshot

Creates a snapshot for a specified disk device.

#### Description

When you call this interface, consider the following:

- The maximum number of snapshots you can create for a disk is 64.
- The ECS instance to which the specified disk is attached must be in the **Stopped** (Stopped) or **Running** (Running) status.
- The disk must be attached to an instance.
- If a new instance to which the specified disk is attached has never been started, you cannot create a snapshot.
- If the specified instance is *locked*, and the `OperationLocks` of the instance indicates `LockReason: "security"`, a snapshot cannot be created.
- When you are creating ECS instances (*RunInstances*), replacing the system disk (*ReplaceSystemDisk*) or creating data disks (*CreateDisk*), snapshots cannot be created because the data initialization has not yet been completed. After creating instances or replacing the system disk, you can create a snapshot one hour later. The time it takes to create a snapshot for a new disk depends on the size of the disk data.
- If the `CreateSnapshot` task is not completed, you cannot create another snapshot of the same disk.
- If the `CreateSnapshot` task is not completed, this snapshot cannot be used to create a custom image (*CreateImage*).

#### Request parameters

| Name         | Type   | Required | Description                                                                                                                       |
|--------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------|
| Action       | String | Yes      | The name of this interface. Value: <code>CreateSnapshot</code> .                                                                  |
| DiskId       | String | Yes      | Disk ID.                                                                                                                          |
| SnapshotName | String | No       | The name of a snapshot. <ul style="list-style-type: none"><li>• Length: [2, 128] English letters or Chinese characters.</li></ul> |

| Name        | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|--------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             |        |          | <ul style="list-style-type: none"><li>Must begin with an uppercase or lowercase English letter. Can contain digits, underscores ( _ ), colons (:), or hyphens (-).</li><li>Cannot begin with <code>auto</code>, because snapshot names starting with <code>auto</code> are recognized as automatic snapshots.</li><li>Cannot begin with <code>http://</code> or <code>https://</code>.</li></ul> |
| Description | String | No       | Description of the snapshot. <ul style="list-style-type: none"><li>Can contain [2, 256] characters in length.</li><li>You cannot start with <code>http://</code> and <code>https://</code>.</li></ul> Default: empty                                                                                                                                                                             |
| ClientToken | String | No       | Guarantees the idempotence of the request. The value is generated by a client. It must be unique among all requests and contain a maximum of 64 ASCII characters. For more information, see <a href="#">How to ensure idempotence</a> .                                                                                                                                                          |
| Tag.n.Key   | String | Yes      | The key of a tag of which n is from 1 to 20. Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                                                                                                                                                                                  |
| Tag.n.Value | String | Yes      | The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                                                                                                                                                                         |

### Return parameters

| Name       | Type   | Description      |
|------------|--------|------------------|
| SnapshotId | String | The snapshot ID. |

### Example

#### Request example

```
https://ecs.aliyuncs.com/?Action=CreateSnapshot
&DiskId=1033-60053321
&<Common request parameter>
```

#### Response sample

**XML format**

```
<CreateSnapshotResponse>
  <RequestId>C8B26B44-0189-443E-9816-D951F59623A9</RequestId>
  <SnapshotId>s-923FE2BF0</SnapshotId>
</CreateSnapshotResponse>
```

**JSON format**

```
{
  "RequestId": "C8B26B44-0189-443E-9816-D951F59623A9",
  "SnapshotId": "s-923FE2BF0"
}
```

**Error codes**

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                             | Error message                                                                 | HTTP status code | Description                                                                                         |
|----------------------------------------|-------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------|
| DiskCategory.<br>OperationNotSupported | The operation is not supported to the specified disk due to its disk Category | 400              | You cannot create a snapshot for the specified disk because of its category.                        |
| IncorrectInstanceStatus                | The current status of the resource does not support this operation.           | 400              | The instance of disk Mount must be in <b>Stopped</b> (Stopped), or <b>Running</b> (Running) status. |
| InvalidSnapshotName.<br>Malformed      | The specified SnapshotName is wrongly formed.                                 | 400              | The specified SnapshotName is invalid.                                                              |
| CreateSnapshot.<br>Failed              | The process of creating snapshot failed.                                      | 403              | Snapshot creation has failed.                                                                       |
| DiskId.<br>ValueNotSupported           | The specified parameter diskid is not supported.                              | 403              | You cannot create snapshots for the specified DiskId.                                               |
| DiskInArrears                          | The specified operation is denied as your disk has expired.                   | 403              | The disk has an overdue payment. Try again after your clear your overdue payment.                   |

| Error code                                          | Error message                                               | HTTP status code | Description                                                                                                     |
|-----------------------------------------------------|-------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------|
| IncorrectDiskStatus                                 | The current disk status does not support this operation.    | 403              | The specified disk must be in the <b>In_use</b> (In_use) status.                                                |
| IncorrectDiskStatus.<br>CreatingSnapshot            | A previous snapshot creation is in process.                 | 403              | A snapshot for the specified disk is being created. Please try again later.                                     |
| IncorrectDiskStatus.<br>NeverAttached               | The specified disk has never been attached to any instance. | 403              | The disk must have been attached to an instance.                                                                |
| IncorrectDiskStatus.<br>NeverUsed                   | The specified disk has never been used after creating.      | 403              | The disk has not been used and the snapshot cannot be created.                                                  |
| InstanceLockedForSecurity                           | The disk attached instance is locked due to security.       | 403              | The specified instance has been locked for security.                                                            |
| InvalidAccountStatus.<br>NotEnoughBalance           | Your account does not have enough balance.                  | 403              | You registered credit card is invalid. Or insufficient balance in your PayPal account..                         |
| InvalidAccountStatus.<br>SnapshotServiceUnavailable | Snapshot service has not been opened yet.                   | 403              | You have not activated the service. Please open a <a href="#">ticket</a> to activate it.                        |
| QuotaExceeded.<br>Snapshot                          | The maximum number of snapshots is exceeded.                | 403              | You have exceeded the snapshot creation limit. The maximum number of snapshots you can create for a disk is 64. |
| InvalidDescription.<br>Malformed                    | The specified description is wrongly formed.                | 404              | The specified target image <b>Description</b> is invalid.                                                       |
| InvalidDiskId.<br>NotFound                          | The specified DiskId does not exist.                        | 404              | The specified disk does not exist.                                                                              |

## 9.2 ApplyAutoSnapshotPolicy

Applies automatic snapshot policies to one or more disks. If an automatic snapshot policy has been applied to a disk, **ApplyAutoSnapshotPolicy** can change the automatic snapshot policy for the specified disks.

### Description

When you call this interface, consider the following:

- One disk can be applied to only one automatic snapshot policy.
- You can apply an automatic snapshot policy to multiple disks.
- A short queuing waiting time exists if many automatic snapshot tasks at a certain time point exist. Consequently, the automatic snapshot tasks scheduled at the same time cannot be carried out simultaneously.

### Request parameters

| Name                 | Type   | Required | Description                                                                                                                                                |
|----------------------|--------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action               | String | Yes      | The name of this interface. Value : ApplyAutoSnapshotPolicy.                                                                                               |
| RegionId             | String | Yes      | The region ID of the automatic snapshot policy and the disks. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list. |
| Autosnapshotpolicyid | String | Yes      | The ID of the automatic snapshot policy. You can call DescribeAutoSnapshotPolicyEx to obtain all of your automatic snapshot policy IDs.                    |
| DiskIds              | String | Yes      | The disk ID. When you want to apply the automatic snapshot                                                                                                 |

| Name | Type | Required | Description                                                                                                                                                                         |
|------|------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |      |          | policy to multiple disks, you can set the DiskIds to an array. The format is a JSON array of ["d-xxxxxxx", "d-yyyyyyyy", ... "d-zzzzzzzz"] and the IDs are separated by commas (,). |

### Response parameters

All are common response parameters. For more information, see [Common parameters](#).

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=ApplyAutoSnapshotPolicy
&RegionId=cn-hangzhou
&AutoSnapshotPolicyId=p-233e6ylv0
&DiskIds=["d-233e6ylv0", "d-23vbpbi03", "d-23vasz3ds"]
&<Common Request Parameters>
```

#### Response example

##### XML format

```
<ApplyAutoSnapshotPolicyResponse>
  <RequestId>F3CD6886-D8D0-4FEE-B93E-1B73239673DE</RequestId>
</ApplyAutoSnapshotPolicyResponse>
```

##### JSON format

```
{
  "RequestId": "F3CD6886-D8D0-4FEE-B93E-1B73239673DE"
}
```

### Error codes

The following error codes are specific to this interface. For more error codes, visit the [API Error Center](#).

| Error code                             | Error message                       | HTTP status code | Description                                                 |
|----------------------------------------|-------------------------------------|------------------|-------------------------------------------------------------|
| DiskCategory.<br>OperationNotSupported | The type of the specified disk does | 400              | You cannot apply automatic policy to a local disk. For more |

| Error code                             | Error message                                                               | HTTP status code | Description                                                                |
|----------------------------------------|-----------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------|
|                                        | not support creating a snapshot.                                            |                  | information, see <a href="#">Local disks</a> .                             |
| DiskCategory.<br>OperationNotSupported | The types of some disks in the disk list do not support creating snapshots. | 400              | IDs of local disks exist in the DiskIds.                                   |
| ParameterInvalid                       | The specified automatic snapshot policy does not exist.                     | 404              | The specified AutoSnapshotPolicyId does not exist.                         |
| ParameterInvalid                       | The specified automatic snapshot policy does not exist in the region.       | 404              | The specified AutoSnapshotPolicyId does not exist in the specified region. |
| ParameterInvalid                       | The specified AutoSnapshotPolicyId parameter is invalid.                    | 404              | The specified AutoSnapshotPolicyId is invalid.                             |
| ParameterInvalid                       | The specified DiskIds are invalid.                                          | 404              | The specified DiskIds are invalid.                                         |
| ParameterInvalid                       | The specified RegionId parameter is invalid.                                | 404              | The specified RegionId is invalid.                                         |

## 9.3 DescribeSnapshots

Queries one or more of your available snapshots. InstanceId, DiskId, and SnapshotIds are not required. However, they act as a filter. Logically, they are in an And relation.

### Request parameters

| Name       | Type   | Required | Description                                           |
|------------|--------|----------|-------------------------------------------------------|
| Action     | String | Yes      | The name of this interface. Value: DescribeSnapshots. |
| RegionId   | String | Yes      | The Region ID of snapshot.                            |
| InstanceId | String | No       | The specified instance ID.                            |
| DiskId     | String | No       | The specified instance ID.                            |

| Name           | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                               |
|----------------|---------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Encrypted      | Boolean | No       | Queries the encrypted snapshots. Optional values: <ul style="list-style-type: none"> <li>true: Encrypted snapshots.</li> <li>false: No encryption attribute limit.</li> </ul> Default value: false.                                                                                                                                                                                       |
| SnapshotIds    | String  | No       | The Snapshot ID. The value can contain arrays of up to 10 snapshot IDs. The IDs are displayed in the format of ["s-xxxxxxxx", "s-yyyyyyyy", ... "s-zzzzzzzz"] and separated by commas (,).                                                                                                                                                                                                |
| SnapshotName   | String  | No       | The snapshot name.                                                                                                                                                                                                                                                                                                                                                                        |
| Status         | String  | No       | The snapshot status. Optional values: <ul style="list-style-type: none"> <li>progressing: The snapshots are being created.</li> <li>accomplished: The snapshots are ready to use.</li> <li>failed: The snapshot creation failed.</li> <li>all: All status.</li> </ul> Default value: all.                                                                                                 |
| SnapshotType   | String  | No       | The snapshot category. Optional values: <ul style="list-style-type: none"> <li>auto: Auto snapshots.</li> <li>user: Manual snapshots.</li> <li>all: Auto and manual snapshots.</li> </ul> Default value: all.                                                                                                                                                                             |
| SourceDiskType | String  | No       | Whether the snapshots are created for system disks or data disks. Optional values: <ul style="list-style-type: none"> <li>System: The snapshots are created for system disks.</li> <li>Data: The snapshots are created for data disks.</li> </ul>                                                                                                                                         |
| Usage          | String  | No       | Whether the snapshots are used to create resources or not. Optional values: <ul style="list-style-type: none"> <li>image: The snapshots are used to <b>create custom images</b>.</li> <li>disk: The snapshots are used to <b>CreateDisk</b>.</li> <li>mage_disk: The snapshots are used to create custom images and data disks.</li> <li>none: The snapshots are not used yet.</li> </ul> |



| Name        | Type    | Required | Description                                                                                                                                                                                                              |
|-------------|---------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tag.n.Key   | String  | Yes      | The key of a tag of which n is from 1 to 20. Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".          |
| Tag.n.Value | String  | Yes      | The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://". |
| PageNumber  | Integer | No       | Displays the snapshots on several pages. Start value: 1.<br>Default value: 1.                                                                                                                                            |
| PageSize    | Integer | No       | The maximum entries on a page. Maximum value: 100.<br>Default value: 10.                                                                                                                                                 |

### Response parameters

| Name       | Type                         | Description                                             |
|------------|------------------------------|---------------------------------------------------------|
| TotalCount | Integer                      | The total number.                                       |
| PageNumber | Integer                      | The page number of the list.                            |
| PageSize   | Integer                      | The number of lines per page set during input.          |
| Snapshots  | <a href="#">SnapshotType</a> | A collection composed of snapshot details SnapshotType. |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeSnapshots
&RegionId=cn-hangzhou
&<Common Request Parameters>
```

#### Response example

#### XML format

```
<DescribeSnapshotsResponse>
  <Snapshots>
    <Snapshot>
      <CreationTime>2014-07-24T13:00:52Z</CreationTime>
      <Description></Description>
      <SourceDiskId>d-23x0r79qy</SourceDiskId>
```

```

        <SourceDiskType>DATA</SourceDiskType>
        <ProductCode></ProductCode>
        <SnapshotName>auto_20140724_2</SnapshotName>
        <Progress>100%</Progress>
        <SourceDiskSize>50</SourceDiskSize>
        <Status>accomplished</Status>
        <SnapshotId>s-23f2i9s4t</SnapshotId>
        <Usage>none</Usage>
    </Snapshot>
    <Snapshot>
        <CreationTime>2014-07-24T13:00:42Z</CreationTime>
        <Description></Description>
        <SourceDiskId>101-70105379</SourceDiskId>
        <SourceDiskType>DATA</SourceDiskType>
        <ProductCode></ProductCode>
        <SnapshotName>auto_20140724_2</SnapshotName>
        <Progress>100%</Progress>
        <SourceDiskSize>5</SourceDiskSize>
        <Status>accomplished</Status>
        <SnapshotId>s-23izto5qm</SnapshotId>
        <Usage>none</Usage>
    </Snapshot>
</Snapshots>
<PageNumber>1</PageNumber>
<PageSize>2</PageSize>
<TotalCount>36</TotalCount>
<RequestId>2F409D67-329A-4405-B924-2FC28566B366</RequestId>
</DescribeSnapshotsResponse>

```

### JSON format

```

{
  "PageNumber": 1,
  "PageSize": 2,
  "RequestId": "659F91C6-1949-43B0-90C4-B6342CA757D5",
  "Snapshots": {
    "Snapshot": [
      {
        "CreationTime": "2015-07-30T05:00:14Z",
        "Progress": "100%",
        "SnapshotId": "s-943ypfgic",
        "SnapshotName": "auto_20150730_3",
        "SourceDiskId": "d-944qyqjfa",
        "SourceDiskSize": 20,
        "SourceDiskType": "system",
        "Status": "accomplished",
        "Usage": "none"
      },
      {
        "CreationTime": "2015-07-30T05:00:14Z",
        "Progress": "100%",
        "SnapshotId": "s-94osg320e",
        "SnapshotName": "auto_20150730_3",
        "SourceDiskId": "d-94j355jsq",
        "SourceDiskSize": 20,
        "SourceDiskType": "system",
        "Status": "accomplished",
        "Usage": "none"
      }
    ]
  }
}

```

```
"TotalCount": 36
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                   | Error message                                                     | HTTP status code | Meaning                                                              |
|------------------------------|-------------------------------------------------------------------|------------------|----------------------------------------------------------------------|
| InvalidTag.Mismatch          | The specified Tag.n.Key and Tag.n.Value are not match.            | 400              | The specified Tag.n.Key and Tag.n.Value must be a matched key-value. |
| InvalidTagCount              | The specified tags are beyond the permitted range.                | 400              | The maximum number of the Tag.n.Key and Tag.n.Value is 5.            |
| InvalidSnapshotIds.Malformed | The amount of specified specified snapshot Ids exceeds the limit. | 403              | The value of the specified SnapshotIds is incorrect.                 |
| InvalidSnapshotType.NotFound | The specified SnapshotType is not found.                          | 404              | The specified SnapshotType does not exist.                           |
| InvalidSourceDiskType        | The specified SourceDiskType is not valid.                        | 404              | The specified SourceDiskType is invalid.                             |
| InvalidStatus.NotFound       | The specified Status is not found.                                | 404              | The specified Status is invalid.                                     |
| InvalidUsage                 | The specified Usage is not valid.                                 | 404              | The specified Usage is invalid.                                      |

## 9.4 DescribeSnapshotLinks

Describes the snapshot chains of one or more disks. A snapshot chain is a chain of all the snapshots of a disk, and a disk corresponds to a chain of snapshots, so the snapshot chain ID is the disk ID.

### Description

When you call this interface, consider the following:

- Request parameters, such as `RegionId`, `DiskIds` and `InstanceId`, act as a filter. A logical AND relation exists among parameters.
- If no parameter is specified, the filter does not take effect. When `DiskIds` and `SnapshotLinkIds` are empty array (`[]`), the filter still takes effect, but a null result is returned.

### Request parameters

| Name            | Type   | Required | Description                                                                                                                                                                                                                                                    |
|-----------------|--------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action          | String | Yes      | The name of this interface. Value: <code>DescribeSnapshotLinks</code> .                                                                                                                                                                                        |
| RegionId        | String | Yes      | Region ID of the instance. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                        |
| InstanceId      | String | No       | The instance ID.                                                                                                                                                                                                                                               |
| DiskIds         | String | No       | Disk ID. The disk ID. You can specify a maximum of 100 disk IDs each time. The value of <code>DiskIds</code> is a JSON array of which the format is displayed as <code>["d-xxxxxxx", "d-yyyyyyyy", ... "d-zzzzzzzz"]</code> , IDs are separated by commas (,). |
| SnapshotLinkIds | String | No       | The snapshot chain ID. The snapshot chain ID. You can specify a maximum of 100 snapshot chain IDs each time. The value of <code>SnapshotLinkIds</code> is a JSON array of which the format is displayed                                                        |

| Name       | Type    | Required | Description                                                                                    |
|------------|---------|----------|------------------------------------------------------------------------------------------------|
|            |         |          | as ["p-xxxxxxxxx", "p-yyyyyyyyy", ... "p-zzzzzzzzz"], IDs are separated by a half-angle comma. |
| PageNumber | Integer | No       | Page number of a disk status list. Initial value: 1.<br>Default value: 1.                      |
| PageSize   | Integer | No       | The maximum entries on a page. Value range: [1, 50].<br>Default value: 10.                     |

### Return parameters

| Name          | Type                             | Description                                        |
|---------------|----------------------------------|----------------------------------------------------|
| RegionId      | String                           | Region ID of the snapshot chain.                   |
| TotalCount    | Integer                          | Total number of snapshot chains.                   |
| PageNumber    | Integer                          | Page number of the snapshot chain list.            |
| PageSize      | Integer                          | Number of lines per page set during input.         |
| SnapshotLinks | <a href="#">SnapshotLinkType</a> | A set that consists of snapshot chain information. |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeSnapshotLinks
&RegionId=cn-beijing
&ZoneId=cn-beijing-btc-a01
&PageNumber=1
&<Common parameter request>
```

#### Response example

**XML format**

```
<DescribeSnapshotLinksResponse>
  <SnapshotLinks>
    <SnapshotLink>
      <SnapshotLinkId>d-25okbh2pj</SnapshotLinkId >
      <SourceDiskId>d-25okbh2pj</SourceDiskId>
      <SourceDiskType>data</SourceDiskType>
      <SourceDiskSize>20</SourceDiskSize>
      <RegionId> cn-beijing-btc-a01</RegionId>
      <TotalCount>1</TotalCount>
      <TotalSize>2097152</TotalSize>
    </SnapshotLink>
    <SnapshotLink>
      <SnapshotLinkId>d-2ze0y1jwzpb1geqzkroq</SnapshotLinkId >
      <SourceDiskId>d-2ze0y1jwzpb1geqzkroq</SourceDiskId>
      <SourceDiskType>system</SourceDiskType>
      <SourceDiskSize>40</SourceDiskSize>
      <RegionId> cn-beijing-btc-a01</RegionId>
      <TotalCount>1</TotalCount>
      <TotalSize>2097152</TotalSize>
    </SnapshotLink>
  </SnapshotLinks>
  <PageNumber>1</PageNumber>
  <PageSize>2</PageSize>
  <TotalCount>9</TotalCount>
  <RequestId>ED5CF6DD-71CA-462C-9C94-A61A78A01479</RequestId>
</DescribeSnapshotLinksResponse>
```

**JSON format**

```
{
  "SnapshotLinks": {
    "SnapshotLink": [
      {
        "SourceDiskSize": 20,
        "TotalSize": 2097152,
        "SourceDiskType": "data",
        "RegionId": "cn-beijing-btc-a01",
        "SnapshotLinkId": "d-25okbh2pj",
        "SourceDiskId": "d-25okbh2pj",
        "TotalCount": 1
      },
      {
        "SourceDiskSize": 40,
        "TotalSize": 2097152,
        "SourceDiskType": "data",
        "RegionId": "cn-beijing-btc-a01",
        "SnapshotLinkId": "d-2ze0y1jwzpb1geqzkroq",
        "SourceDiskId": "d-2ze0y1jwzpb1geqzkroq",
        "Totalcount": 1
      }
    ]
  },
  "PageNumber": 1,
  "PageSize": 2,
  "RequestId": "ACD9BBB0-A9D1-46D7-9630-B7A69889E110",
  "TotalCount": 9
}
```

```
}
```

## Error codes

Error codes specific to this interface are as follows. For more error codes, see [API Error Center](#).

| Error code             | Error message                                                | HTTP status code | Note                                         |
|------------------------|--------------------------------------------------------------|------------------|----------------------------------------------|
| InvalidDiskIds         | The specified diskIds is invalid.                            | 400              | The specified DiskIds is invalid.            |
| InvalidRegionId        | The specified regionId is invalid.                           | 400              | The specified RegionId parameter is invalid. |
| InvalidSnapshotLinkIds | The specified snapshotLinkIds is invalid.                    | 400              | The specified SnapshotLinkIds is invalid.    |
| InternalError          | The request processing has failed due to some unknown error. | 500              | Internal error.                              |

## 9.5 ModifyAutoSnapshotPolicyEx

Creates an automatic snapshot policy. After you modify an automatic snapshot policy, the new policy takes effect immediately on the disks that have previously applied the policy.

### Request parameters

| Name                 | Type   | Required | Description                                                                                                         |
|----------------------|--------|----------|---------------------------------------------------------------------------------------------------------------------|
| Action               | String | Yes      | The name of this interface.<br>Value: ModifyAutoSnapshotPolicyEx.                                                   |
| RegionId             | String | Yes      | The region ID. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.         |
| AutoSnapshotPolicyId | String | Yes      | The ID of the automatic snapshot policy. You can call <a href="#">DescribeAutoSnapshotPolicies</a> to view all your |

| Name                   | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------|--------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        |        |          | automatic snapshot policies.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| AutoSnapshotPolicyName | String | No       | The name of the automatic snapshot policy. Default value: null.                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| TimePoints             | String | No       | <p>The automatic snapshot creation time, and the unit of measurement is hour. Value range: [0, 23], which represents from 00:00 to 24:00, for example 1 indicates 01:00. When you want to schedule multiple automatic snapshot tasks for a disk in a day, you can set the TimePoints to an array.</p> <ul style="list-style-type: none"> <li>A maximum of 24 time points can be selected.</li> <li>The format is similar to ["0", "1", ... "23"] JSON array and the time points are separated by commas (,).</li> </ul> |
| RepeatWeekdays         | String | No       | The automatic snapshot repetition dates. The unit of measurement is a day and the repeating cycle is a week. Value range: [1, 7], for example 1 indicates Monday. When you                                                                                                                                                                                                                                                                                                                                              |



| Name          | Type    | Required | Description                                                                                                                                                                                                                                                                                                                           |
|---------------|---------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               |         |          | <p>want to schedule multiple automatic snapshot tasks for a disk in a week, you can set the RepeatWeekdays to an array.</p> <ul style="list-style-type: none"><li>• A maximum of seven time points can be selected.</li><li>• The format is ["1", "2", ... "7"] JSON array and the time points are separated by commas (,).</li></ul> |
| RetentionDays | Integer | No       | <p>The snapshot retention time, and the unit of measurement is day. Optional values:</p> <ul style="list-style-type: none"><li>• -1: Permanent saved.</li><li>• [1, 65536]: The number of days retained.</li></ul> <p>Default: -1.</p>                                                                                                |
| ClientToken   | String  | No       | <p>Guarantees the idempotence of the request. The value is generated by a client. It must be unique among all requests and contains a maximum of 64 ASCII characters. For more information, see <a href="#">How to ensure idempotence</a>.</p>                                                                                        |

## Response parameters

All are common parameters. For more information, see [Common parameters](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=ModifyAutoSnapshotPolicyEx
&RegionId=cn-hangzhou
&AutoSnapshotPolicyId=p-233e6ylv0
&SettingTimePoints=["0", "11", "21"]
&SettingRepeatWeekdays=["1", "2", "4", "7"]
&RetentionDays=30
&<Common Request Parameters>
```

### Response example

#### XML format

```
<ModifyAutoSnapshotPolicyResponse>
  <RequestId>F3CD6886-D8D0-4FEE-B93E-1B73239673DE</RequestId>
</ModifyAutoSnapshotPolicyResponse>
```

#### JSON format

```
{
  "RequestId": "F3CD6886-D8D0-4FEE-B93E-1B73239673DE"
}
```

## Error codes

Error codes specific to this interface are as follows. For more error codes, see [API Error Center](#).

| Error code       | Error message                                                         | HTTP status code | Note                                                                       |
|------------------|-----------------------------------------------------------------------|------------------|----------------------------------------------------------------------------|
| ParameterInvalid | The specified automatic snapshot policy does not exist.               | 404              | The specified AutoSnapshotPolicyId does not exist.                         |
| ParameterInvalid | The specified automatic snapshot policy does not exist in the region. | 404              | The specified AutoSnapshotPolicyId does not exist in the specified region. |
| ParameterInvalid | The specified AutoSnapshotPolicyId is invalid.                        | 404              | The specified AutoSnapshotPolicyId is not legal.                           |

| Error code       | Error message                                | HTTP status code | Note                                 |
|------------------|----------------------------------------------|------------------|--------------------------------------|
| ParameterInvalid | The specified RegionId parameter is invalid. | 404              | The specified RegionId is not valid. |

## 9.6 DescribeSnapshotsUsage

Queries the number of snapshots stored in a region and the total size of the snapshots. If you want to view the snapshot usage information on each disk in the current region, we recommend that you call the DescribeSnapshotLinks operation to query snapshot chain information.

### Request parameters

| Parameter | Type   | Required | Description                                                                                                                                     |
|-----------|--------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Action    | String | Yes      | The name of this interface. Value: DescribeSnapshotsUsage.                                                                                      |
| RegionId  | String | Yes      | The ID of the region where the snapshot is stored. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list. |

### Response parameters

| Parameter     | Type    | Description                                                      |
|---------------|---------|------------------------------------------------------------------|
| SnapshotCount | Integer | The number of snapshots stored in the current region.            |
| SnapshotSize  | Long    | The size of snapshots stored in the current region. Unit: Bytes. |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeSnapshotsUsage
&RegionId=cn-hangzhou
&<Common Request Parameters>
```

#### Response examples

#### XML format

```
<DescribeSnapshotsUsageResponse>
  <SnapshotCount>5</SnapshotCount>
  <SnapshotSize>122</SnapshotSize>

  <RequestId>ED5CF6DD-71CA-462C-9C94-A61A78A01479</RequestId>
```

```
</DescribeSnapshotsUsageResponse>
```

### JSON format

```
{
  "SnapshotCount": "5",
  "SnapshotSize": "122",
  "RequestId": "ACD9BBB0-A9D1-46D7-9630-B7A69889E110"
}
```

### Error codes

All are common error codes. For more information, see [API Error Center](#).

## 9.7 DescribeSnapshotPackage

Queries your purchased OSS storage plans in your specified Alibaba Cloud region. These storage plans can be used for snapshot storage.

### Request parameters

| Parameter  | Type    | Required | Description                                                                                                                                     |
|------------|---------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Action     | String  | Yes      | The name of this interface. Value: DescribeSnapshotPackage.                                                                                     |
| RegionId   | String  | Yes      | The ID of the region where the snapshot is stored. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list. |
| PageNumber | Integer | No       | The page number of the OSS storage plans list.<br>Initial value: 1.<br>Default value: 1.                                                        |
| PageSize   | Integer | No       | The maximum number of entries on a page.<br>Maximum value: 100.<br>Default value: 10.                                                           |

### Response parameters

| Parameter        | Type                                     | Description                                    |
|------------------|------------------------------------------|------------------------------------------------|
| TotalCount       | Integer                                  | The total number of OSS storage plans.         |
| PageNumber       | Integer                                  | The page number of the OSS storage plans list. |
| PageSize         | Integer                                  | The maximum number of entries on a page.       |
| SnapshotPackages | Array of <a href="#">SnapshotPackage</a> | An array of OSS storage plan parameters.       |

| Parameter    | Type   | Description                                                                                                                                                                   |
|--------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| StartTime    | String | The time when the OSS storage plan was purchased. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is yyyy-MM-ddTHH:mm:ssZ. |
| EndTime      | String | The time when the OSS storage plan expires. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is yyyy-MM-ddTHH:mm:ssZ.       |
| InitCapacity | Long   | The storage space offered by the OSS storage plan.                                                                                                                            |
| DisplayName  | String | The name of the OSS storage plan.                                                                                                                                             |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeSnapshotPackage
&RegionId=cn-hangzhou
&<Common Request Parameters>
```

### Response examples

#### XML format

```
<DescribeSnapshotPackageResponse>
  <TotalCount>1</TotalCount>
  <PageNumber>1</PageNumber>
  <PageSize>5</PageSize>
  <SnapshotPackages>
    <SnapshotPackage>
      <StartTime>2017-11-30T06:32:31Z</StartTime>
      <EndTime>2018-11-30T06:32:31Z</EndTime>
      <InitCapacity>500</InitCapacity>
      <DisplayName>sp-snapshotpackage1</DisplayName>
    </SnapshotPackage>
  </SnapshotPackages>
  <RequestId>ACD9BBB0-A9D1-46D7-9630-B7A69889E110</RequestId>
</DescribeSnapshotPackageResponse>
```

#### JSON format

```
{
  "TotalCount": "1",
  "PageNumber": "1",
  "PageSize": "5",
  "SnapshotPackages": {
    "SnapshotPackage": [
      {
        "StartTime": "2017-11-30T06:32:31Z",
        "EndTime": "2018-11-30T06:32:31Z",
        "InitCapacity": "500",
        "DisplayName": "sp-snapshotpackage1"
      }
    ]
  },
  "RequestId": "ACD9BBB0-A9D1-46D7-9630-B7A69889E110"
```

```
}
```

**Error codes**

All are common error codes. For more information, see [API Error Center](#).

# 10 Security groups

## 10.1 CreateSecurityGroup

Creates a security group. For a new security group, only the access permission for instances within the security group is allowed by default, and access permission to other instances outside the group is restricted. If you want to accept requests from the Internet or requests of instances from other security groups, you can call [AuthorizeSecurityGroup](#) to allow the requests.

### Description

When you call this interface, consider the following:

- You can create 100 security groups at most.
- VpcId must be specified if you are creating a VPC-Connected security group.

### Request parameters

| Name              | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                             |
|-------------------|--------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action            | String | Yes      | The name of this interface. Value: CreateSecurityGroup.                                                                                                                                                                                                                                                                                                 |
| RegionId          | String | Yes      | The region ID to which the security group belongs. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                                                         |
| SecurityGroupName | String | No       | The security group name. <ul style="list-style-type: none"><li>• Can contain [2, 128] characters in length. Must begin with an uppercase or lowercase English letter, or a Chinese character. Can contain digits, periods (.), colons (:), underscores (_), and hyphens (-).</li><li>• Cannot begin with http:// or https://.</li></ul> Default: empty. |
| Description       | String | No       | The description of the security group. <ul style="list-style-type: none"><li>• Can contain [2, 256] characters in length.</li><li>• You cannot start with http: // and https://.</li></ul> Default: null.                                                                                                                                               |
| VpcId             | String | No       | The VPC ID to which the security group belongs.                                                                                                                                                                                                                                                                                                         |
| Tag.n.Key         | String | Yes      | The key of a tag of which n is from 1 to 20. Once you use this parameter, it cannot be a null string. It                                                                                                                                                                                                                                                |

| Name        | Type   | Required | Description                                                                                                                                                                                                                              |
|-------------|--------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             |        |          | can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                                                                                                                                   |
| Tag.n.Value | String | Yes      | The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                 |
| ClientToken | String | No       | Guarantees the idempotence of the request. The value is generated by a client. It must be unique among all requests and contains a maximum of 64 ASCII characters. For more information, see <a href="#">How to ensure idempotence</a> . |

### Response parameters

| Name            | Type   | Description                   |
|-----------------|--------|-------------------------------|
| SecurityGroupId | String | The ID of the security group. |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=CreateSecurityGroup
&RegionId=cn-hangzhou
&Description=for_demo
&<Common Request Parameters>
```

#### Response example

#### XML format

```
<CreateSecurityGroupResponse>
  <RequestId>CEF72CEB-54B6-4AE8-B225-F876FF7BA984</RequestId>
  <SecurityGroupId>sg-F876FF7BA</SecurityGroupId>
</CreateSecurityGroupResponse>
```

#### JSON format

```
{
  "RequestId": "CEF72CEB-54B6-4AE8-B225-F876FF7BA984",
  "SecurityGroupId": "sg-F876FF7BA"
}
```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).



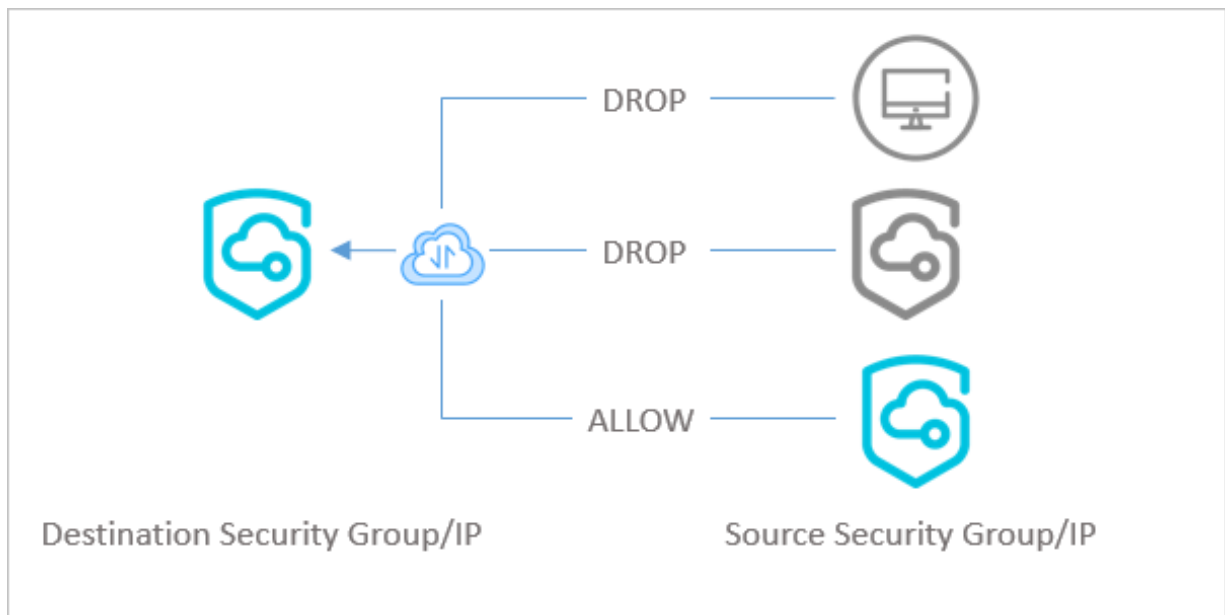
| Error code                                | Error message                                       | HTTP status code | Meaning                                                                                |
|-------------------------------------------|-----------------------------------------------------|------------------|----------------------------------------------------------------------------------------|
| IncorrectVpcStatus                        | Current VPC status does not support this operation. | 400              | The specified VPC is either being created, edited, or deleted. Please try again later. |
| InvalidDescription.Malformed              | The specified parameter "Description" is not valid. | 400              | The specified Description is invalid.                                                  |
| InvalidSecurityGroupDescription.Malformed | Specified security group description is not valid.  | 400              | The specified Description is invalid.                                                  |
| InvalidSecurityGroupName.Malformed        | Specified security group name is not valid.         | 400              | The specified SecurityGroupName is invalid.                                            |
| InvalidVpcId.NotFound                     | vpc id must not empty when only support vpc vm.     | 403              | The VpcId must be specified if you are creating a VPC-Connected security group.        |
| QuotaExceed.SecurityGroup                 | The maximum number of security groups is reached.   | 403              | You can create 100 security groups at most.                                            |
| InvalidRegionId.NotFound                  | The specified RegionId does not exist.              | 404              | The specified RegionId does not exist.                                                 |
| InvalidVpcId.NotFound                     | Specified VPC does not exist.                       | 404              | The specified VPC does not belong to you.                                              |

## 10.2 AuthorizeSecurityGroup

Adds an inbound rule to a security group. This action permits or declines the inbound traffic from other devices to the instances that are in a specified security group.

### Description

We define the beginning of the traffic as the source, and the terminal of the traffic as the destination, see the following picture.



When you call this interface, consider the following:

- You can add up to 100 authorization rules to one security group.
- You can set the authorization policies to accept or drop.
- The **Priority** of a security group ranges from 1 to 100. Here, smaller the number, higher the priority is.
- If the priorities of several authorization rules are the same, **drop** rules take the precedence.
- The source device can be an instance with the specified IP address range (**SourceCidrIp**) or an instance in another security group (**SourceGroupId**).
- Use the following two sets of parameters to add a security group rule. If one rule already exists according to the two sets of parameters, the **AuthorizeSecurityGroup** fails.
  - To set the access permission of an IP address range, for example, [Request example 1](#): **IpProtocol**, **PortRange**, (Optional) **SourcePortRange**, **NicType**, **Policy**, (Optional) **DestCidrIp** and **SourceCidrIp**.
  - To set the access permission of instances that are in another security group, for example, [Request example 2](#): **IpProtocol**, **PortRange**, (Optional) **SourcePortRange**, **NicType**, **Policy**, (Optional) **DestCidrIp**, **SourceGroupOwnerAccount**, and **SourceGroupId**.

### Request parameters

| Name   | Type   | Required | Description                                                |
|--------|--------|----------|------------------------------------------------------------|
| Action | String | Yes      | The name of this interface. Value: AuthorizeSecurityGroup. |

| Name            | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------|--------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RegionId        | String | Yes      | The region ID. For more information, see Regions and zones, or call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                                                                                                                                         |
| SecurityGroupId | String | Yes      | The ID of the destination security group.                                                                                                                                                                                                                                                                                                                                                                                     |
| IpProtocol      | String | Yes      | The transport layer protocol. These values are case-insensitive. Optional values: <ul style="list-style-type: none"> <li>tcp</li> <li>udp</li> <li>icmp</li> <li>gre</li> <li>all</li> </ul>                                                                                                                                                                                                                                  |
| PortRange       | String | Yes      | The range of destination port relevant to the transport layer protocol. Optional values: <ul style="list-style-type: none"> <li>For TCP/UDP protocol, [1, 65535]. You can use a forward slash (/) to separate the port range, expected sample: 1/200, incorrect sample: 200 /1.</li> <li>For ICMP protocol, -1/-1.</li> <li>For GRE protocol, -1/-1.</li> <li>If the IpProtocol is set to all, the value is -1/-1.</li> </ul> |
| SourcePortRange | String | No       | The range of source port relevant to the transport layer protocol. Optional values: <ul style="list-style-type: none"> <li>For TCP/UDP protocol, [1, 65535]. You can use a forward slash (/) to separate the port range, expected sample: 1/200, incorrect sample: 200 /1.</li> <li>For ICMP protocol, -1/-1.</li> <li>For GRE protocol, -1/-1.</li> <li>If the IpProtocol is set to all, the value is -1/-1.</li> </ul>      |
| NicType         | String | No       | The network interface type. Optional values: <ul style="list-style-type: none"> <li>internet: Internet network interface.</li> <li>intranet: Internet network interface.</li> </ul> <p>In mutual security group authorization, while SourceGroupId is specified and SourceCidr</p>                                                                                                                                            |

| Name                    | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                   |
|-------------------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         |        |          | Ip is not specified, you must specify NicType as intranet. Default value: internet.                                                                                                                                                                                                                                                           |
| Policy                  | String | No       | <p>The access permission. Optional values:</p> <ul style="list-style-type: none"> <li>accept: Allows the access.</li> <li>drop: Declines the access, and sends no response to the source device.</li> </ul> <p>Default value: accept.</p>                                                                                                     |
| DestCidrIp              | String | No       | The destination IP address range. Only CIDR and IPv4 format are supported. Default value: Null.                                                                                                                                                                                                                                               |
| SourceCidrIp            | String | No       | The source IP address range. Only CIDR and IPv4 format are supported. Default value: Null.                                                                                                                                                                                                                                                    |
| SourceGroupId           | String | No       | <p>The source security group ID. Either the SourceGroupId or SourceCidrIp parameter must be set.</p> <p>If the SourceGroupId is specified and SourceCidrIp is not specified, the NicType must be set to intranet.</p> <p>If both the SourceGroupId and SourceCidrIp parameters are set, SourceCidrIp is authorized by default.</p>            |
| SourceGroupOwnerAccount | String | No       | <p>The Alibaba Cloud account of the source security group.</p> <ul style="list-style-type: none"> <li>If the SourceGroupOwnerAccount and SourceGroupOwnerId are not set, authorization is performed for your other security groups.</li> <li>If the SourceCidrIp is already set, the SourceGroupOwnerAccount is invalid.</li> </ul>           |
| SourceGroupOwnerId      | String | No       | <p>The Alibaba Cloud account ID of the source security group.</p> <ul style="list-style-type: none"> <li>If the SourceGroupOwnerId and SourceGroupOwnerAccount are not set, authorization is performed for security groups of the same account.</li> <li>If the SourceCidrIp is already is set, the SourceGroupOwnerId is invalid.</li> </ul> |

| Name        | Type   | Required | Description                                                                    |
|-------------|--------|----------|--------------------------------------------------------------------------------|
| Priority    | String | No       | The authorization policy priority. Value range: [1, 100].<br>Default value: 1. |
| Description | String | No       | The security group rule description, which can contain up to 512 characters.   |

## Response parameters

All are common response parameters. See [Common response parameters](#).

## Examples

### Request example 1

Grant access permission to a specified IP address range. You can set the `NicType` for a classic network-connected security group to `internet` or `intranet`. The `NicType` of a VPC-Connected security group can be set to `intranet` only.

```
https://ecs.aliyuncs.com/?Action=AuthorizeSecurityGroup
&SecurityGroupId=sg-F876FF7BA
&SourceCidrIp=0.0.0.0/0
&IpProtocol=tcp
&PortRange=1/65535
&NicType=intranet
&Policy=Allow
&<Common Request Parameters>
```

### Request example 2

Grant the access permission of another security group. The `NicType` can be set to `intranet` only. For mutual accesses between classic network-connected security groups, you can set the permission for another security group in the same region to access your security group. This security group can be yours or belong to other `SourceGroupOwnerAccount`. For mutual accesses between VPC-Connected security groups, you can set the permission for another security group in the same VPC to access your security group.

```
https://ecs.aliyuncs.com/?Action=AuthorizeSecurityGroup
&SecurityGroupId=sg-F876FF7BA
&SourceGroupId=sg-1651FBB64
&SourceGroupOwnerAccount=test@aliyun.com
&IpProtocol=tcp
&PortRange=1/65535
&NicType=intranet
&Policy=Drop
&<Common Request Parameters>
```

## Response example

**XML format**

```
<AuthorizeSecurityGroupResponse>
  <RequestId>CEF72CEB-54B6-4AE8-B225-F876FF7BA984</RequestId>
</AuthorizeSecurityGroupResponse>
```

**JSON format**

```
{
  "RequestId": "CEF72CEB-54B6-4AE8-B225-F876FF7BA984"
}
```

**Error codes**

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                       | Error message                                                      | HTTP status code | Meaning                                                                                                                  |
|----------------------------------|--------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------|
| InvalidIpProtocol.Malformed      | The specified parameter "PortRange" is not valid.                  | 400              | The specified IpProtocol is invalid.                                                                                     |
| InvalidPriority.Malformed        | The specified parameter "Priority" is not valid.                   | 400              | The specified Priority is invalid.                                                                                       |
| InvalidSourceCidrIp.Malformed    | The specified parameter "SourceCidrIp" is not valid.               | 400              | The specified SourceCidrIp is invalid.                                                                                   |
| InvalidDestCidrIp.Malformed      | The specified parameter "SignatureVersion" is not valid.           | 400              | The specified DestCidrIp is invalid.                                                                                     |
| InvalidPolicy.Malformed          | The specified parameter "Policy" is not valid.                     | 400              | The specified Policy is invalid.                                                                                         |
| InvalidNicType.ValueNotSupported | The specified NicType does not exist.                              | 400              | The specified NicType does not exist.                                                                                    |
| InvalidSourceGroupId.Mismatch    | Specified security group and source group are not in the same VPC. | 400              | The network type of the specified destination security group is VPC, so the source security group must be VPC-connected. |
| InvalidNicType.Mismatch          | Specified nic type conflicts with the authorization record.        | 400              | The specified NicType is invalid.                                                                                        |

| Error code                                | Error message                                                                                           | HTTP status code | Meaning                                                                                            |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------|
| InvalidSourceGroup.NotFound               | The specified SourceGroupId does not exist.                                                             | 400              | The specified SourceGroupId does not exist.                                                        |
| InvalidPriority.ValueNotSupported         | The specified Priority is invalid.                                                                      | 400              | The specified Priority is invalid                                                                  |
| InvalidSecurityGroupDescription.Malformed | The specified security group rule description is not valid.                                             | 400              | The specified Description is invalid.                                                              |
| OperationDenied                           | The specified IpProtocol does not exist or IpProtocol and PortRange do not match.                       | 400              | The specified IpProtocol does not exist. Or the specified IP protocol and port range do not match. |
| AuthorizationLimitExceed                  | The maximum number of authorization rules in the security group is exceeded.                            | 403              | You cannot add more than 100 authorization rules to one security group.                            |
| InvalidSourceGroupId.Mismatch             | NicType is required or NicType expects intranet.                                                        | 403              | You must specify NicType. Or the NicType must be set to intranet.                                  |
| InvalidNetworkType.Mismatch               | The specified SecurityGroup network type should be same with SourceGroup network type (vpc or classic). | 403              | The network type of the security group must be the same.                                           |
| InvalidParameter.Conflict                 | The specified SecurityGroupId should be different from the SourceGroupId.                               | 403              | The SecurityGroupId and SourceGroupId cannot be the same security group.                           |
| MissingParameter                          | The input parameter "SourceGroupId" or "SourceCidrIp" cannot be both blank.                             | 403              | You must specify SourceGroupId or SourceCidrIp.                                                    |

| Error code                      | Error message                                             | HTTP status code | Meaning                                                    |
|---------------------------------|-----------------------------------------------------------|------------------|------------------------------------------------------------|
| InvalidSourceGroupId.NotFound   | The SourceGroupId provided does not exist in our records. | 404              | The specified <code>SourceGroup</code> does not exist.     |
| InvalidSecurityGroupId.NotFound | The specified SecurityGroupId does not exist.             | 404              | The specified <code>SecurityGroupId</code> does not exist. |
| InvalidRegionId.NotFound        | The specified RegionId does not exist.                    | 404              | The specified <code>RegionId</code> does not exist.        |

## 10.3 JoinSecurityGroup

Adds an instance to a specified security group.

### Description

When you call this interface, consider the following:

- Before joining a security group, the instance must be in the **Stopped** (Stopped) or **Running** (Running) status.
- Each instance can join a maximum of five security groups.
- Each security group can manage up to 1000 instances.
- Your instance and security group must be in the same Alibaba Cloud region.
- The network type of your instance and security group must be the same. And if their network type is [Virtual Private Cloud \(VPC\)](#), the security group and the instance must belong to the same VPC.

### Request parameters

| Name            | Type   | Required | Description                                                                                                       |
|-----------------|--------|----------|-------------------------------------------------------------------------------------------------------------------|
| Action          | String | Yes      | The name of this interface. Value: JoinSecurityGroup.                                                             |
| InstanceId      | String | Yes      | The instance ID.                                                                                                  |
| SecurityGroupId | String | Yes      | The security group ID. You can call <a href="#">DescribeSecurityGroups</a> to obtain all your security group IDs. |



## Response parameters

All parameters are common response parameters. For more information, see [Common parameters](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=JoinSecurityGroup
&InstanceId= i-instance1
&SecurityGroupId=F876FF7BA984
&<Common Request Parameters>
```

### Response example

#### XML format

```
<JoinSecurityGroupResponse>
  <RequestId>473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E</RequestId>
</JoinSecurityGroupResponse>
```

#### JSON format

```
{
  "RequestId": "473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E"
}
```

## Error codes

The following error codes are specific to this interface. For more error codes, see [API Error Center](#).

| Error code                         | Error message                                                                                   | HTTP status code | Meaning                                                          |
|------------------------------------|-------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------|
| InvalidInstanceId.Mismatch         | Specified instance and security group are not in the same VPC.                                  | 400              | The security group and the instance must belong to the same VPC. |
| InstanceSecurityGroupLimitExceeded | Exceeding the allowed amount of security groups that an instance can be in.                     | 400              | An instance can join a maximum of 5 security groups.             |
| MissingParameter                   | The input parameter "InstanceId" that is mandatory for processing this request is not supplied. | 400              | You must specify the <code>InstanceId</code> parameter.          |

| Error code                         | Error message                                                                                        | HTTP status code | Meaning                                                                                                                   |
|------------------------------------|------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------|
| MissingParameter                   | The input parameter "SecurityGroupId" that is mandatory for processing this request is not supplied. | 400              | You must specify the <code>SecurityGroupId</code> parameter.                                                              |
| InvalidInstanceState               | The current status of the resource does not support this operation.                                  | 403              | Before joining a security group, the instance must be in the <b>Stopped</b> (Stopped) or <b>Running</b> (Running) status. |
| InstanceLockedForSecurity          | The specified operation is denied as your instance is locked for security reasons.                   | 403              | Your request is denied as the specified instance is <i>locked</i> for security reasons.                                   |
| SecurityGroupInstanceLimitExceeded | The maximum number of instances in a security group is exceeded.                                     | 403              | Each security group can manage up to 1000 instances.                                                                      |
| InvalidInstanceId.AlreadyExists    | The specified instance already exists in the specified security group.                               | 403              | The specified instance has joined the specified security group.                                                           |
| OperationDenied                    | The specified operation is denied as your instance is locked for security reasons.                   | 403              | Your request is denied as the specified instance is <i>locked</i> for security reasons.                                   |
| InvalidInstanceId.NotFound         | The specified InstanceId does not exist.                                                             | 404              | The specified InstanceId does not exist.                                                                                  |
| InvalidSecurityGroupId.NotFound    | The specified SecurityGroupId does not exist.                                                        | 404              | The specified SecurityGroupId does not exist.                                                                             |

## 10.4 DescribeSecurityGroups

Describes the basic information about your security groups, such as the security group ID and description. We return and display your security groups in a descending order by the security group ID.

### Request parameters

| Name             | Type    | Required | Description                                                                                                                                                                                                              |
|------------------|---------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action           | String  | Yes      | The name of this interface. Value: DescribeSecurityGroups.                                                                                                                                                               |
| RegionId         | String  | Yes      | Regional ID. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                |
| VpcId            | String  | No       | The ID of the VPC to which the security groups belong.                                                                                                                                                                   |
| SecurityGroupIds | Array   | No       | Security group ID set. A maximum of 100 ID are supported, in the format of ["sg-Id1", "sg-Id2", "sg-Id3"...].                                                                                                            |
| Tag.n.Key        | String  | No       | The key of a tag of which n is from 1 to 20. Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".          |
| Tag.n.Value      | String  | No       | The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://". |
| PageNumber       | Integer | No       | Displays the security groups on several pages. Initial value: 1. Default value: 1.                                                                                                                                       |
| PageSize         | Integer | No       | The maximum entries on a page. Maximum value: 50. Default value: 10.                                                                                                                                                     |

### Response parameters

| Name       | Type    | Description                          |
|------------|---------|--------------------------------------|
| TotalCount | Integer | The total number of security groups. |
| PageNumber | Integer | Current page number.                 |

| Name           | Type                                  | Description                                                                     |
|----------------|---------------------------------------|---------------------------------------------------------------------------------|
| PageSize       | Integer                               | The number of entries on each page.                                             |
| RegionId       | String                                | The region ID.                                                                  |
| SecurityGroups | <a href="#">SecurityGroupItemType</a> | The security group information, composed by a SecurityGroupItemType collection. |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeSecurityGroups
&RegionId=cn-hangzhou
&<Common Request Parameters>
```

### Return example

#### XML format

```
<DescribeSecurityGroupsResponse>
  <RequestId>94D38899-626D-434A-891F-7E1F77A81525</RequestId>
  <TotalCount>4</TotalCount>
  <PageNumber>1</PageNumber>
  <PageSize>10</PageSize>
  <RegionId>cn-hangzhou</RegionId>
  <SecurityGroups>
    <SecurityGroup>
      <SecurityGroupId>sg-F876FF7BA</SecurityGroupId>
      <Description>Test</Description>
    </SecurityGroup>
    <SecurityGroup>
      <SecurityGroupId>sg-086FFC27A</SecurityGroupId>
      <Description>test00212</Description>
    </SecurityGroup>
    <SecurityGroup>
      <SecurityGroupId>sg-BA4B7975B</SecurityGroupId>
      <Description>cn-hangzhou test group</Description>
    </SecurityGroup>
    <SecurityGroup>
      <SecurityGroupId>sg-35F20777C</SecurityGroupId>
      <Description>cn-hangzhou test group</Description>
    </SecurityGroup>
  </SecurityGroups>
</DescribeSecurityGroupsResponse>
```

#### JSON format

```
{
  "RequestId": "94D38899-626D-434A-891F-7E1F77A81525",
  "TotalCount": 4,
  "PageSize": "10",
  "RegionId": "cn-hangzhou",
  "PageNumber": "1",
  "SecurityGroups": {
    "SecurityGroup": [{
```

```
    "SecurityGroupId": "sg-F876FF7BA",
    "Description": "TestByXcf"
  },
  {
    "SecurityGroupId": "sg-086FFC27A",
    "Description": "test00212"
  },
  {
    "SecurityGroupId": "sg-BA4B7975B",
    "Description": "cn-hangzhou test group"
  },
  {
    "SecurityGroupId": "sg-35F20777C",
    "Description": "cn-hangzhou test group"
  }
]
```

### Error codes

All are common response parameters. See [Common response parameters](#).

## 10.5 DescribeSecurityGroupReferences

Queries whether a specified security group has access permission to other security group or not.

### Description

When you call this interface, consider the following:

- To authorize a security group includes the inbound rules authorization and the outbound rules authorization.
- A maximum 100 entries of authorization record can be queried per invocation.
- When you fail to delete one security group ([DeleteSecurityGroup](#)), you can call this interface to make sure whether a specified security group has been authorized by other security group or not. If the security group to be deleted is authorized by another security groups, you must withdraw the authorization before the deletion action.

### Request parameters

| Name              | Type   | Required | Description                                                         |
|-------------------|--------|----------|---------------------------------------------------------------------|
| Action            | String | Yes      | The name of this interface. Value: DescribeSecurityGroupReferences. |
| SecurityGroupId.n | String | Yes      | The ID of a security group. The value range of n is [1, 10].        |

| Name     | Type   | Required | Description                                                                                                                    |
|----------|--------|----------|--------------------------------------------------------------------------------------------------------------------------------|
| RegionId | String | Yes      | The region to where the security group belongs. You can call <a href="#">DescribeRegions</a> to obtain the latest region list. |

### Response parameters

| Name                    | Type                                   | Description                                      |
|-------------------------|----------------------------------------|--------------------------------------------------|
| SecurityGroupReferences | <a href="#">SecurityGroupReference</a> | Information of the security group authorization. |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeSecurityGroupReferences
&RegionId=cn-hangzhou
&SecurityGroupId.1=sg-1133aa
&<Common Request Parameters>
```

#### Response example

#### XML format

```
<DescribeSecurityGroupReferencesResponse>
  <RequestId>CEF72CEB-54B6-4AE8-B225-F876FF7BA984</RequestId>
  <SecurityGroupReferences>
    <SecurityGroupReference>
      <SecurityGroupId>sg-1133aa</SecurityGroupId>
      <ReferencingSecurityGroups>
        <ReferencingSecurityGroup>
          <SecurityGroupId>sg-2255cc</SecurityGroupId>
          <AliUid>123</AliUid>
        </ReferencingSecurityGroup>
        <ReferencingSecurityGroup>
          <SecurityGroupId>sg-2255dd</SecurityGroupId>
          <AliUid>123</AliUid>
        </ReferencingSecurityGroup>
      </ReferencingSecurityGroups>
    </SecurityGroupReference>
  </SecurityGroupReferences>
</DescribeSecurityGroupReferencesResponse>
```

#### JSON format

```
{
  "RequestId": "CEF72CEB-54B6-4AE8-B225-F876FF7BA984"
  "SecurityGroupReferences": [
    {
```

```
    "SecurityGroupId": "sg-1133aa",
    "SecurityReferencingGroups": [
      {
        "AliUid": 123,
        "SecurityGroupId": "sg-2255cc"
      },
      {
        "AliUid": 123,
        "SecurityGroupId": "sg-2255dd"
      }
    ]
  }
]
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                           | Error message                                                                      | HTTP status code | Meaning                                                                                                 |
|--------------------------------------|------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------|
| Abs.GroupNos.<br>Malformed           | The specified parameter SecurityGroupId is essential and size should less than 10. | 400              | You must specify the SecurityGroupId. n parameter. Or the n in the SecurityGroupId. n cannot exceed 10. |
| InvalidSecurityGroupId.<br>.NotFound | The specified SecurityGroupId does not exist.                                      | 400              | The specified security group ID does not exist.                                                         |
| InvalidRegionId.<br>NotFound         | The specified RegionId does not exist.                                             | 404              | The specified RegionId does not exist.                                                                  |

## 10.6 ModifySecurityGroupPolicy

Modifies the intranet communication policy of a security group.

### Description

When you call this interface, consider the following:

- If the InnerAccessPolicy property of a security group is set to Accept, all the instances in the security group can always communicate with each other. The Accept policy has a high priority and other manual modification is ignored.
- If the InnerAccessPolicy property of a security group is set to Drop, all the instances in the security group is blocked from communication. However, you can add rules by calling the [AuthorizeSecurityGroup](#) to enable the intranet communication among several instances.

- You can query the intranet communication status of a security group by calling the [\*DescribeSecurityGroupAttribute\*](#).

### Request parameters

| Name              | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                            |
|-------------------|--------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action            | String | Yes      | The name of this interface. Value: ModifySecurityGroupPolicy.                                                                                                                                                                                                                                                                                          |
| SecurityGroupId   | String | Yes      | ID of a security group.                                                                                                                                                                                                                                                                                                                                |
| RegionId          | String | Yes      | ID of the region to where a specified security group belongs. For more information, call <a href="#"><i>DescribeRegions</i></a> to obtain the latest region list.                                                                                                                                                                                      |
| InnerAccessPolicy | String | Yes      | <p>The intranet communication status of a security group. Optional values:</p> <ul style="list-style-type: none"><li>Accept: All the instances in the specified security group can communicate with each other.</li><li>Drop: The intranet communication in the specified security group is blocked.</li></ul> <p>The values are case insensitive.</p> |

### Response parameters

All are common response parameters. For more information, see [Common parameters](#).



## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=ModifySecurityGroupPolicy
&RegionId=cn-hangzhou
&SecurityGroupId=sg-1133aa
&InnerAccessPolicy=Drop
&<Common Request Parameters>
```

### Response example

#### XML format

```
<ModifySecurityGroupPolicyResponse>
  <RequestId>CEF72CEB-54B6-4AE8-B225-F876xxxxxxx</RequestId>
</ModifySecurityGroupPolicyResponse>
```

#### JSON format

```
{
  "RequestId": "CEF72CEB-54B6-4AE8-B225-F876FF7BA984"
}
```

## Error codes

The following error codes are restricted to this interface. For more error codes, see [API Error Center](#).

| Error code                           | Error message                                                                                                          | HTTP status code | Meaning                                                                        |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------|
| InvalidPolicy.<br>Malformed          | The InnerAccessPolicy is invalid. Only Accept and Drop are supported.                                                  | 400              | You must specify the InnerAccessPolicy. Or the specified parameter is invalid. |
| InvalidSecurityGroupId.<br>Malformed | The SecurityGroupId is invalid. Only letters, numbers and underscores are supported. Maximum length is 100 characters. | 400              | You must specify the SecurityGroupId. Or the specified parameter is invalid.   |
| InvalidRegionId.<br>NotFound         | The RegionId provided does not exist.                                                                                  | 404              | The specified RegionId does not exist.                                         |

## 10.7 ModifySecurityGroupRule

Modify the inbound rules of the security group. You can only modify the description information of the security group rules. If you have not added a security group rule, you can call [AuthorizeSecurityGroup](#).

### Description

Any of the following sets of parameters can determine a Security Group Entry direction rule, specifying only one parameter cannot determine a security group rule.

- Authorize assignment of IP Access to address segments: `IpProtocol`, `PortRange`, (optional) `SourcePortRange`, `NicType`, `Policy`, `DestCidrIp` and (optional) `SourceCidrIp`
- Authorize access to other security groups: `IpProtocol`, `PortRange`, (optional) `SourcePortRange`, `NicType`, `Policy`, (optional) `DestCidrIp`, `DestGroupOwnerAccount` and `DestGroupId`

### Request parameters

| Name            | Type   | Required | Description                                                                                                                                                                                                                                                                 |
|-----------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action          | String | Yes      | The name of this interface. Value: <code>ModifySecurityGroupRule</code>                                                                                                                                                                                                     |
| RegionId        | String | Yes      | Region ID of the destination security group. For more information, call <a href="#">DescribeRegions</a> to query the RegionId list.                                                                                                                                         |
| SecurityGroupId | String | Yes      | Source security group ID.                                                                                                                                                                                                                                                   |
| Description     | String | Yes      | Either the <code>SourceGroupId</code> or <code>SourceCidrIp</code> must be specified. If both <code>SourceGroupId</code> and <code>SourceCidrIp</code> are set, <code>SourceCidrIp</code> is authenticated by default.                                                      |
| IpProtocol      | String | Yes      | IP protocol. Not case sensitive. Optional values: <ul style="list-style-type: none"><li>• <code>icmp</code></li><li>• <code>gre</code></li><li>• <code>tcp</code></li><li>• <code>udp</code></li><li>• <code>all</code>: Support four protocols at the same time.</li></ul> |
| PortRange       | String | Yes      | Range of the port numbers of a specific IP protocol. Optional values:                                                                                                                                                                                                       |

| Name            | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------|--------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |        |          | <ul style="list-style-type: none"> <li>TCP/UDP: 1/65535. Use the slash (/) to separate the starting and ending ports. For example, 1/200 indicates that the range of the port numbers is [1, 200], and an error returns if you specify TCP/UDP to 200/1.</li> <li>ICMP: -1/-1.</li> <li>GRE: -1/-1.</li> <li>All: -1/-1.</li> </ul>                                                                                     |
| SourcePortRange | String | No       | <p>Port ranges associated with the transport layer protocol that the source security group is open. Optional values:</p> <ul style="list-style-type: none"> <li>TCP/UDP protocol: range of values [1, 65535] . Use the slash (/) to separate the starting and ending ports. Demonstration: 1/200; error Demonstration: 200/1.</li> <li>ICMP protocol:-1/-1.</li> <li>GRE Protocol:-1/-1.</li> <li>All:-1/-1.</li> </ul> |
| NicType         | String | No       | <p>Network type. Optional values:</p> <ul style="list-style-type: none"> <li>internet</li> <li>intranet</li> </ul> <p>In mutual security group authorization, when DestGroupId is specified and DestCidrIps not specified, you must set NicType to intranet. intranet. Default value: internet</p>                                                                                                                      |
| Policy          | String | No       | <p>Authorization policy. Optional values:</p> <ul style="list-style-type: none"> <li>accept: Access accepted.</li> <li>drop: Access denied.</li> </ul> <p>Default value: accept</p>                                                                                                                                                                                                                                     |
| DestCidrIp      | String | No       | Destination IP address range. Supports IP address ranges in CIDR and IPv4 formats. Default value: 0.0.0.0/0                                                                                                                                                                                                                                                                                                             |
| SourceCidrIp    | String | No       | Source IP address range. The IP range must be specified in CIDR format. Default value: 0.0.0.0/0                                                                                                                                                                                                                                                                                                                        |
| SourceGroupId   | String | No       | Source security group ID. Either the SourceGroupIdSettings or SourceCidrIp must be specified.                                                                                                                                                                                                                                                                                                                           |

| Name                    | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         |        |          | If this parameter is specified but SourceGroupId is not specified SourceCidrIp, you can only set NicType to intranet. If both SourceGroupId and SourceCidrIp are set, SourceCidrIp is authenticated by default.                                                                                                                                                                                                             |
| SourceGroupOwnerAccount | String | No       | <p>Alibaba Cloud account ID of the source security group. This parameter is applicable in cross-user security group authorization.</p> <ul style="list-style-type: none"> <li>If neither this parameter nor SourceGroupOwnerAccount SourceGroupOwnerId are set, authorization is performed for security groups of the same account.</li> <li>If SourceCidrIp is specified. SourceGroupOwnerAccount is invalid.</li> </ul>   |
| SourceGroupOwnerId      | String | No       | <p>Alibaba Cloud account ID of the source security group. This parameter is applicable in cross-user security group revocation.</p> <ul style="list-style-type: none"> <li>If neither this parameter nor SourceGroupOwnerAccount SourceGroupOwnerAccount are set, authorization is performed for security groups of the same account.</li> <li>If SourceCidrIp is specified. SourceGroupOwnerAccount is invalid.</li> </ul> |
| Priority                | String | No       | Authorization policy priority. Value range: [1, 100].                                                                                                                                                                                                                                                                                                                                                                       |

## Response parameters

All are common response parameters. For more information, see [Common Request Parameters](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=ModifySecurityGroupRule
&SecurityGroupId=sg-F876FF7BA
&SourceGroupId=sg-1651FBB64
&SourceGroupOwnerAccount=test@aliyun.com
&IpProtocol=tcp
&PortRange=80/80
&Policy=allow
&Description=This is a new security group rule.
&<Common Request Parameters>
```

### Response example

**XML format**

```
<ModifySecurityGroupRuleResponse>
  <RequestId>CEF72CEB-54B6-4AE8-B225-F876FF7BA984</RequestId>
</ModifySecurityGroupRuleResponse>
```

**JSON format**

```
{
  "RequestId": "CEF72CEB-54B6-4AE8-B225-F876FF7BA984"
}
```

**Error codes**

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                                | Error information                                           | HTTP status code | Description                                                               |
|-------------------------------------------|-------------------------------------------------------------|------------------|---------------------------------------------------------------------------|
| InvalidIpProtocol.Malformed               | The specified parameter "IpProtocol" is not valid.          | 400              | The specified IpProtocol is not valid.                                    |
| InvalidNicType.Mismatch                   | Specified nic type conflicts with the authorization record. | 400              | The specified network typeNicType does not match the security group rule. |
| InvalidNicType.ValueNotSupported          | The specified NicType does not exist.                       | 400              | The specified NicType does not exist.                                     |
| InvalidPolicy.Malformed                   | The specified parameter "Policy" is not valid.              | 400              | The specified Parameter Policy is invalid.                                |
| InvalidPriority.Malformed                 | The specified parameter "Priority" is not valid.            | 400              | The specified Priority is invalid.                                        |
| InvalidPriority.ValueNotSupported         | The specified Priority is invalid.                          | 400              | The specified Priority is invalid.                                        |
| InvalidSecurityGroupDescription.Malformed | The specified security group rule description is not valid. | 400              | The description Description of Description is invalid.                    |

| Error code                      | Error information                                                                                       | HTTP status code | Description                                                                           |
|---------------------------------|---------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------|
| InvalidSourceCidrIp.Malformed   | The specified parameter "SourceCidrIp" is not valid.                                                    | 400              | The specified SourceCidrIp is invalid.                                                |
| InvalidSourceGroup.NotFound     | The specified SourceGroupId does not exist.                                                             | 400              | The specified SourceGroupId does not exist.                                           |
| InvalidSourceGroupId.Mismatch   | Specified security group and source group are not in the same VPC.                                      | 400              | The specified security group and source security group do not belong to the same VPC. |
| OperationDenied                 | The specified IpProtocol does not exist or IpProtocol and PortRange do not match.                       | 400              | The specified IpProtocol does not exist. or the IP protocol does not match the port.  |
| InvalidNetworkType.Mismatch     | The specified SecurityGroup network type should be same with SourceGroup network type (vpc or classic). | 403              | The network types of the two security groups must be the same..                       |
| InvalidParameter.Conflict       | The specified SecurityGroupId should be different from the SourceGroupId.                               | 403              | SecurityGroupId SourceGroupId cannot have the same value.                             |
| InvalidSourceGroupId.Mismatch   | NicType is required or NicType expects intranet.                                                        | 403              | NicType needs to be defined. NicType must be intranet.                                |
| MissingParameter                | The input parameter "SourceGroupId" or "SourceCidrIp" cannot be both blank.                             | 403              | SourceGroupId or SourceCidrIp must be specified.                                      |
| InvalidRegionId.NotFound        | The specified RegionId does not exist.                                                                  | 404              | The specified RegionId does not exist.                                                |
| InvalidSecurityGroupId.NotFound | The specified SecurityGroupId does not exist.                                                           | 404              | The specified SecurityGroupId does not exist.                                         |

| Error code                    | Error information                                         | HTTP status code | Description                                 |
|-------------------------------|-----------------------------------------------------------|------------------|---------------------------------------------|
| InvalidSourceGroupId.NotFound | The SourceGroupId provided does not exist in our records. | 404              | The specified SourceGroupId does not exist. |

# 11 Deployment sets

## 11.1 CreateDeploymentSet

Creates a deployment set in the specified region.

### Request parameters

| Name                             | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------|--------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action                           | String | Yes      | Name of this interface. Value: CreateDeploymentSet.                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| RegionId                         | String | Yes      | The region ID where the deployment set is located. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                                                                                                                                                                                                  |
| DeploymentStrategy               | String | Yes      | Deployment strategy. Optional value: Availability.<br>Availability represents the High Availability strategy. All the ECS instances in the deployment set are strictly distributed across different physical servers in the region. This design applies to scenarios where several ECS instances need to be isolated from each other to significantly reduce the chances of service being unavailable.                                                                                           |
| DeploymentSetName                | String | No       | Deployment set name. The name is a string of 2 to 128 characters. It must begin with an English or a Chinese character. It can contain A-Z, a-z, Chinese characters, numbers, periods (.), colons (:), underscores (_), and hyphens (-).                                                                                                                                                                                                                                                         |
| Description                      | String | No       | Deployment set description. It cannot begin with http:// or https://.                                                                                                                                                                                                                                                                                                                                                                                                                            |
| OnUnableToRedeployFailedInstance | String | No       | After the instances in the deployment set are shut down and migrated, you need to set an emergency solution in case that the instances cannot be strictly distributed to physical servers. Optional values: <ul style="list-style-type: none"><li>(Default) CancelMembershipAndStart: Allows you to move the instance out of the deployment set and start the instance immediately after the instance has been shut down and migrated. However, the instance specification may change.</li></ul> |



| Name        | Type   | Required | Description                                                                                                                                                                                                                                                                                                 |
|-------------|--------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             |        |          | <ul style="list-style-type: none"><li>KeepStopped: The instance is not allowed to be moved out of the deployment set. The instance stays in an abnormal status until the new resources become available in the region. When the required resources become available, the instance can be started.</li></ul> |
| ClientToken | String | No       | Guarantees the idempotence of the request. The value is generated by a client and must be globally unique. Only ASCII characters are allowed. It can contain a maximum of 64 ASCII characters. For more information, see <a href="#">How to ensure idempotence</a> .                                        |

### Response parameters

| Name            | Type   | Description        |
|-----------------|--------|--------------------|
| DeploymentSetId | String | Deployment set ID. |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=CreateDeploymentSet
&RegionId=cn-hangzhou
&DeploymentStrategy=Availability
&DeploymentSetName=AvailMySet
&<Common Request Parameters>
```

#### Response examples

##### XML format

```
<CreateDeploymentSetResponse>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FE73368</RequestId>
  <DeploymentSetId>ds-bp1frxuzdg87zh4pzqkcm</DeploymentSetId>
</CreateDeploymentSetResponse>
```

##### JSON format

```
{
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FE73368"
  "DeploymentSetId": "ds-bp1frxuzdg87zh4pzqkcm"
}
```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                   | Error message                                                                                  | HTTP status code | Description                                                                                         |
|------------------------------|------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------|
| InvalidDescription.Malformed | The specified parameter Description is not valid.                                              | 400              | The specified <b>Description</b> is invalid.                                                        |
| InvalidParameter.Strategy    | The specified parameter Strategy is not valid.                                                 | 400              | The specified deployment strategy is invalid.                                                       |
| MissingParameter             | The input parameter "RegionId" that is necessary for processing this request is not specified. | 400              | You must specify the <b>RegionId</b> parameter. You are not authorized to use the specified region. |
| DEPLOYMENT_SET.QUOTA_FULL    | The deploymentSet quota is full.                                                               | 403              | The number of deployment sets you can create has reached the limit.                                 |
| InvalidRegionId.NotFound     | The RegionId provided does not exist in our records.                                           | 404              | The specified <b>RegionId</b> does not exist.                                                       |

## 11.2 ModifyInstanceDeployment

Adds an instance to a deployment set or moves an instance from one deployment set to another.

### Request parameters

| Name            | Type    | Required | Description                                                                                                                                                       |
|-----------------|---------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action          | String  | Yes      | Name of this interface. Value: ModifyInstanceDeployment.                                                                                                          |
| RegionId        | String  | Yes      | The region ID where the deployment set and the instance are located. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list. |
| DeploymentSetId | String  | Yes      | Deployment set ID.                                                                                                                                                |
| InstanceId      | String  | Yes      | Instance ID. The instance must be in a Stopped or Running status.                                                                                                 |
| Force           | Boolean | No       | Whether to forcibly change the host where the instance is located or not.                                                                                         |

| Name | Type | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------|------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |      |          | <ul style="list-style-type: none"><li>• True: Allows an instance to move to a new host. Allows you to restart <b>Running</b> instances, <b>Stopped</b> Subscription instances, and <b>Stopped</b> Pay-As-You-Go instances with termination fees.</li><li>• False (default): The host cannot be changed for the instance. The system only attaches the deployment sets to the current host. This may cause the replacement of the deployment set to fail.</li></ul> |

### Response parameters

All are common response parameters. See [Common response parameters](#).

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=ModifyInstanceDeployment
&RegionId=cn-hangzhou
&DeploymentSetId=ds-bp13v7bjnj9gisnlo1
&<Common Request Parameters>
```

#### Response examples

##### XML format

```
<ModifyInstanceDeploymentResponse>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FE73368</RequestId>
</ModifyInstanceDeploymentResponse>
```

##### JSON format

```
{
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FE73368"
}
```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code              | Error message                                  | HTTP status code | Description                                          |
|-------------------------|------------------------------------------------|------------------|------------------------------------------------------|
| DeploymentSet.InvalidId | The specified Deployment Set id doesn't exist. | 400              | The specified <b>DeploymentSetId</b> does not exist. |

| Error code                          | Error message                                                                  | HTTP status code | Description                                                                             |
|-------------------------------------|--------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------|
| DeploymentSet.InstanceLimitExceeded | The number of instances on the specified Deployment Set has reached the limit. | 403              | The number of instances in the specified deployment set has reached the maximum number. |
| IncorrectInstanceStatus             | The current status of the resource does not support this operation.            | 403              | The current status of the resource does not support this operation.                     |
| DeploymentSet.ModificationFailed    | The modification of deployment set is currently impossible.                    | 403              | The deployment set cannot be adjusted.                                                  |

### 11.3 ModifyDeploymentSetAttributes

Modifies the name and description of a deployment set.

#### Request parameters

| Name              | Type   | Required | Description                                                                                                                                                                                                                                          |
|-------------------|--------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action            | String | Yes      | The action that you want to perform. Value: ModifyDeploymentSetAttributes.                                                                                                                                                                           |
| RegionId          | String | Yes      | The region ID to which the deployment set belongs. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                      |
| DeploymentSetId   | String | Yes      | Deployment Set ID.                                                                                                                                                                                                                                   |
| DeploymentSetName | String | No       | New name for the deployment set. The name is a string of 2 to 128 characters. It must begin with an English or a Chinese character. It can contain A-Z, a-z, Chinese characters, numbers, periods (.), colons (:), underscores (_), and hyphens (-). |
| Description       | String | No       | New description for the deployment set. It cannot begin with http:// or https://.                                                                                                                                                                    |

#### Response parameters

All are common response parameters. See [Common response parameters](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=ModifyDeploymentSetAttributes
&RegionId=cn-hangzhou
&Strategy=Availability
&DeploymentSetId=ds-bp1frxuzdg87zh4pzqkc
&DeploymentSetName=AvailMySet
&<Common Request Parameters>
```

### Response examples

#### XML format

```
<ModifyDeploymentSetAttributesResponse>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FE73368</RequestId>
</ModifyDeploymentSetAttributesResponse>
```

#### JSON format

```
{
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FE73368"
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                   | Error message                                                                                 | HTTP status code | Description                                                                                                          |
|------------------------------|-----------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------|
| InvalidDescription.Malformed | The specified parameter "Description" is not valid.                                           | 400              | The specified <b>Description</b> is invalid.                                                                         |
| InvalidParameter.Strategy    | The specified parameter Strategy is not valid                                                 | 400              | The specified deployment strategy is invalid.                                                                        |
| MissingParameter             | The input parameter "RegionId" that is mandatory for processing this request is not supplied. | 400              | You must specify the <b>RegionId</b> parameter. You are not authorized to use the resources of the specified region. |
| InvalidRegionId.NotFound     | The RegionId provided does not exist in our records.                                          | 404              | The specified <b>RegionId</b> does not exist.                                                                        |

## 11.4 DeleteDeploymentSet

Deletes a deployment set.

### Request parameters

| Name            | Type   | Required | Description                                                                                                                                     |
|-----------------|--------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Action          | String | Required | The name of this interface. Value: DeleteDeploymentSet.                                                                                         |
| RegionId        | String | Required | The region ID to which the deployment set belongs. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list. |
| DeploymentSetId | String | Required | Deployment Set ID. If instances exist in the deployment set, you cannot delete the deployment set.                                              |

### Response parameters

All are common response parameters. See [Common response parameters](#).

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=DeleteDeploymentSet
&RegionId=cn-hangzhou
&DeploymentSetId=ds-bp1frxuzdg87zh4pzqkc
&<Common Request Parameters>
```

```
https://ecs.example.com/?Action=DeleteDeploymentSet
&RegionId=cn-hangzhou
&DeploymentSetId=ds-bp1frxuzdg87zh4pzqkc
&<Common Request Parameters>
```

#### Response examples

##### XML format

```
<DeleteDeploymentSetResponse>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FE73368</RequestId>
</DeleteDeploymentSetResponse>
```

##### JSON format

```
{
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FE73368"
```

```
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                   | Error message                                                                                        | HTTP status code | Description                                               |
|------------------------------|------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------|
| MissingParameter             | The input parameter "DeploymentSetId" that is mandatory for processing this request is not supplied. | 400              | You need to specify the value of <b>DeploymentSetId</b> . |
| DependencyViolation.NotFound | There are still instance(s) in the specified DeploymentSetId.                                        | 403              | The specified deployment set cannot have any instance.    |
| InvalidRegionId.NotFound     | The RegionId provided does not exist in our records.                                                 | 404              | The specified RegionId does not exist.                    |

## 11.5 DescribeDeploymentSets

Queries a list of properties of one or more deployment sets.

### Request parameters

| Name              | Type   | Required | Description                                                                                                                                                                                                                           |
|-------------------|--------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action            | String | Yes      | Name of this interface. Value: DescribeDeploymentSets.                                                                                                                                                                                |
| RegionId          | String | Yes      | The region ID to which the deployment set belongs. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                       |
| DeploymentSetIds  | String | No       | List of deployment set IDs. This value can be a JSON array composed of multiple deployment set IDs. The format is ["ds-xxxxxxx", "ds-yyyyyyyy", ... "ds-zzzzzzzz"]. The JSON array supports up to 100 IDs, separated by commas ( , ). |
| DeploymentSetName | String | No       | Deployment set name.                                                                                                                                                                                                                  |
| Strategy          | String | No       | Deployment strategy. Value: Availability. Default value: Null.                                                                                                                                                                        |

| Name       | Type    | Required | Description                                                                         |
|------------|---------|----------|-------------------------------------------------------------------------------------|
| PageNumber | Integer | No       | The page number of the deployment set lists. Starts from: 1.<br>Default: 1.         |
| PageSize   | Integer | No       | The number of lines per page set for paging query.<br>Maximum: 100.<br>Default: 10. |

### Response parameters

| Name               | Type                                       | Description                                                              |
|--------------------|--------------------------------------------|--------------------------------------------------------------------------|
| TotalCount         | Integer                                    | The total number of queried deployment sets.                             |
| PageNumber         | Integer                                    | The number of deployment set pages.                                      |
| PageSize           | Integer                                    | Sets the number of deployment set on each page.                          |
| Deployment SetList | Array of <a href="#">DeploymentSetType</a> | An array composed of DeploymentSet sets. Returns deployment set details. |

### Deployment set type

| Name                | Type                | Description                                    |
|---------------------|---------------------|------------------------------------------------|
| DeploymentSetId     | String              | Deployment Set ID.                             |
| Deployment Strategy | String              | Deployment strategy.                           |
| Deployment SetName  | String              | Deployment set name.                           |
| Description         | String              | Deployment set description.                    |
| InstanceIds         | Array of InstanceId | The instances contained in the deployment set. |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeDeploymentSets
&RegionId=cn-hangzhou
&DeploymentSetsIds=["ds-bp13v7bjnj9gisnlo1"]
&<Common Request Parameters>
```

#### Response examples



## XML format

```
<DescribeDeploymentSetsResponse>
  <PageSize>10</PageSize>
  <TotalCount>1</TotalCount>
  <PageNumber>1</PageNumber>
  <RequestId>1CB9A584-9E43-408D-B5A8-DB42CDECE03B</RequestId>
  <DeploymentSets>
    <DeploymentSet>
      <DeploymentSetDescription>default</DeploymentSetDescription>
      <DeploymentSetId>ds-bp13v7bjnj9gisnlo1ow</DeploymentSetId>
      <DeploymentStrategy>Availability</DeploymentStrategy>
      <DeploymentSetName>test default</DeploymentSetName>
      <InstanceIds>
        <InstanceId>i-sdfkjsdfk</InstanceId>
        <InstanceId>i-kiiwsch</InstanceId>
      </InstanceIds>
    </DeploymentSet>
  </DeploymentSets>
</DescribeDeploymentSetsResponse>
```

## JSON format

```
{
  "PageSize": 10,
  "TotalCount": 1,
  "PageNumber": 1,
  "RequestId": "1CB9A584-9E43-408D-B5A8-DB42CDECE03B",
  "DeploymentSets":
    {
      "DeploymentSet":
        [
          {
            "DeploymentSetDescription": "default",
            "DeploymentSetId": "ds-bp13v7bjnj9gisnlo1ow",
            "DeploymentStrategy": "Availability",
            "DeploymentSetName": "test default",
            "InstanceIds":
              {
                "InstanceId": ["i-sdfkjsdfk", "i-kiiwsch"]
              }
          }
        ]
    }
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                   | Error message                                       | HTTP status code | Description                                  |
|------------------------------|-----------------------------------------------------|------------------|----------------------------------------------|
| InvalidDescription.Malformed | The specified parameter "Description" is not valid. | 400              | The specified <b>Description</b> is invalid. |

| Error code                | Error message                                                                                 | HTTP status code | Description                                                                                                          |
|---------------------------|-----------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------|
| InvalidParameter.Strategy | The specified parameter Strategy is not valid                                                 | 400              | The specified deployment strategy is invalid.                                                                        |
| MissingParameter          | The input parameter "RegionId" that is mandatory for processing this request is not supplied. | 400              | You must specify the <b>RegionId</b> parameter. You are not authorized to use the resources of the specified region. |
| InvalidRegionId.NotFound  | The RegionId provided does not exist in our records.                                          | 404              | The specified <b>RegionId</b> does not exist.                                                                        |

# 12 SSH key pairs

## 12.1 CreateKeyPair

Creates an SSH key pair. We keep the public key and return the unencrypted PEM encoded PKCS #8 private key for you to save. For more information, see [SSH key pairs](#).

### Description

Apart from calling the **CreateKeyPair**, you can create your key pair by using other key pair generators and upload it ([ImportKeyPair](#)) to one of the Alibaba Cloud regions.

You can create up to 500 key pairs in each Alibaba Cloud region.

### Request parameters

| Name        | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                     |
|-------------|--------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action      | String | Yes      | The name of this interface. Value: createkeypair                                                                                                                                                                                                                                                                                                                                |
| RegionId    | String | Yes      | The ID of the region to which the key pair belongs. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                                                                                |
| KeyPairName | String | Yes      | The name of the key pair. The name must be unique. <ul style="list-style-type: none"><li>Can be [2, 128] characters in length.</li><li>Must begin with an uppercase or lowercase English letter. Can contain digits, underscores (_), colons (:), or hyphens (-).</li><li>Supports all character set encoding formats.</li><li>Cannot begin with http:// or https://.</li></ul> |
| Tag.n.Key   | String | Yes      | The key of a tag of which n is from 1 to 20. Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                                                                                                                                                                 |
| Tag.n.Value | String | Yes      | The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                                                                                                                                                        |

**Return parameters**

| Name               | Type   | Description                                                                                                                                                                         |
|--------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KeyPairName        | String | Key pair name.                                                                                                                                                                      |
| KeyPairFingerPrint | String | Fingerprint of the key pair. The public key fingerprint format is defined in RFC4716 and uses the MD5 message digest algorithm. For more information, see <a href="#">RFC4716</a> . |
| PrivateKeyBody     | String | The private key of a key pair. Content of the RSA private key is in the format of unencrypted PEM encoded PKCS#8. For more information, see <i>OpenSSL</i> <a href="#">PKCS#8</a> . |

**Examples****Request example**

```
https://ecs.aliyuncs.com/?Action=CreateKeyPair
&RegionId=cn-qingdao
&KeyPairName=test
&<Common Request Parameters>
```

**Response example****XML format**

```
<CreateKeyPairResponse>
  <RequestId>473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E</RequestId>
  <KeyPairName>test</KeyPairName>
  <KeyPairFingerPrint>89:f0:ba:62:ac:b8:aa:e1:61:5e:fd:81:69:86:6d:
6b:f0:c0:5a:d7</KeyPairFingerPrint>
  <PrivateKeyBody>xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx</PrivateKeyBody>
</CreateKeyPairResponse>
```

**JSON format**

```
{
  "RequestId": "473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E"
  "KeyPairName": "test"
  "KeyPairFingerPrint": "89:f0:ba:62:ac:b8:aa:e1:61:5e:fd:81:69:86:
6d:6b:f0:c0:5a:d7"
  "PrivateKeyBody": "xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
}
```

**Error codes**

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                   | Error message                                                                                 | HTTP status code | NOTE                                                           |
|------------------------------|-----------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------|
| MissingParameter             | The input parameter "RegionId" that is mandatory for processing this request is not supplied. | 400              | You must specify the RegionId parameter.                       |
| InvalidKeyPairName.Malformed | Specified Key Pair name is not valid.                                                         | 400              | The specified KeyPairName is invalid or already exists.        |
| QuotaExceed.KeyPair          | The key pair quota exceeds.                                                                   | 403              | The number of your key pairs cannot exceed 500 in each region. |
| InvalidRegionId.NotFound     | The specified RegionId does not exist.                                                        | 404              | The specified RegionId does not exist.                         |

## 12.2 ImportKeyPair

Imports the public key of an SSH key pair that you create with other key pair generators into one of the Alibaba Cloud regions. Once the public key is imported we secure it. However, you must save the private key by yourself.

### Description

When you call this interface, consider the following:

- You can create up to 500 key pairs in each Alibaba Cloud region.
- The encryption method of your SSH key pair must be any of the following:
  - rsa
  - dsa
  - ssh-rsa
  - ssh-dss
  - ecdsa
  - ssh-rsa-cert-v00@openssh.com
  - ssh-dss-cert-v00@openssh.com
  - ssh-rsa-cert-v01@openssh.com
  - ssh-dss-cert-v01@openssh.com

- ecdsa-sha2-nistp256-cert-v01@openssh.com
- ecdsa-sha2-nistp384-cert-v01@openssh.com
- ecdsa-sha2-nistp521-cert-v01@openssh.com

**Request parameters**

| Name          | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                             |
|---------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action        | String | Yes      | The name of this interface. Value: ImportKeyPair.                                                                                                                                                                                                                                                                                                                                       |
| RegionId      | String | Yes      | Regional ID. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                                                                                                                               |
| PublicKeyBody | String | Yes      | The public key of the SSH key pair.                                                                                                                                                                                                                                                                                                                                                     |
| KeyPairName   | String | Yes      | The name of the key pair. The name must be unique. <ul style="list-style-type: none"><li>• Can be [2, 128] characters in length.</li><li>• Must begin with an uppercase or lowercase English letter. Can contain digits, underscores (_), colons (:), or hyphens (-).</li><li>• Supports all character set encoding formats.</li><li>• Cannot begin with http:// or https://.</li></ul> |

**Return parameters**

| Name        | Type   | Description    |
|-------------|--------|----------------|
| KeyPairName | String | Key pair name. |

| Name               | Type   | Description                                                                                                                                                                            |
|--------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KeyPairFingerPrint | String | Fingerprint of the key pair.<br>The public key fingerprint format is defined in RFC4716 and uses the MD5 message digest algorithm. For more information, see <a href="#">RFC4716</a> . |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=ImportKeyPair
&RegionId=cn-qingdao
&PublicKeyBody=xxxxxxxxxxxxxxxx
&KeyPairName=test
&<Common Request Parameter>
```

### Response example

#### XML format

```
<ImportKeyPairResponse>
  <RequestId>473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E</RequestId>
  <KeyPairName>test</KeyPairName>
  <KeyPairFingerPrint>89:f0:ba:62:ac:b8:aa:e1:61:5e:fd:81:69:86:6d:
6b:f0:c0:5a:d7</KeyPairFingerPrint>
</ImportKeyPairResponse>
```

#### JSON format

```
{
  "RequestId": "473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E"
  "KeyPairName": "test"
  "KeyPairFingerPrint": "89:f0:ba:62:ac:b8:aa:e1:61:5e:fd:81:69:86:
6d:6b:f0:c0:5a:d7"
}
```

## Error codes

Error codes specific to this interface are as follows. For more error codes, see [API Error Center](#).

| Error code       | Error message                                                                                 | HTTP status code | Meaning                                  |
|------------------|-----------------------------------------------------------------------------------------------|------------------|------------------------------------------|
| MissingParameter | The input parameter "RegionId" that is mandatory for processing this request is not supplied. | 400              | You must specify the RegionId parameter. |

| Error code                     | Error message                              | HTTP status code | Meaning                                                 |
|--------------------------------|--------------------------------------------|------------------|---------------------------------------------------------|
| InvalidPublicKeyBody.Malformed | The PublicKeyBody format is not supported. | 400              | The format of the specified PublicKeyBody is incorrect. |
| InvalidKeyPairName.Malformed   | Specified Key Pair name is not valid.      | 400              | The specified KeyPairName is invalid or already exists. |
| InvalidRegionId.NotFound       | The specified RegionId does not exist.     | 404              | The specified RegionId does not exist.                  |

## 12.3 AttachKeyPair

Attaches an SSH key pair to one or more of your Linux instances.

### Description

When you call this interface, consider the following:

- SSH key pairs are not supported for Windows instances.
- Once the SSH key pair is used, the authentication method by using the user name and password is disabled, by default.
- If the instance is in **Running** (Running) status, restart the instance ([RebootInstance](#)) to make the operation take effect.
- If the instance is in **Stopped** (Stopped) status, the SSH key pair takes effect immediately once the instance starts ([StartInstance](#)).
- If an instance already has an attached SSH key pair, the new SSH key pair replaces the former one automatically.

### Request parameters

| Name     | Type   | Required | Description                                                 |
|----------|--------|----------|-------------------------------------------------------------|
| Action   | String | Yes      | The name of this interface. Value: AttachKeyPair.           |
| RegionId | String | Yes      | The ID of the region to which the SSH key pair belongs. For |



| Name        | Type   | Required | Description                                                                                                                                                                               |
|-------------|--------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             |        |          | more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                  |
| KeyPairName | String | Yes      | The name of the SSH key pair.                                                                                                                                                             |
| InstanceIds | String | Yes      | The instance ID. The value can contain arrays of up to 50 instance IDs. The IDs are displayed in the format of ["i-xxxxxxx", "i-yyyyyyyy", ... "i-zzzzzzzz"] and separated by commas (,). |

### Response parameters

All are common response parameters. For more information, see [Common parameters](#).

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=AttachKeyPair
&RegionId=cn-qingdao
&KeyPairName=test
&InstanceIds=["i-XXXXX"]
&<Common Request Parameters>
```

#### Response example

##### XML format

```
<AttachKeyPairResponse>
  <RequestId>473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E</RequestId>
</AttachKeyPairResponse>
```

##### JSON format

```
{
  "RequestId": "473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E"
```

```
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                          | Error message                                                                                           | HTTP status code | Description                                                                                                                   |
|-------------------------------------|---------------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------|
| MissingParameter                    | The input parameter <code>RegionId</code> that is required for processing this request is not supplied. | 400              | You must specify the parameter <code>RegionId</code> . Or you are not authorized to use the resource in the specified region. |
| DependencyViolation.WindowsInstance | The instance creating this window, cannot use ssh key pair to login.                                    | 403              | You cannot attach SSH key pair to Windows instances.                                                                          |
| InvalidKeyPairName.NotFound         | The specified <code>KeyPairName</code> does not exist in our records.                                   | 404              | The specified <code>KeyPairName</code> does not exist.                                                                        |
| InvalidRegionId.NotFound            | The specified <code>RegionId</code> does not exist.                                                     | 404              | The specified <code>RegionId</code> does not exist.                                                                           |

## 12.4 DetachKeyPair

Detaches an SSH key pair from one or more of your Linux instances.

### Description

When you call this interface, consider the following:

- After you detach an SSH key pair, restart the instance ([RebootInstance](#)) for the operation to take effect.
- After the key pair is detached, the user name and password authentication method is used by default.

## Request parameters

| Name        | Type   | Required | Description                                                                                                                                                                                              |
|-------------|--------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action      | String | Yes      | The name of this interface. Value: DetachKeyPair                                                                                                                                                         |
| RegionId    | String | Yes      | The ID of the region to which your SSH key pair belongs. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                    |
| KeyPairName | String | Yes      | The names of key pairs.                                                                                                                                                                                  |
| InstanceIds | String | No       | The instance ID. The instance ID. The value can contain arrays of up to 50 instance IDs. The IDs are displayed in the format of ["i-xxxxxxx", "i-yyyyyyy", ... "i-zzzzzzz"] and separated by commas (,). |

## Response parameters

All are common parameters. See [Common parameters](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DetachKeyPair
&RegionId=cn-qingdao
&InstanceIds=["i-xxxxxxx", "i-yyyyyyy"]
&KeyPairName=test
&<Common Request Parameters>
```

### Response example

### XML format

```
<DetachKeyPairResponse>
```

```
<RequestId>473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E</RequestId>
</DetachKeyPairResponse>
```

### JSON format

```
{
  "RequestId": "473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E"
}
```

### Error codes

Error codes specific to this interface are as follows. For more error codes, see the [API error center](#).

| Error code                          | Error message                                                                                 | HTTP status code | Note                                                                                                             |
|-------------------------------------|-----------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------|
| MissingParameter                    | The input parameter "RegionId" that is mandatory for processing this request is not supplied. | 400              | You must specify the parameter RegionId . Or you are not authorized to use the resource in the specified region. |
| DependencyViolation.WindowsInstance | The instance creating is windows, cannot use ssh key pair to login.                           | 403              | SSH key pairs are not supported for Windows instances.                                                           |
| InvalidKeyPairName.NotFound         | The specified KeyPairName does not exist.                                                     | 404              | The specified KeyPairName does not exist.                                                                        |
| InvalidRegionId.NotFound            | The specified RegionId does not exist.                                                        | 404              | The specified RegionId does not exist.                                                                           |

## 12.5 DeleteKeyPairs

Deletes one or more of your SSH key pairs. Once an SSH key pair is deleted, we remove the related entry of the public key from our database. However, the instances that have the SSH key pair attached, can use it normally, and you can still view the instance key pair name in the instance details list.

### Description

When you call this interface, consider the following:

- The SSH key pair cannot be described ([DescribeKeyPairs](#)) any more.

- When you obtain the information about the instances ([DescribeInstances](#)), the key pair name (KeyPairNames) is still returned, but without any information about the SSH key pair.

### Request parameters

| Name         | Type   | Required | Description                                                                                                                                                                                                        |
|--------------|--------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action       | String | Yes      | The name of this interface. Value: DeleteKeyPairs.                                                                                                                                                                 |
| RegionId     | String | Yes      | The ID of the region to which the SSH key pair belongs. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                               |
| KeyPairNames | String | Yes      | The names of key pairs. The value can contain arrays of up to 100 SSH key pairs. The key pair name are displayed in the format of ["key-xxxxxxx", "key-yyyyyyyy", ... "key-zzzzzzzz"] and separated by commas (,). |

### Return parameters

All are common parameters. See [Common parameters](#).

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=DeleteKeyPairs
&RegionId=cn-qingdao
&KeyPairNames=test
&<Common Request Parameters>
```

#### Response example

### XML format

```
<DeleteKeyPairsResponse>
  <RequestId>473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E</RequestId>
</DeleteKeyPairsResponse>
```

### JSON format

```
{
  "RequestId": "473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E"
}
```

### Error codes

Error codes specific to this interface are as follows. For more error codes, see [API Error Center](#).

| Error code                   | Error message                                                                                   | HTTP status code | Meaning                                                                                                          |
|------------------------------|-------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------|
| MissingParameter             | The input parameter RegionId that is mandatory for processing this request is not supplied .    | 400              | You must specify the parameter RegionId . Or you are not authorized to use the resource in the specified region. |
| MissingParameter             | The input parameter KeyPairName that is mandatory for processing this request is not supplied . | 400              | You must specify the KeyPairName parameter.                                                                      |
| InvalidRegionId.<br>NotFound | The specified RegionId does not exist.                                                          | 404              | The specified RegionId does not exist.                                                                           |

## 12.6 DescribeKeyPairs

Describes one or more of your SSH key pairs.

### Request parameters

| Name     | Type   | Required | Description                                                                                                                                           |
|----------|--------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action   | String | Yes      | The name of this interface. Value: DescribeKeyPairs .                                                                                                 |
| RegionId | String | Yes      | The ID of the region to which your SSH key pairs belong. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list. |

| Name               | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------|---------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KeyPairFingerPrint | String  | No       | The fingerprint of the key pair. The public key fingerprint format is defined in RFC4716 and uses the MD5 message digest algorithm. For more information, see <a href="#">RFC4716</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| KeyPairName        | String  | No       | The key pair name. You can use the regular expression and the symbol <code>*</code> for fuzzy string search of a key pair name. Sample patterns: <ul style="list-style-type: none"> <li><code>*SshKey</code>: Matches the string set ending with <code>SshKey</code>, including <code>SshKey</code>.</li> <li><code>SshKey*</code>: Matches the string set beginning with <code>SshKey</code>, including <code>SshKey</code>.</li> <li><code>*SshKey*</code>: Matches the string set with <code>SshKey</code> within, including <code>SshKey</code>.</li> <li><code>SshKey</code>: Matches the string set <code>SshKey</code>.</li> </ul> |
| PageNumber         | Integer | No       | Displays the SSH key pairs on several pages. Start value: 1.<br>Default value: 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| PageSize           | Integer | No       | The maximum entries on a page. Maximum value: 50.<br>Default value: 10.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Tag.n.Key          | String  | Yes      | The key of a tag of which n is from 1 to 20. Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Tag.n.Value        | String  | Yes      | The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                                                                                                                                                                                                                                                                                                                                                                                                                  |

### Response parameters

| Name       | Type    | Description                    |
|------------|---------|--------------------------------|
| TotalCount | Integer | The total number of key pairs. |
| PageNumber | Integer | The current page.              |
| PageSize   | Integer | The maximum entries on a page. |
| RegionId   | String  | The region of the key pair.    |

| Name     | Type                            | Description                                                     |
|----------|---------------------------------|-----------------------------------------------------------------|
| KeyPairs | <a href="#">KeyPairItemType</a> | Information about key pairs, a set composed by KeyPairItemType. |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeKeyPairs
&RegionId=cn-qingdao
&KeyPairFingerPrint=xxxxxxxxxx
&KeyPairName=test
&PageNumber=1
&PageSize=20
&<Common Request Parameters>
```

### Response example

#### XML format

```
<DescribeKeyPairsResponse>
  <PageNumber>1</PageNumber>
  <PageSize>2</PageSize>
  <TotalCount>1</TotalCount>
  <KeyPairs>
    <KeyPair>
      <KeyPairName>test</KeyPairName >
      <KeyPairFingerPrint>xxxxxxxxxx</KeyPairFingerPrint>
    </KeyPair>
  </KeyPairs>
  <RequestId>473469C7-AA6F-4DC5-B3DB-A3DC0DE3C83E</RequestId>
</DescribeKeyPairsResponse>
```

#### JSON format

```
{
  "PageNumber": 1,
  "PageSize": 50,
  "RequestId": "B04B8CF3-4489-432D-83BA-6F128E4F2295",
  "Tags": {
    "Tag": [
      {
        "TagKey": "test",
        "TagValue": "api"
      }
    ]
  },
  "TotalCount": 1
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).



| Error code       | Error message                                                                                 | HTTP status code | Meaning                                        |
|------------------|-----------------------------------------------------------------------------------------------|------------------|------------------------------------------------|
| MissingParameter | The input parameter "RegionId" that is mandatory for processing this request is not supplied. | 400              | The RegionId parameter must be specified.      |
| InvalidParameter | The specified parameter "PageNumber" is not valid.                                            | 400              | The specified PageNumber parameter is invalid. |
| InvalidParameter | The specified parameter "PageSize" is not valid.                                              | 400              | The specified PageSize parameter is invalid.   |

# 13 Networks

## 13.1 AllocatePublicIpAddress

Assigns an Internet IP address to an instance.

### Description

When you call this interface, consider the following:

- Before assigning an Internet IP address, the instance must be in the Running or Stopped status.
- If a VPC-Connected instance has an EIP allocated, you cannot assign an Internet IP address to it
- You can assign only one Internet IP address to the instance. If the instance has an Internet IP address, an error `AllocatedAlready` is returned.
- After you restart the instance ([RebootInstance](#)) or start the instance ([StartInstance](#)), the assigned Internet IP address becomes effective.
- If the specified instance is [locked](#), and the `OperationLocks` of the instance indicates "LockReason": "security", your request is denied.

To assign an Internet IP address to a VPC-Connected instance, you can also allocate an Elastic IP (EIP) to the instance. For more information, see [AssociateEipAddress](#).

### Request parameters

| Name       | Type   | Required | Description                                                               |
|------------|--------|----------|---------------------------------------------------------------------------|
| Action     | String | Yes      | The name of this interface. Value: <code>AllocatePublicIpAddress</code> . |
| InstanceId | String | Yes      | An instance ID that requires an Internet IP address to be assigned.       |

## Response parameters

| Name      | Type   | Description                       |
|-----------|--------|-----------------------------------|
| IpAddress | String | The assigned Internet IP address. |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=AllocatePublicIpAddress
&InstanceId=i-instance1
&<Common Request Parameters>
```

### Response example

#### XML format

```
<AllocatePublicIpAddressResponse>
  <RequestId>F2EF6A3B-E345-46B9-931E-0EA094818567</RequestId>
  <IpAddress>10.1.149.159</IpAddress>
</AllocatePublicIpAddressResponse>
```

#### JSON format

```
"RequestId": "F2EF6A3B-E345-46B9-931E-0EA094818567",
"IpAddress": "10.1.149.159"
```

## Error codes

The following error codes are restricted to this interface. For more error codes, see [API Error Center](#).

| Error code           | Error message                                             | HTTP status code | Meaning                                                                                          |
|----------------------|-----------------------------------------------------------|------------------|--------------------------------------------------------------------------------------------------|
| InsufficientPublicIp | Ip address not found                                      | 400              | No available Internet IP address, please try again later.                                        |
| OperationDenied      | Specified operation is denied as your instance is in VPC. | 400              | The specified VPC-Connected instance has an EIP allocated and cannot be assigned an Internet IP. |

| Error code                 | Error message                                                                                                     | HTTP status code | Meaning                                                                                                                                         |
|----------------------------|-------------------------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| AllocatedAlready           | There is an IpAddress allocated already for the specified instance.                                               | 403              | The instance has an Internet IP address assigned.                                                                                               |
| IncorrectInstanceStatus    | The current status of the resource does not support this operation.                                               | 403              | Before assigning an Internet IP address, the instance must be in the Running or Stopped status.                                                 |
| InstanceExpiredOrInArrears | The specified operation is denied as your prepay instance is expired (prepay mode) or in arrears (afterpay mode). | 403              | The specified <a href="#">Subscription</a> instance has expired or the specified <a href="#">Pay-As-You-Go</a> instance has an overdue payment. |
| InstanceLockedForSecurity  | The specified operation is denied as your instance is locked for security reasons.                                | 403              | The specified instance is <a href="#">locked</a> for security reason, and your request is denied.                                               |
| InvalidInstanceId.NotFound | The specified InstanceId does not exist.                                                                          | 404              | The specified InstanceId does not exist.                                                                                                        |

## 13.2 ConvertNatPublicIpToEip

ConvertNatPublicIpToEip changes the public IP (NatPublicIp) of a Virtual Private Cloud (VPC) connected instance to an Elastic IP (EIP).

### Description

When using this operation, consider the following:

- The network type of the specified instance must be VPC.
- The status of the specified instance must be **Stopped** (Stopped) or **Running** (Running).
- The outbound bandwidth of an ECS instance must be greater than 0 Mbps, in case the ECS instance does not have a public IP NatPublicIp.
- This action fails if you have already bound an EIP to the specified instance.
- This action fails if ongoing configuration changes exist for the specified ECS instance.
- This action fails if the specified instance expires in the next 24 hours.

- Once the public IP `NatPublicIp` is changed to an EIP, you are billed for using the EIP service. For more information, see EIP document [Pay-As-You-Go billing](#).

### Request parameters

| Name       | Type   | Required | Description                                                                                                        |
|------------|--------|----------|--------------------------------------------------------------------------------------------------------------------|
| Action     | String | Yes      | The operation that you want to perform. Value: <code>ConvertNatPublicIpToEip</code> .                              |
| RegionId   | String | Yes      | The region ID. For more information, use the <a href="#">DescribeRegions</a> API to obtain the latest region list. |
| InstanceId | String | Yes      | Identifier of the target ECS instance.                                                                             |

### Response parameters

#### Examples

##### Request example

```
https://ecs.aliyuncs.com/?Action=ConvertNatPublicIpToEip
&RegionId=cn-hangzhou
&InstanceId=i-test
&<Common Request Parameters>
```

##### Response example

##### XML format

```
<ConvertNatPublicIpToEipResponse>
  <RequestId>B154D309-F3E1-4AB7-BA94-FEFC8B89001</RequestId>
</ConvertNatPublicIpToEipResponse>
```

##### JSON format

```
{
  "RequestId": "B154D309-F3E1-4AB7-BA94-FEFC8B89001"
}
```

### Error codes

Error codes specific to this interface are as follows.

| Error code                    | Error message                      | HTTP status code | Description                                           |
|-------------------------------|------------------------------------|------------------|-------------------------------------------------------|
| InvalidRegionId.<br>Malformed | The specified RegionId is invalid. | 400              | The specified RegionId does not exist, or you are not |

| Error code                          | Error message                                                                                                      | HTTP status code | Description                                                                                        |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------|
|                                     |                                                                                                                    |                  | authorized to access the specified region.                                                         |
| InvalidEndTime.<br>Malformed        | The specified instance expires in the next 24 hours.                                                               | 403              | The specified instance expires in the next 24 hours.                                               |
| InvalidInstanceId.<br>PlannedChange | The instance has incomplete changes.                                                                               | 403              | Ongoing configuration changes exist for the specified ECS instance.                                |
| InvalidInstanceStatus.<br>Released  | The specified instance has been released.                                                                          | 403              | The specified instance has been released.                                                          |
| IncorrectInstanceStatus             | The instance status does not support this operation. The instance may be expired, upgrading, starting, or locked.  | 404              | The specified instance must be in the <b>Stopped</b> (Stopped) or <b>Running</b> (Running) status. |
| InstanceTypeNotSupported            | The specified instance is a subscription instance with a specified bandwidth.                                      | 404              | The specified instance is a subscription instance with a specified bandwidth.                      |
| InvalidInstance.<br>ZeroBandwidth   | The public network bandwidth for the specified instance is zero. That is, this instance does not have a public IP. | 404              | The outbound bandwidth of an ECS instance must be greater than 0 Mbps.                             |
| InvalidInstance.<br>NotFound        | The specified instance does not exist, or does not belong to you.                                                  | 404              | The specified instance does not exist or does not belong to you.                                   |
| OperationDenied                     | The network type of the specified instance is not VPC.                                                             | 404              | The specified instance must be VPC-Connected.                                                      |

### 13.3 AttachClassicLinkVpc

Links a classic network instance to the [Virtual Private Cloud \(VPC\)](#), which allows the classic network instance communicating with the resources that are in the intranet of a VPC. For more information, see VPC topic [ClassicLink overview](#).

## Description

When you call this interface, consider the following:

- The instance must be in the **Running** (Running) or **Stopped** (Stopped) status.
- The ClassicLink service must be enabled for the specified VPC. For more information, see VPC topic [Build ClassicLink connection](#).
- The classic network instance and the VPC must be in the same Alibaba Cloud region.

## Request parameters

| Name       | Type   | Required | Description                                                                                                               |
|------------|--------|----------|---------------------------------------------------------------------------------------------------------------------------|
| Action     | String | Yes      | The name of this interface. Value: AttachClassicLinkVpc.                                                                  |
| RegionId   | String | Yes.     | Region ID of the instance. For more information, see <a href="#">DescribeRegions</a> to obtain the latest region list.    |
| InstanceId | String | Yes.     | ID of the classic network instance.<br>You can call <a href="#">DescribeInstances</a> to obtain all of your instance IDs. |
| VpcId      | String | Yes.     | ID of the ClassicLink enabled VPC. You can call DescribeVpcs to obtain all of your VPC IDs.                               |

## Response parameters

All are common response parameters. For more information, see [Common parameter](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=AttachClassicLinkVpc
&RegionId=cn-hangzhou
&InstanceId=i-test
&VpcId=vpc-test
```

&<Common Request Parameters>

### Response example

### XML format

```
<AttachClassicLinkVpcResponse>
  <RequestId>C0003E8B-B930-4F59-ADC0-0E209A9012A8</RequestId>
</AttachClassicLinkVpcResponse>
```

### JSON format

```
"RequestId": "C0003E8B-B930-4F59-ADC0-0E209A9012A8"
```

### Error codes

The following error codes are specific to this interface. For more error codes, visit the [API error center](#).

| Error code                          | Error information                                              | HTTP status code | Description                                                                                     |
|-------------------------------------|----------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------|
| Abs.InvalidInstanceId.<br>MalFormed | The specified instance has already been linked to another VPC. | 400              | The specified instance is already linked to another VPC.                                        |
| InvalidInstanceId.<br>MalFormed     | The specified instance is not a classic network type instance. | 400              | The network type of the specified instance is not a classic network.                            |
| InvalidRegionId.<br>Malformed       | The specified RegionId is invalid.                             | 400              | The specified RegionId does not exist or you are not authorized to access the specified region. |
| InvalidVpcId.<br>Malformed          | The specified VpcId is invalid.                                | 400              | The specified VpcId is invalid.                                                                 |
| InvalidInstanceId.<br>NotBelong     | The user does not own the specified instance.                  | 403              | The specified instance does not belong to you.                                                  |
| InvalidStatus.<br>InstanceLocked    | The specified instance is in another processing list.          | 403              | The specified instance is processing another task.                                              |



| Error code                       | Error information                                         | HTTP status code | Description                                                                                                                                                      |
|----------------------------------|-----------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| InvalidStatus.<br>InstanceStatus | Only the Running or Stopped InstanceStatus is allowed.    | 403              | The specified instance must be in the <b>Running</b> (Running) or <b>Stopped</b> (Stopped) status.                                                               |
| OperationDenied                  | The specified VPC are unable to attach ClassicLink.       | 403              | The specified VPC cannot enable ClassicLink.                                                                                                                     |
| QuotaExceeded                    | The maximum number of links in the specified VPC exceeds. | 403              | The number of available links for the current VPC has reached the upper limit, up to 1000 classic network type instances are allowed to connect to the same VPC. |
| InvalidInstanceId.<br>NotFound   | The specified InstanceId does not exist.                  | 404              | The specified InstanceId does not exist.                                                                                                                         |

## 13.4 DetachClassicLinkVpc

Unlinks a classic network-connected instance from the VPC. For more information, see *VPC* topic [ClassicLink overview](#). After the ClassicLink is disabled, the classic network-connected instance cannot access the VPC.

### Request parameters

| Name     | Type   | Required | Description                                                                                                             |
|----------|--------|----------|-------------------------------------------------------------------------------------------------------------------------|
| Action   | String | Yes      | The name of this interface. Value: DetachClassicLinkVpc.                                                                |
| RegionId | String | Yes      | Region ID of the instance. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list. |

| Name       | Type   | Required | Description                                      |
|------------|--------|----------|--------------------------------------------------|
| InstanceId | String | Yes      | ID of the classic network-connected instance.    |
| VpcId      | String | Yes      | The ID of a VPC to which the instance is linked. |

## Response parameters

All are common response parameters. For more information, see [Common parameters](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DetachClassicLinkVpc
&RegionId=cn-hangzhou
&VpcId=vpc-test
&InstanceId=i-test
&<Common Request Parameters>
```

### Response example

#### XML format

```
<DetachClassicLinkVpcResponse>
  <RequestId>C0003E8B-B930-4F59-ADC0-0E209A9012A8</RequestId>
</DetachClassicLinkVpcResponse>
```

#### JSON format

```
{
  "RequestId": "C0003E8B-B930-4F59-ADC0-0E209A9012A8"
}
```

## Error codes

Error codes specific to this interface are as follows. For more error codes, visit the [API Error Center](#).

| Error code                      | Error message                                                  | HTTP status code | Meaning                                                    |
|---------------------------------|----------------------------------------------------------------|------------------|------------------------------------------------------------|
| InvalidInstanceId.<br>Malformed | The specified instance is not a classic network type instance. | 400              | The specified instance is not of the classic network type. |
| InvalidRegionId.<br>Malformed   | The specified RegionId is invalid.                             | 400              | The specified RegionId does not                            |

| Error code                       | Error message                                          | HTTP status code | Meaning                                                                              |
|----------------------------------|--------------------------------------------------------|------------------|--------------------------------------------------------------------------------------|
|                                  |                                                        |                  | exist. Or you are not authorized to access the specified region.                     |
| InvalidVpcId.<br>Malformed       | The specified VpcId is invalid.                        | 400              | The specified VpcId is invalid.                                                      |
| InvalidInstanceId.<br>NotBelong  | The user does not own the specified instance.          | 403              | The specified instance does not belong to you.                                       |
| InvalidStatus.<br>InstanceLocked | The specified instance is in another process list.     | 403              | The specified instance is processing other procedures.                               |
| InvalidStatus.<br>InstanceStatus | Only the Running or Stopped InstanceStatus is allowed. | 403              | The specified instance must be <b>Running</b> (Running) or <b>Stopped</b> (Stopped). |
| InvalidInstanceId.<br>NotFound   | The specified InstanceId does not exist.               | 404              | The specified InstanceId does not exist.                                             |

## 13.5 DescribeBandwidthLimitation

Describes a list of bandwidth resources.

### Request parameters

| Name         | Type   | Required | Description                                                                                                           |
|--------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------|
| Action       | String | Yes      | The name of this interface. Value : DescribeBandwidthLimitation.                                                      |
| RegionId     | String | Yes      | ID of the target region. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list. |
| InstanceType | String | Yes      | Instance type. For more information, see <a href="#">Instance type</a>                                                |

| Name               | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------|--------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |        |          | <a href="#">families</a> , or call <a href="#">DescribeInstanceTypes</a> to obtain the latest type list.                                                                                                                                                                                                                                                                                                                                              |
| InstanceChargeType | String | No       | Billing method of the instances. For more information, see <a href="#">Pricing overview</a> .<br>Optional values: <ul style="list-style-type: none"> <li>PrePaid: Subscription.</li> <li>PostPaid: Pay-As-You-Go.</li> </ul> Default value: PostPaid.                                                                                                                                                                                                 |
| SpotStrategy       | String | No       | Specifies whether a Pay-As-You-Go instance is a preemptible instance or not. Value range: <ul style="list-style-type: none"> <li>NoSpot: The instance is a Pay-As-You-Go preemptible instance.</li> <li>SpotWithPriceLimit: The instance is a preemptible instance and its price is a spot price.</li> <li>SpotAsPriceGo: The instance is a preemptible instance and its price is the market price.</li> </ul> Default: NoSpot.<br>Only if InstanceCh |

| Name          | Type   | Required | Description                                                                                                                                                                                                                                |
|---------------|--------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               |        |          | argeType is set to PostPaid, SpotStrategy can be valid.                                                                                                                                                                                    |
| OperationType | String | No       | Specifies operation limits of the bandwidth. Optional values: <ul style="list-style-type: none"><li>• Upgrade: Upgrade bandwidth.</li><li>• Downgrade: Downgrade bandwidth.</li><li>• Create: Create bandwidth.</li></ul> Default: Create. |
| ResourceId    | String | No       | Resource ID. If you set OperationType to Upgrade or Downgrade, you must specify the ResourceId.                                                                                                                                            |

### Response parameters

| Name       | Type                                   | Description                      |
|------------|----------------------------------------|----------------------------------|
| Bandwidths | Array of <a href="#">BandwidthType</a> | A collection of bandwidth types. |

### BandwidthType

| Name               | Type   | Description                                                                                                                                                                                  |
|--------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| InternetChargeType | String | Network billing method. Possible values: <ul style="list-style-type: none"><li>• Paybytraffic: The bandwidth fees is charged on an hourly basis according to actual traffic usage.</li></ul> |

| Name | Type    | Description                                                                     |
|------|---------|---------------------------------------------------------------------------------|
| Min  | Integer | Minimum limit of the bandwidth . No value is returned if the parameter is null. |
| Max  | Integer | Maximum limit of the bandwidth. No value is returned if the parameter is null . |
| Unit | Integer | Resource type unit. No value is returned if the parameter is null.              |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeBandwidthLimitation
&RegionId=cn-hangzhou
&<Common Request Parameters>
```

### Response example

### XML format

```
<DescribeBandwidthLimitationResponse>
  <Bandwidths>
    <Bandwidth>
      <InternetChargeType>PayByTraffic</InternetChargeType>
      <Max>100</Max>
      <Min>0</Min>
      <Unit>Mbps</Unit>
    </Bandwidth>
    <Bandwidth>
      <InternetChargeType>PayByTraffic</InternetChargeType>
      <Max>100</Max>
      <Min>0</Min>
      <Unit>Mbps</Unit>
    </Bandwidth>
  </Bandwidths>
  <RequestId>675B6D89-A3EB-4987-BAF3-610591E0D019</RequestId>
</DescribeBandwidthLimitationResponse>
```

### JSON format

```
{
  "Bandwidths": {
    "Bandwidth": [
      {
        "InternetChargeType": "PayByTraffic",
        "Max": 100,
        "Min": 0,
        "Unit": "Mbps"
      }
    ]
  }
}
```

```
    },  
    {  
        "InternetChargeType": "PayByTraffic",  
        "Max": 100,  
        "Min": 0,  
        "Unit": "Mbps"  
    }  
  ],  
  "RequestId": "675B6D89-A3EB-4987-BAF3-610591E0D019",  
}
```

## Error codes

Error codes specific to this interface are as follows. For more error codes, see [API Error Center](#).

| Error code                 | Error message                                  | HTTP status code | Description                                      |
|----------------------------|------------------------------------------------|------------------|--------------------------------------------------|
| Invalid.InstanceChargeType | The specified InstanceChargeType is not valid. | 400              | The specified InstanceChargeType does not exist. |
| InvalidRegionId.NotFound   | The specified RegionId does not exist.         | 404              | The specified RegionId does not exist.           |
| Unavailable.Regions        | The available regions does not exists.         | 404              | The specified RegionId does not have permission. |

## 13.6 DescribeClassicLinkInstances

Describes one or more of your classic network-connected instances that have established ClassicLink with a VPC.

### Description

When you call this interface, consider the following:

- Only applicable to the classic network-connected instances.
- You can query at most 100 instances each time.
- Either the parameter VpcId or InstanceId must be specified.

### Request parameters

| Name   | Type   | Required | Description                        |
|--------|--------|----------|------------------------------------|
| Action | String | Yes      | The name of this interface. Value: |

| Name       | Type    | Required | Description                                                                                                                                                                                                                                    |
|------------|---------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |         |          | DescribeClassicLinkInstances.                                                                                                                                                                                                                  |
| RegionId   | String  | Yes      | The region ID of the instance. You can call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                  |
| InstanceId | String  | No       | The instance ID. It must be classic network-connected instances that are linked to a VPC by using ClassicLink. At most 100 instance IDs can be specified. IDs are separated by commas (.). Sample: InstanceId=i-XXX, i-XXX, i-XXX, i-XXX, .... |
| VpcId      | String  | No       | VPC ID. The <a href="#">ClassicLink</a> service must be enabled for the specified VPC.                                                                                                                                                         |
| PageNumber | Integer | No       | Displays the information of the classic network-connected instances on several pages. Start value: 1. Default value: 1.                                                                                                                        |
| PageSize   | Integer | No       | The number of the classic network-connected instances on each page. Value range: [1, 100]. Default value: 10.                                                                                                                                  |



## Response parameters

| Name       | Type                 | Description                                                                      |
|------------|----------------------|----------------------------------------------------------------------------------|
| TotalCount | Integer              | Total number of ClassicLinks                                                     |
| PageNumber | Integer              | Page number of the connection list                                               |
| PageSize   | Integer              | Number of lines per page set during input                                        |
| Links      | <a href="#">Link</a> | An information set consists of VPC ID and classic network-connected instance ID. |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeClassicLinkInstances
&RegionId=cn-hangzhou
&VpcId=vpc-test
&InstanceId=i-test, i-test1
&<Common Request Parameters>
```

### Response example

#### XML format

```
<DescribeClassicLinkInstancesResponse>
  <RequestId>B154D309-F3E1-4AB7-BA94-FEFC8B89001</RequestId>
  <TotalCount>2</TotalCount>
  <PageNumber>1</PageNumber>
  <PageSize>10</PageSize>
  <Links>
    <Link>
      <InstanceId>i-test</InstanceId>
      <VpcId>vpc-test</VpcId>
    </Link>
    <Link>
      <InstanceId>i-test1</InstanceId>
      <VpcId>vpc-test</VpcId>
    </Link>
  </Links>
</DescribeClassicLinkInstancesResponse>
```

#### JSON format

```
"PageNumber":1,
"Links":{
  "Link":[{
    "InstanceId":"i-test",
    "VpcId":"vpc-test"
```

```

      "InstanceId": "i-test1",
      "VpcId": "vpc-test"

      "TotalCount":2,
      "PageSize":10,
      "RequestId":"B154D309-F3E1-4AB7-BA94-FEFC8B89001"

```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                                         | Error message                                            | HTTP status code | Meaning                                                                                        |
|----------------------------------------------------|----------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------|
| InvalidRegionId.<br>Malformed                      | The specified RegionId is invalid.                       | 400              | The specified RegionId does not exist. Or you are unauthorized to access the specified region. |
| InvalidInstanceId.<br>NotBelong                    | The user does not own the specified instance.            | 403              | The specified instance does not belong to you.                                                 |
| InvalidParameter.<br>InvalidInstanceIdAnd<br>VpcId | Either InstanceId or VpcId must be specified.            | 403              | Either InstanceId or VpcId must be specified.                                                  |
| InvalidParameter.<br>TooManyInstanceIds            | The maximum number of specified InstanceIds is exceeded. | 403              | The number of InstanceId must be less than 100.                                                |
| InvalidVpc.NotBelong                               | The user do not own the specified VPC.                   | 403              | The specified VPC does not belong to you .                                                     |
| InvalidInstanceId.<br>NotFound                     | The specified InstanceId does not exist.                 | 404              | The specified InstanceId does not exist.                                                       |

## 13.7 ModifyInstanceNetworkSpec

Modifies the bandwidth configuration of your Instance. If the network specification of your ECS instance is not suitable for your business scale, you can change the bandwidth configuration accordingly.

### Description

When you call this interface, consider the following:

- When you change the bandwidth configuration of a **Subscription** (PrePaid) instance, consider the following:
  - The configuration of bandwidth that is **PayByTraffic** (Pay By Traffic) can be upgraded or downgraded.
  - The instance has an Internet IP allocated when the **InternetMaxBandwidthOut** ( `InternetMaxBandwidthOut`) is upgraded from 0 Mbps.
- When you change the bandwidth configuration of a **Pay-As-You-Go** (Pay-As-You-Go) instance, consider the following:
  - The bandwidth configuration can be upgraded or downgraded.
  - The instance has no Internet IP allocated when the **InternetMaxBandwidthOut** ( `InternetMaxBandwidthOut`) is upgraded from zero Mbps. However, you can call [AllocatePublicIpAddress](#) to allocate Internet IP address for the instance.
- For classic type instances, when **InternetMaxBandwidthOut**(`InternetMaxBandwidthOut`) is upgraded from 0 Mbps, the instance must be in the **Stopped** (Stopped) status.
- Before going ahead with an upgrade, you must make sure that you have registered a valid credit card, once you upgrade the bandwidth configuration, auto-payment is initiated. If the payment is unsuccessful, an abnormal order is returned and can only be nullified.

If your account balance is insufficient, you can set the parameter `AutoPay` to `false` to cancel the automatic payment. Thus, an unpaid order is returned and you can complete the order by making the payment in the [ECS console](#).

- The bandwidth cannot be changed again within five minutes after the action is performed.
- The bandwidth of a Subscription instance can only be downgraded three times.

**Request parameters**

| Name                    | Type    | Required | Description                                                                                                                                                                                                                                                             |
|-------------------------|---------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action                  | String  | Yes      | The name of this interface. Value: ModifyInstanceNetworkSpec.                                                                                                                                                                                                           |
| InstanceId              | String  | Yes      | ID of the instance.                                                                                                                                                                                                                                                     |
| InternetMaxBandwidthOut | Integer | No       | Maximum value of public network outbound bandwidth ; unit: Mbps (Megabit per second). Value range: [1, 100].                                                                                                                                                            |
| InternetMaxBandwidthIn  | Integer | No       | The maximum inbound bandwidth from the Internet, measured in Mbps. Value range: [1, 100].                                                                                                                                                                               |
| NetworkChargeType       | String  | No       | The billing method of the bandwidth.<br>Optional values: <ul style="list-style-type: none"><li>PayByTraffic: The bandwidth is billed by the sum of network traffic.</li></ul>                                                                                           |
| Autopay                 | Boolean | No       | Whether or not automatic payment is enabled. Optional values: <ul style="list-style-type: none"><li>true: The payment goes through automatically after you upgrade the bandwidth configuration. However, before that, you must make sure that your registered</li></ul> |

| Name | Type | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------|------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |      |          | <p>credit card is valid and does not have credit limit set. Moreover, if you choose PayPal, you must maintain sufficient balance in your account. If the auto payment attempt is unsuccessful, an abnormal order returns and can only be nullified. However, before you set Autopay to True you must make sure that your registered credit card is valid and does not have credit limit set. Moreover, if you choose PayPal, you must maintain sufficient balance in your account.</p> <ul style="list-style-type: none"><li>• false: The payment does not go through automatically, once you upgrade the bandwidth configuration. When your registered credit card is invalid or you have insufficient balance in your PayPal account, you can set the AutoPay</li></ul> |

| Name        | Type   | Required | Description                                                                                                                                                                                                                              |
|-------------|--------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             |        |          | parameter to false to cancel the auto-payment option. This results into an unpaid order and you can complete the order <a href="#">ECS console</a> .<br>Default value: True.                                                             |
| ClientToken | String | No       | Guarantees the idempotence of the request. The value is generated by a client. It must be unique among all requests and contains a maximum of 64 ASCII characters. For more information, see <a href="#">How to ensure idempotence</a> . |

### Response parameters

| Name      | Type   | Description            |
|-----------|--------|------------------------|
| RequestId | String | The ID of the request. |
| OrderId   | Long   | Order ID.              |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=ModifyInstanceNetworkSpec
&RegionId=cn-hangzhou
&InstanceId=i-xxxxx1
&InternetMaxBandwidthOut=10
&ClientToken=xxxxxxxxxxxxxx
&<Common Request Parameters>
```

#### Response sample

#### XML format

```
<ModifyInstanceNetworkSpecResponse>
```

```
<RequestId>04F0F334-1335-436C-A1D7-6C044FE73368</RequestId>
</ModifyInstanceNetworkSpecResponse>
```

### JSON format

```
{
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FE73368"
}
```

### Error codes

Error codes specific to this interface are as follows. For more error codes, visit [API Error Center](#).

| Error code                                               | Error message                                                                                   | HTTP status code | Description                                                   |
|----------------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------|
| Account.Arrearage                                        | Your account has an outstanding payment.                                                        | 400              | Your account has an overdue payment.                          |
| DecreasedB<br>andWidthNotAllowed                         | A higher bandwidth than the current one is required.                                            | 400              | The new bandwidth cannot be less than the existing bandwidth. |
| InvalidInstance.<br>UnpaidOrder                          | The specified instance has unpaid order.                                                        | 400              | The current instance has unpaid orders.                       |
| InvalidInstanceStatus.<br>NotStopped                     | The specified Instance status is not Stopped.                                                   | 400              | The instance is not in a Stopped status.                      |
| InvalidInternetCharg<br>eType.ValueNotSu<br>pported      | The specified InternetChargeType is invalid.                                                    | 400              | The specified InternetCh<br>argeType does not exist.          |
| InvalidInternetMaxBa<br>ndwidthIn.ValueNotSu<br>pported  | The specified InternetMaxBandwidthIn is beyond the permitted range.                             | 400              | The value range of InternetMa<br>xBandwidthIn is [1, 200].    |
| InvalidInternetMaxBa<br>ndwidthOut.<br>ValueNotSupported | The specified InternetMaxBandwidthOut is beyond the permitted range.                            | 400              | The value range of InternetMa<br>xBandwidthOut is [0, 100].   |
| MissingParameter                                         | The input parameter "Instanceld" that is mandatory for processing this request is not supplied. | 400              | You must specify the InstanceId.                              |

| Error code                                | Error message                                                                                                     | HTTP status code | Description                                                                                         |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------|
| OperationDenied                           | Specified instance is in VPC.                                                                                     | 400              | A VPC instance does not support this operation.                                                     |
| ChargeTypeViolation                       | The operation is not permitted due to billing method of the instance.                                             | 403              | The billing method of the instance does not support this operation.                                 |
| IncorrectInstanceStatus                   | The current status of the instance does not support this operation.                                               | 403              | The status of the instance does not support this operation.                                         |
| InstanceExpiredOrInArrears                | The specified operation is denied as your prepay instance is expired (prepay mode) or in arrears (afterpay mode). | 403              | Your subscription ECS instance has expired . Or your Pay-As-You-Go instance has an overdue payment. |
| InstanceLockedForSecurity                 | The specified operation is denied as your instance is locked for security reasons.                                | 403              | The instance is <i>locked</i> for security reasons.                                                 |
| InvalidAccountStatus.<br>NotEnoughBalance | Your account does not have enough balance.                                                                        | 403              | Your registered credit card is invalid or you have insufficient balance in your PayPal account.     |
| OperationDenied                           | The operation is denied due to the instance is PrePaid.                                                           | 403              | The operation is denied for a Subscription instance.                                                |
| InvalidInstanceId.<br>NotFound            | The specified InstanceId does not exist.                                                                          | 404              | The specified InstanceIds does not exist.                                                           |
| InternalError                             | The request processing has failed due to some unknown error, exception or failure.                                | 500              | Internal error. Try again later.                                                                    |



## 14 Elastic network interfaces

### 14.1 CreateNetworkInterface

Creates an Elastic Network Interface (ENI).

#### Description

- The default status of a new ENI is **Available** (Available).
- An ENI can be only attached to the VPC-Connected instance that is in the same zone of the ENI.
- Because an ENI can be only attached to one instance, you must detach the ENI from the instance before you attach it to another instance.
- The properties of the ENI are not changed whatever instance the ENI is attached. Moreover , network traffic is redirected to the new instance if the instance to which the ENI is attached changes.
- By default, one account can own up to 100 ENIs in one region. For a higher quota, open a [ticket](#).

#### Request parameters

| Name                 | Type   | Required | Description                                                                                                                                                                                   |
|----------------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action               | String | Yes      | The name of this interface. Value: CreateNetworkInterface                                                                                                                                     |
| RegionId             | String | Yes      | ID of the region of the instance. ID of the region in which the instance is located. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.             |
| VSwitchId            | String | Yes      | VSwitch ID of the specified VPC. Specifies the switch ID for the VPC.                                                                                                                         |
| SecurityGroupId      | String | Yes      | The ID of the security group that the ENI joins. The security group and the ENI must be in a same VPC.                                                                                        |
| PrimaryIpAddress     | String | No       | The primary private IP address of the ENI. The specified IP address must have the same Host ID as the VSwitch. If no IP addresses are specified, a random network ID is assigned for the ENI. |
| NetworkInterfaceName | String | No       | Name of your ENI.                                                                                                                                                                             |

| Name        | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             |        |          | <ul style="list-style-type: none"> <li>It is a string of [2, 128] Chinese or English characters. It must begin with a letter and can contain numbers, underscores (_), colons (:), or hyphens (-).</li> <li>The ENI name is displayed in the console.</li> <li>It cannot begin with http:// or https://.</li> <li>If this parameter is not specified, its name is null by default.</li> </ul> |
| Description | String | No       | <p>Description of your ENI.</p> <ul style="list-style-type: none"> <li>It is a string of [2, 256] English or Chinese characters.</li> <li>It cannot begin with http:// or https://.</li> <li>If this parameter is not specified, it is null by default.</li> </ul>                                                                                                                            |
| Tag.n.Key   | String | Yes      | The key of a tag of which n is from 1 to 20. Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                                                                                                                                                                               |
| Tag.n.Value | String | Yes      | The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".                                                                                                                                                                      |
| ClientToken | String | No       | Guarantees the idempotence of the request. The value is generated by the client. It must be unique among all requests and can contains a maximum of 64 ASCII characters. For more information, see <a href="#">How to ensure idempotence</a> .                                                                                                                                                |

### Response parameters

| Name               | Type   | Description                   |
|--------------------|--------|-------------------------------|
| NetworkInterfaceId | String | ID of your Network Interface. |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=CreateNetworkInterface
```

```
&RegionId=cn-hangzhou
&VSwitchId=[vswitchid]
&SecurityGroupId=sg-c0003exxxxx
&<Common Request Parameters>
```

### Response example

#### XML format

```
<CreateNetworkInterfaceResponse>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FExxxxx</RequestId>
  <NetworkInterfaceId>eni-eniIxxxxx</NetworkInterfaceId>
</CreateNetworkInterfaceResponse>
```

#### JSON format

```
{
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FExxxxx",
  "NetworkInterfaceId": "eni-enixxxxx"
}
```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                  | Error message                                                                      | HTTP status code | Meaning                                                                                          |
|-----------------------------|------------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------------------------|
| MissingParameter            | The input parameter that is mandatory for processing this request is not supplied. | 400              | You must specify the required parameter.                                                         |
| UnsupportedParameter        | The parameters is unsupported.                                                     | 400              | The specified parameter does not exist. Alternatively, the specified parameter is not supported. |
| Abs.InvalidAccount.NotFound | The Account is not found or AK is expired.                                         | 403              | The specified Alibaba Cloud account does not exist. Alternatively, your AccessKey expired.       |
| Forbidden.NotSupportRAM     | This action does not support accessed by RAM mode.                                 | 403              | A RAM User is limited to access the resource .                                                   |
| Forbidden.SubUser           | The specified action is not available for you.                                     | 403              | A RAM User is limited to access the resource .                                                   |

| Error code                                 | Error message                                                                                | HTTP status code | Meaning                                                                    |
|--------------------------------------------|----------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------|
| InvalidOperation. availabilityzonemismatch | The VPC VSwitch of the specified ENI and ECS instance are not in the same availability zone. | 403              | The specified VSwitchId, ENI, and InstanceId are not in the same zone.     |
| InvalidOperation. VpcMismatch              | The VPC of the specified ENI and security group are not in the same VPC.                     | 403              | The specified ENI and SecurityGroupId are not in the same VPC.             |
| InvalidSecurityGroupId. NotVpc             | The specified securitygroupid not in VPC.                                                    | 403              | The specified SecurityGroupId is not in a VPC.                             |
| MaxEniCountExceeded                        | The number of ENI exceeds the limit per region.                                              | 403              | The maximum number of ENI in the specified region is exceeded.             |
| SecurityGroupInstanceLimitExceeded         | The maximum number of instances in a security group is exceeded.                             | 403              | The maximum number of instance in the specified SecurityGroup is exceeded. |
| InvalidEcsId. NotFound                     | The specified EcsId is not found.                                                            | 404              | The specified InstanceId does not exist.                                   |
| InvalidSecurityGroupId. NotFound           | The specified SecurityGroupId is not found.                                                  | 404              | The specified SecurityGroupId does not exist.                              |
| InvalidVSwitchId. NotFound                 | The specified VSwitchId is not found.                                                        | 404              | The specified VSwitchId does not exist.                                    |

## 14.2 AssignPrivateAddresses

This API allows you to assign one or more secondary private IP addresses to an ENI. Specifically, you can set a private IP addresses within the CIDR block of the VSwitch to which an ENI belongs. Alternatively, you can specify the number of private IP addresses for ECS to assign them automatically.

### Description

- This API applies only to ENIs in the **Available** (Available) or **Bound** (InUse) status.

- For primary ENIs, the relevant instance must be in the **Running** (Running) or **Stopped** (Stopped) status.
- When an ENI is in the **Available** (Available) status, you can assign up to 10 secondary private IP addresses to the ENI. However, once an ENI is attached to an instance, the quota of private IP addresses for the ENI is limited by the instance type. For more information, see [Instance type families](#).

### Request parameters

| Parameter                      | Type    | Required or not | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------|---------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action                         | String  | Yes             | A parameter required by the system. Value: AssignPrivateIpAddresses.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| RegionId                       | String  | Yes             | The region ID of an ENI. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| NetworkInterfaceId             | String  | Yes             | ENI ID.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| PrivateIpAddress.N             | Array   | No              | Select one or more secondary private IP addresses from the CIDR block of the VSwitch to which an ENI belongs. Value range of N: <ul style="list-style-type: none"><li>• When an ENI is in the <b>Available</b> (Available) status: [1, 10].</li><li>• When an ENI is in the <b>Bound</b> (InUse) status: Limited by instance types. For more information, see <a href="#">Instance type families</a>.</li></ul> To assign a secondary private IP address, you can either specify the parameter PrivateIpAddress.N or the parameter SecondaryPrivateIpAddressCount. |
| SecondaryPrivateIpAddressCount | Integer | No              | You can specify the number of private IP addresses for ECS to assign them automatically.                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

### Response parameters

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=AssignPrivateIpAddresses
&NetworkInterfaceId=eni-m5e709m1ytxc4wx7wXXX
```

```
&PrivateIpAddress. 1=192.168.0.1
&PrivateIpAddress. 2=192.168.10.1
&<Common request parameters>
```

## Response examples

### In XML format

```
<AssignPrivateIpAddressesResponse>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FE70008</RequestId>
</AssignPrivateIpAddressesResponse>
```

### In JSON format

```
{
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FE70008"
}
```

## Error codes

Error codes specific to this interface are as follows.

| Error code                           | Error message                                                                                                   | HTTP status code | Description                                                              |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------|
| InvalidParameter                     | the parameter(s) "{0}" provided is(are ) invalid.                                                               | 400              | The specified parameter is invalid.                                      |
| MissingParameter                     | The input parameter "{0}" that is mandatory for processing this request is not supplied.                        | 400              | You must specify this required parameters.                               |
| InvalidOperation.<br>InvalidEniState | The operation is not allowed in the current ENI state. Expecting status is "{0}" while current status is "{1}". | 400              | This operation only supports ENIs in the Available or InUse status.      |
| InvalidIp.<br>IpUnassigned           | The specified IP "{0}" is not assigned on this ENI.                                                             | 403              | The specified secondary private IP address was not assigned to this ENI. |
| InvalidVSwitchId.<br>IpInvalid       | The specified IpAddress "{0}" is not valid in VSwitch CIDR block "{1}".                                         | 403              | You must select secondary IP addresses from the VSwitch's CIDR block.    |
| Operation.Conflict                   | ecs task is conflicted.                                                                                         | 403              | The specified ENI is processing another task. Please try again later.    |

| Error code                | Error message                               | HTTP status code | Description                                      |
|---------------------------|---------------------------------------------|------------------|--------------------------------------------------|
| InvalidEniId.NotFound     | The specified EniId "{0}" is not found.     | 404              | The specified NetworkInterfaceId does not exist. |
| InvalidVSwitchId.NotFound | The specified VSwitchId "{0}" is not found. | 404              | The specified VSwitch does not exist.            |

## 14.3 UnassignPrivateAddresses

This API allows you to delete one or more secondary private IP addresses from an Elastic Network Interface (ENI).

### Description

- This API applies only to ENIs in the **Available** (Available) or **Bound** (InUse) status.
- For primary ENIs, the relevant instance must be in the **Running** (Running) or **Stopped** (Stopped) status.

### Request parameters

| Parameter          | Type   | Required or not? | Description                                                                                                                                                                                                                                                                        |
|--------------------|--------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action             | String | Yes              | The name of this interface. Value: UnassignPrivateAddresses.                                                                                                                                                                                                                       |
| RegionId           | String | Yes              | The region ID of an ENI. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                              |
| NetworkInterfaceId | String | Yes              | ENI ID.                                                                                                                                                                                                                                                                            |
| PrivateIpAddress.N | Array  | Yes              | One or more secondary private IP addresses to be deleted. The value range of N: <ul style="list-style-type: none"> <li>An ENI is in the <b>Available</b> (Available) status: [1, 10].</li> <li>An ENI is in the <b>Bound</b> (InUse) status: limited by instance types.</li> </ul> |

## Response parameters

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=UnassignPrivateIpAddresses
&NetworkInterfaceId=eni-m5e709m1ytxc4wx7wXXX
&PrivateIpAddress.1=192.168.0.1
&PrivateIpAddress.2=192.168.10.1
&<Common Request Parameters>
```

#### Response example

##### In XML format

```
<UnassignPrivateIpAddressesResponse>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FE70008</RequestId>
</UnassignPrivateIpAddressesResponse>
```

##### In JSON format

```
{
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FE70008"
}
```

## Error code

Error codes specific to this interface are as follows.

| Error code                           | Error message                                                                                         | HTTP status code | Description                                                                                                      |
|--------------------------------------|-------------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------|
| InvalidParameter                     | the parameter(s) provided is(are) invalid.                                                            | 400              | The specified parameter is invalid.                                                                              |
| MissingParameter                     | The input parameter that is mandatory for processing this request is not supplied.                    | 400              | Required parameters must be specified.                                                                           |
| InvalidOperation.<br>InvalidEniState | The operation is not allowed in the current ENI state. Expecting status is , while current status is. | 400              | This operation can only be performed on ENIs in the <b>Available</b> (Available) or <b>Bound</b> (InUse) status. |
| InvalidIp.<br>IpUnassigned           | The specified IP is not assigned on this ENI.                                                         | 403              | The specified secondary private IP address is not assigned to this ENI.                                          |



| Error code                     | Error message                                               | HTTP status code | Description                                                           |
|--------------------------------|-------------------------------------------------------------|------------------|-----------------------------------------------------------------------|
| InvalidVSwitchId.<br>IpInvalid | The specified IpAddress is not valid in VSwitch CIDR block. | 403              | You must select secondary IP addresses from the VSwitch's CIDR block. |
| Operation.Conflict             | ecs task is conflicted.                                     | 403              | The specified ENI is processing another task. Please try again later. |
| InvalidEniId.<br>NotFound      | The specified EniId is not found.                           | 404              | The specified NetworkInterfaceId does not exist.                      |
| InvalidVSwitchId.<br>NotFound  | The specified VSwitchId is not found.                       | 404              | The specified VSwitch does not exist.                                 |

## 14.4 DetachNetworkInterface

Detaches an ENI from your instance.

### Description

- You cannot detach the primary network interface of an instance.
- The ENI must be in the **Detaching** (Detaching) or **In Use** (InUse) status.
- The instance must be in **Running** (Running) or **Stopped** (Stopped) status.

### Request parameters

| Name               | Type   | Required | Description                                                                                                                        |
|--------------------|--------|----------|------------------------------------------------------------------------------------------------------------------------------------|
| Action             | String | Yes      | The name of this interface. Value: DetachNetworkInterface                                                                          |
| RegionId           | String | Yes      | ID of the region of the ECS instance. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list. |
| NetworkInterfaceId | String | Yes      | ENI ID.                                                                                                                            |
| InstanceId         | String | Yes      | Instance ID.                                                                                                                       |

## Response parameters

All are common response parameters. See [Common response parameters](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DetachNetworkInterface
&RegionId=cn-hangzhou
&NetworkInterfaceId=[networkInterfaceId]
&InstanceId=AY121018033933eaxxxxx
&<Common Request Parameters>
```

### Response example

#### XML format

```
<DetachNetworkInterfaceResponse>
  <RequestId>04F0F334-1335-436C-A1D7-6C044FExxxxx</RequestId>
</DetachNetworkInterfaceResponse>
```

#### JSON format

```
{
  "RequestId": "04F0F334-1335-436C-A1D7-6C044FExxxxx",
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                                          | Error message                                           | HTTP status code | Description                                                                                      |
|-----------------------------------------------------|---------------------------------------------------------|------------------|--------------------------------------------------------------------------------------------------|
| Unsupporte<br>dParameter                            | The parameters is unsupported.                          | 400              | The specified parameter does not exist. Alternatively, the specified parameter is not supported. |
| InvalidOperation.<br>InvalidEcsState                | The operation is not allowed in the current ECS state.  | 400              | The specified action failed due to the status of the instance.                                   |
| InvalidOperation<br>.DetachPrim<br>aryEniNotAllowed | Detaching primary ENI from ECS instance is not allowed. | 400              | You cannot detach the primary network interface from an ECS instance.                            |

| Error code                      | Error message                                                                          | HTTP status code | Description                                                                                |
|---------------------------------|----------------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------------------|
| MissingParameter                | The input parameter that is mandatory for processing this request is not supplied.     | 400              | You must specify the required parameter.                                                   |
| Forbidden.SubUser               | The specified action is not available for you.                                         | 403              | Ram users are not allowed to perform this operation.                                       |
| Abs.InvalidAccount.NotFound     | The Account is not found or AK is expired.                                             | 403              | The specified Alibaba Cloud account does not exist. Alternatively, your AccessKey expires. |
| Forbidden.NotSupportRAM         | This action does not support accessed by RAM mode.                                     | 403              | Ram users are not allowed to perform this operation.                                       |
| EniPerInstanceLimitExceeded     | The number of ENI exceeds the limit for the type of instance you are trying to launch. | 403              | The maximum number of ENI in the specified region is exceeded.                             |
| InvalidOperation.InvalidEniType | The operation is not allowed in the current ENI type.                                  | 403              | The specified action failed due to the type of the ENI.                                    |
| InvalidEcsId.NotFound           | The specified EcsId is not found.                                                      | 404              | The specified instance Id does not exist.                                                  |

## 14.5 DescribeNetworkInterfaces

Describes the list of elastic network interfaces (ENI).

### Description

- You can filter the results by specifying the parameters.
- If no parameter is specified, a list containing all ENIs is returned.
- You can view a maximum of 100 ENIs at a time.

### Request parameters

| Name   | Type   | Required | Description                                                  |
|--------|--------|----------|--------------------------------------------------------------|
| Action | String | Yes      | The name of this interface. Value: DescribeNetworkInterfaces |

| Name                 | Type    | Required | Description                                                                                                                                                                                                              |
|----------------------|---------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RegionId             | String  | Yes      | Region ID. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                  |
| VSwitchId            | String  | No       | Virtual Switch ID for the VPC.                                                                                                                                                                                           |
| PrimaryIpAddress     | String  | No       | The primary private IP address of the ENI.                                                                                                                                                                               |
| SecurityGroupId      | String  | No       | Security group ID.                                                                                                                                                                                                       |
| NetworkInterfaceName | String  | No       | ENI name.                                                                                                                                                                                                                |
| Type                 | String  | No       | ENI type. Value range: <ul style="list-style-type: none"> <li>Primary</li> <li>Secondary</li> </ul>                                                                                                                      |
| InstanceId           | String  | No       | ID of the instance currently associated with the ENI.                                                                                                                                                                    |
| NetworkInterfaceId.N | String  | No       | ENI ID. You can view a maximum of 100 ENIs at a time.                                                                                                                                                                    |
| PageNumber           | Integer | No       | Page number of the query result. The value is a positive integer.<br>Default value: 1.                                                                                                                                   |
| PageSize             | Integer | No       | Page size of the query result. Value range: [1, 100].<br>Default value: 10.                                                                                                                                              |
| Tag.n.Key            | String  | Yes      | The key of a tag of which n is from 1 to 20. Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".          |
| Tag.n.Value          | String  | Yes      | The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://". |

### Response parameters

| Name                | Type                                | Description                           |
|---------------------|-------------------------------------|---------------------------------------|
| NetworkInterfaceSet | <a href="#">NetworkInterfaceSet</a> | Information about a network interface |
| TotalCount          | Integer                             | Total number of instances             |
| PageNumber          | Integer                             | Page number of the instance list      |

| Name     | Type    | Description                               |
|----------|---------|-------------------------------------------|
| PageSize | Integer | Number of lines per page set during input |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeNetworkInterfaces
&RegionId=cn-hangzhou
&<Common Request Parameters>
```

### Response example

### XML format

```
<DescribeNetworkInterfacesResponse>
  <NetworkInterfaceSets>
    <NetworkInterfaceSet>
      <AssociatedPublicIp />
      <CreationTime>2017-11-24T06:14:22Z</CreationTime>
      <InstanceId>AY121018033933eaxxxxx</InstanceId>
      <MacAddress>00:16:3e:0f:XX:XX</MacAddress>
      <NetworkInterfaceId>eni-bp17pdijfczaxZZZZxxxxx</NetworkInt
erfaceId>
      XXX.XXX.xx.xx
      <PrivateIpSets>
        <PrivateIpSet>
          <AssociatedPublicIp />
          <Primary>true</Primary>
          <PrivateIpAddress>XXX.XXX.XX.XX</PrivateIpAddress>
        </PrivateIpSet>
      </PrivateIpSets>
      <SecurityGroupIds>
        <SecurityGroupId>sg-bp144yr32sx6ndwxxxxx</SecurityGr
oupId>
      </SecurityGroupIds>
      <Status>Available</Status>
      <Type>Secondary</Type>
      <VpcId>vpc-bp1j7w3gc1cexjqdxxxxx</VpcId>
      <VSwitchId>vsw-bp16usj2p27htro3xxxxx</VSwitchId>
      <ZoneId>cn-hangzhou-e</ZoneId>
    </NetworkInterfaceSet>
  </NetworkInterfaceSets>
  <PageNumber>1</PageNumber>
  <PageSize>100</PageSize>
  <RequestId>CEE5C347-0B64-4535-A061-95BE95Axxxxx</RequestId>
  <TotalCount>1</TotalCount>
</DescribeNetworkInterfacesResponse>
```

### JSON format

```
{
  "NetworkInterfaceSets": {
    "NetworkInterfaceSet": [
      {
        "AssociatedPublicIp": {
```

```

    "CreationTime": "2017-11-24T06:14:22Z",
    "InstanceId": "AY121018033933eaxxxxx",
    "MacAddress": "00:16:3e:0f:XX:XX",
    "NetworkInterfaceId": "eni-bp17pdijfczaxZZZxxxxx",
    "PrivateIpAddress": "XXX.XXX.XX.XX",
    "PrivateIpSets": {
      "PrivateIpSet": [
        {
          "AssociatedPublicIp": {
          },
          "Primary": true,
          "PrivateIpAddress": "XXX.XXX.XX.XX"
        }
      ]
    },
    "SecurityGroupIds": {
      "SecurityGroupId": [
        "sg-bp144yr32sx6ndwxxxxx"
      ]
    },
    "Status": "Available",
    "Type": "Secondary",
    "VpcId": "vpc-bp1j7w3gc1cexjqdxxxxx",
    "VSwitchId": "vsw-bp16usj2p27htro3xxxxx",
    "ZoneId": "cn-hangzhou-e"
  }
]
},
"PageNumber": 1,
"PageSize": 100,
"RequestId": "CEE5C347-0B64-4535-A061-95BE95Axxxxx",
"TotalCount": 1
}

```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                  | Error message                              | HTTP status code | Description                                                                                      |
|-----------------------------|--------------------------------------------|------------------|--------------------------------------------------------------------------------------------------|
| Abs.InvalidAccount.NotFound | The Account is not found or AK is expired. | 403              | The specified Alibaba Cloud account does not exist. Alternatively, your AccessKey expired.       |
| UnsupportedParameter        | The parameters is unsupported.             | 400              | The specified parameter does not exist. Alternatively, the specified parameter is not supported. |

| Error code                                | Error message                                                                                | HTTP status code | Description                                                                              |
|-------------------------------------------|----------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------|
| MissingParameter                          | The input parameter that is mandatory for processing this request is not supplied.           | 400              | You must specify the required parameter.                                                 |
| InvalidEcsId.NotFound                     | The specified EcsId is not found.                                                            | 404              | The specified instance ID does not exist.                                                |
| InvalidVSwitchId.NotFound                 | The specified VSwitchId is not found.                                                        | 404              | The specified VSwitch ID does not exist.                                                 |
| InvalidSecurityGroupId.NotFound           | The specified SecurityGroupId is not found.                                                  | 404              | The specified security group ID does not exist.                                          |
| InvalidOperation.AvailabilityZoneMismatch | The VPC VSwitch of the specified ENI and ECS instance are not in the same availability zone. | 403              | The specified VPC VSwitch ID, ENI and instance ID are not in the same availability zone. |
| InvalidOperation.VpcMismatch              | The VPC of the specified ENI and security group are not in the same VPC.                     | 403              | The specified ENI and security group ID are not in the same VPC.                         |
| InvalidSecurityGroupId.NotVpc             | The specified SecurityGroupId not in VPC.                                                    | 403              | The specified security group ID is not of Type VPC.                                      |

# 15 System event

## 15.1 DescribeInstancesFullStatus

Describes the full status information of the specified instance. The full status information includes the instance status and the instance event status, while the instance status is the life cycle status of the instance and the instance event is the health status of the maintenance event. For more details, see instance life cycle, and instance system events.

### Description

After you call the interface, information including the status of the scheduled events (Scheduled) and the status of the specified instance is returned.

If a period is specified, all the events in the period are queried.

### Request parameters

| Name         | Type   | Required | Description                                                                                                                                                                                                                                             |
|--------------|--------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action       | String | Yes      | The name of this interface. Value: DescribeInstancesFullStatus.                                                                                                                                                                                         |
| RegionId     | String | Yes      | ID of the region where the instance belongs. For more information, see Regions and zones, or call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                     |
| InstanceId.N | String | No       | Instance ID. Value range of N: [1, 100]. For example, InstanceId. 1="i-instance1", 2="i-instance2".....                                                                                                                                                 |
| EventId.N    | String | No       | Event ID. Value range of N: [1, 100]. For example, EventId. 1="e-xhskHun1256xxxx", EventId. 2="e-xhskHun1257xxxx".....                                                                                                                                  |
| Status       | String | No       | Lifecycle status of the instance. Optional values: <ul style="list-style-type: none"><li>Starting</li><li>Running</li><li>Stopped</li></ul>                                                                                                             |
| HealthStatus | String | No       | Health status of the instance. Optional values: <ul style="list-style-type: none"><li>Impaired: The instance performance is damaged.</li><li>Warning: The performance of instance may be degraded because of maintenance or technical issues.</li></ul> |



| Name                | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------|--------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     |        |          | <ul style="list-style-type: none"> <li>Maintaining: The instance is in maintenance.</li> <li>Initializing: The instance is in initialization.</li> <li>InsufficientData: The event details cannot be determined because of insufficient data.</li> <li>NotApplicable: Not applicable.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| InstanceEventType.N | String | No       | <p>One or more instance event types. Value range of N: [1, 30], the events must be displayed in the similar format of InstanceEventType.1="Reboot", InstanceEventType.2="SystemFailure.Reboot"...</p> <p>Optional values: SystemMaintenance.Reboot: The instance restarts because of maintenance. SystemFailure.Reboot: The instance restarts due to a system failure. InstanceFailure.Reboot: The instance restarts due to instance failure. Instanceeventtype. 1="Reboot", InstanceEventType. 2="SystemFailure. Reboot"..... Scope of value:</p> <ul style="list-style-type: none"> <li>SystemMaintenance.Reboot: Reboot due to system maintenance instance.</li> <li>SystemFailure.Reboot: Restart due to system error instance.</li> <li>InstanceFailure.Reboot: Restart due to instance error.</li> <li>InstanceExpiration.Stop: Subscription instances stop due to expiration.</li> <li>InstanceExpiration.Delete: Subscription instances are released after several days of expiration.</li> <li>AccountUnbalanced.Stop: Pay-As-You-Go instances stop due to expiration.</li> <li>AccountUnbalanced.Delete: Pay-As-You-Go instances are released after several days of expiration.</li> </ul> |
| EventType           | String | No       | <p>Instance event type. EventType is effective only when the InstanceEventType.N is not specified.</p> <p>Optional values:</p> <ul style="list-style-type: none"> <li>SystemMaintenance.Reboot: Reboot due to system maintenance instance.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| Name                   | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------|---------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        |         |          | <ul style="list-style-type: none"> <li>SystemFailure.Reboot: Restart due to system error instance.</li> <li>InstanceFailure.Reboot: Restart due to instance error.</li> <li>InstanceExpiration.Stop: Subscription instances stop due to expiration.</li> <li>InstanceExpiration.Delete: Subscription instances are released after several days of expiration.</li> <li>AccountUnbalanced.Stop: Pay-As-You-Go instances stop due to expiration.</li> <li>AccountUnbalanced.Delete: Pay-As-You-Go instances are released after several days of expiration.</li> </ul> |
| NotBefore.Start        | String  | No       | Queries the start time of the scheduled event execution time. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is yyyy-MM-ddTHH:mm:ssZ.                                                                                                                                                                                                                                                                                                                                                                           |
| NotBefore.End          | String  | No       | Queries the end time of the scheduled event execution time. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is yyyy-MM-ddTHH:mm:ssZ.                                                                                                                                                                                                                                                                                                                                                                             |
| EventPublishTime.Start | String  | No       | Queries the start time of the event release time. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is yyyy-MM-ddTHH:mm:ssZ.                                                                                                                                                                                                                                                                                                                                                                                       |
| EventPublishTime.End   | String  | No       | Queries the end time of the event release time. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is yyyy-MM-ddTHH:mm:ssZ.                                                                                                                                                                                                                                                                                                                                                                                         |
| PageNumber             | Integer | No       | Page number of the query result. The value must be a positive integer.<br>Default value: 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| PageSize               | Integer | No       | Page size of the query result. Value range: [1, 100].<br>Default value: 10.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

**Response parameters**

| Name                  | Type                                            | Description                                     |
|-----------------------|-------------------------------------------------|-------------------------------------------------|
| TotalCount            | Integer                                         | Total number of the status of the instance.     |
| Pagenumber            | Integer                                         | Page number of the status list of the instance. |
| Pagesize              | Integer                                         | Size of each page.                              |
| Instancefullstatusset | Array of <a href="#">InstanceFullStatusType</a> | Array of full instance status.                  |

**InstanceFullStatusType**

| Name                    | Type                                              | Description                            |
|-------------------------|---------------------------------------------------|----------------------------------------|
| InstanceId              | String                                            | Instance ID.                           |
| Scheduledsystemeventset | Array of <a href="#">ScheduledSystemEventType</a> | Array of scheduled events.             |
| Status.Code             | Integer                                           | Code of the instance lifecycle status. |
| Status.Name             | String                                            | Name of the instance lifecycle status. |
| Healthstatus.Code       | Integer                                           | Code of the health status.             |
| Healthstatus.Name       | String                                            | Name of the health status.             |

**ScheduledSystemEventType**

| Name                  | Type    | Description           |
|-----------------------|---------|-----------------------|
| EventId               | String  | Instance event ID.    |
| EventCycleStatus.Code | Integer | Code of event status. |
| EventCycleStatus.Name | String  | Name of event status. |
| EventType.Code        | Integer | Code of event type.   |
| EventType.Name        | String  | Code of event type.   |

| Name             | Type   | Description                                                                                                                                                    |
|------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EventpublishTime | String | Event release time. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is yyyy-MM-ddTHH:mm:ssZ.                |
| NotBefore        | String | Scheduled time of event execution. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is yyyy-MM-ddTHH:mm:ssZ. |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeInstancesFullStatus
&RegionId=cn-hangzhou
&<Common Request Parameters>
```

### Success response example

#### XML format

```
<DescribeInstancesFullStatusResponse>
  <? xml version="1.0" encoding="UTF-8" ? >
  <InstanceFullStatusSet>
    <InstanceFullStatusType>
      <InstanceId>i-instance1</InstanceId>
      <Status>
        <Code>1</Code>
        <Name>Running</Name>
      </Status>
      <HealthStatus>
        <Code>0</Code>
        <Name>Maintaining</Name>
      </HealthStatus>
      <ScheduledSystemEventSet>
        <ScheduledSystemEventType>
          <EventId>e-event1</EventId>
          <EventCycleStatus>
            <Code>24</Code>
            <Name>Scheduled</Name>
          </EventCycleStatus>
          <EventType>
            <Code>1</Code>
            <Name>SystemMaintenance.Reboot</Name>
          </EventType>
          <EventPublishTime>2017-11-30T06:32:31Z</EventPubli
shTime>
          <NotBefore>2017-12-01T06:32:31Z</NotBefore>
        </ScheduledSystemEventType>
        <ScheduledSystemEventType>
          <EventId>e-event2</EventId>
          <EventCycleStatus>
            <Code>24</Code>
            <Name>Scheduled</Name>
          </EventCycleStatus>
          <EventType>
```

```

        <Code>34</Code>
        <Name>InstanceExpiration.Stop</Name>
    </EventType>
    <EventPublishTime>2017-11-30T00:00:00Z</EventPubli
shTime>
        <NotBefore>2017-12-07T00:00:00Z</NotBefore>
    </ScheduledSystemEventType>
</ScheduledSystemEventSet>
</InstanceFullStatusType>
<InstanceFullStatusType>
    <InstanceId>i-instance2</InstanceId>
    <Status>
        <Code>1</Code>
        <Name>Running</Name>
    </Status>
    <HealthStatus>
        <Code>64</Code>
        <Name>Warning</Name>
    </HealthStatus>
    <ScheduledSystemEventSet>
        <ScheduledSystemEventType>
            <EventId>e-event3</EventId>
            <EventCycleStatus>
                <Code>24</Code>
                <Name>Scheduled</Name>
            </EventCycleStatus>
            <EventType>
                <Code>65</Code>
                <Name>SystemFailure.Reboot</Name>
            </EventType>
            <EventPublishTime>2017-11-30T06:32:31Z</EventPubli
shTime>
        <NotBefore>2017-12-01T06:32:31Z</NotBefore>
    </ScheduledSystemEventType>
</ScheduledSystemEventSet>
</InstanceFullStatusSet>
<PageSize>10</PageSize>
<PageNumber>1</PageNumber>
<TotalCount>2</TotalCount>
<RequestId>AAC49D3E-ED6F-4F00-XXXX-377C551B1DD4</RequestId>
</DescribeInstancesFullStatusResponse>

```

### JSON format

```

{
  "InstanceFullStatusSet": {
    "InstanceFullStatusType": [
      {
        "InstanceId": "i-instance1",
        "Status": {
          "Code": 1,
          "Name": "Running"
        },
        "HealthStatus": {
          "Code": 0,
          "Name": "Maintaining"
        },
        "ScheduledSystemEventSet": {
          "ScheduledSystemEventType": [
            {

```

```

        "EventId": "e-event1",
        "EventCycleStatus": {
            "Code": 24,
            "Name": "Scheduled"
        },
        "EventType": {
            "Code": 1,
            "Name": "SystemMaintenance.Reboot"
        },
        "EventPublishTime": "2017-11-30T06:32:31Z",
        "NotBefore": "2017-12-01T06:32:31Z"
    },
    {
        "EventId": "e-event2",
        "EventCycleStatus": {
            "Code": 24,
            "Name": "Scheduled"
        },
        "EventType": {
            "Code": 34,
            "Name": "InstanceExpiration.Stop"
        },
        "EventPublishTime": "2017-11-30T00:00:00Z",
        "NotBefore": "2017-12-07T00:00:00Z"
    }
]
}
},
{
    "InstanceId": "i-instance2",
    "Status": {
        "Code": 1,
        "Name": "Running"
    },
    "HealthStatus": {
        "Code": 64,
        "Name": "Warning"
    },
    "ScheduledSystemEventSet": {
        "ScheduledSystemEventType": [
            {
                "EventId": "e-event3",
                "EventCycleStatus": {
                    "Code": 24,
                    "Name": "Scheduled"
                },
                "EventType": {
                    "Code": 65,
                    "Name": "SystemFailure.Reboot"
                },
                "EventPublishTime": "2017-11-30T06:32:31Z",
                "NotBefore": "2017-12-01T06:32:31Z"
            }
        ]
    }
}
}
]
},
"PageSize": 10,
"PageNumber": 1,
"TotalCount": 2,
"RequestId": "AAC49D3E-ED6F-4F00-XXXX-377C551B1DD4"

```

```
}
```

### Error response example

#### XML format

```
<Error>
  <RequestId>C38E0D94-C18B-44F3-8C05-6E35BE334088</RequestId>
  <HostId>ecs.aliyuncs.com</HostId>
  <Code>InstanceIdLimitExceeded</Code>
  <Message>The amount of InstanceId specified exceeds limit 100.</
Message>
</Error>
```

#### JSON format

```
{
  "RequestId": "1A8B4B27-8B2D-XXXX-XXXX-0F64DBE4C213",
  "HostId": "ecs.aliyuncs.com"
  "Code": "InstanceIdLimitExceeded"
  "Message": "The amount of InstanceId specified exceeds limit 100."
}
```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code              | Error message                                                                      | HTTP status code | Description                                                                     |
|-------------------------|------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------|
| InvalidParameter        | The Parameter provided is not valid.                                               | 403              | The specified parameter is invalid.                                             |
| EventIdLimitExceeded    | The amount of EventId specified exceeds limit 100.                                 | 403              | The number of the specified <code>EventId</code> cannot be greater than 100.    |
| InstanceIdLimitExceeded | The amount of InstanceId specified exceeds limit 100.                              | 403              | The number of the specified <code>InstanceId</code> cannot be greater than 100. |
| MissingParameter        | The input parameter that is mandatory for processing this request is not supplied. | 403              | You must specify the required parameter.                                        |
| InternalError           | The request processing has failed due to some unknown error,exception or failure.  | 500              | Internal error, please try again later.                                         |

## 15.2 DescribeInstanceHistoryEvents

Describes the history events of a specified instance. You can query the system events history within the last week.

### Request parameters

| Name                       | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------|--------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action                     | String | Yes      | The name of this interface. Value: DescribeInstanceHistoryEvents.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| RegionId                   | String | Yes      | ID of the region where the instance is located. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| InstanceId                 | String | No       | Instance ID. If you do not specify an instance ID, you will obtain event information for all instances in the specified region.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| EventId.N                  | String | No       | One or more event ID. Value range of N: [1, 100], the IDs must be displayed in the similar format of EventId. 1="e-xhskHun1256xxxx", EventId. 2="e-xhskHun1257xxxx" ...                                                                                                                                                                                                                                                                                                                                                                                                            |
| InstanceEventCycleStatus.N | String | No       | Lifecycle status of one or more events. Value range of N: [1, 100], the status must be displayed in the similar format of InstanceEventCycleStatus. 1="Scheduled", InstanceEventCycleStatus. 2="Canceled"... Optional values: <ul style="list-style-type: none"> <li>Scheduled: The event is waiting for processing.</li> <li>Avoided: You have fixed the event before it is complete.</li> <li>Executing: The event is in processing.</li> <li>Executed: Event progress is complete.</li> <li>Canceled: The event is canceled.</li> <li>Failed: Event progress failed.</li> </ul> |
| EventCycleStatus           | String | No       | Lifecycle status of an event. EventCycleStatus is effective only when the InstanceEventCycleStatus.N is not specified. Optional values: <ul style="list-style-type: none"> <li>Scheduled</li> <li>Avoided</li> <li>Executing</li> <li>Executed</li> <li>Canceled</li> </ul>                                                                                                                                                                                                                                                                                                        |



| Name                | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------|--------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     |        |          | <ul style="list-style-type: none"> <li>Failed</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| InstanceEventType.N | String | No       | <p>One or more instance event types. Value range of N: [1, 30], the events must be displayed in the similar format of <code>InstanceEventType</code>. 1="Reboot", <code>InstanceEventType</code>. 2="SystemFailure.Reboot"... Optional values:</p> <ul style="list-style-type: none"> <li><code>SystemMaintenance.Reboot</code>: Reboot due to system maintenance instance.</li> <li><code>SystemFailure.Reboot</code>: Restart due to system error instance.</li> <li><code>InstanceFailure.Reboot</code>: Restart due to instance error.</li> <li><code>InstanceExpiration.Stop</code>: Subscription instances stop due to expiration.</li> <li><code>InstanceExpiration.Delete</code>: Subscription instances are released after several days of expiration.</li> <li><code>AccountUnbalanced.Stop</code>: Pay-As-You-Go instances stop due to expiration.</li> <li><code>AccountUnbalanced.Delete</code>: Pay-As-You-Go instances are released after several days of expiration.</li> </ul> |
| EventType           | String | No       | <p>Instance event type. <code>EventType</code> is effective only when the <code>InstanceEventType.N</code> is not specified. Optional values:</p> <ul style="list-style-type: none"> <li><code>SystemMaintenance.Reboot</code>: Reboot due to system maintenance instance.</li> <li><code>SystemFailure.Reboot</code>: Restart due to system error instance.</li> <li><code>InstanceFailure.Reboot</code>: Restart due to instance error.</li> <li><code>InstanceExpiration.Stop</code>: Subscription instances stop due to expiration.</li> <li><code>InstanceExpiration.Delete</code>: Subscription instances are released after several days of expiration.</li> <li><code>AccountUnbalanced.Stop</code>: Pay-As-You-Go instances stop due to expiration.</li> </ul>                                                                                                                                                                                                                         |

| Name                   | Type    | Required | Description                                                                                                                                                                               |
|------------------------|---------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        |         |          | <ul style="list-style-type: none"> <li>AccountUnbalanced.Delete: Pay-As-You-Go instances are released after several days of expiration.</li> </ul>                                        |
| NotBefore.Start        | String  | No       | Queries the start time of the scheduled event execution time. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is YYYY-MM-DDTHH:mm:ssZ. |
| NotBefore.End          | String  | No       | Queries the end time of the scheduled event execution time. The time format follows the ISO8601 standard, and the UTC time is used. The format is YYYY-MM-DDTHH:mm:ssZ.                   |
| EventPublishTime.Start | String  | No       | Queries the start time of the event release time. The time format follows the ISO8601 standard, and the UTC time is used. The format is YYYY-MM-DDTHH:mm:ssZ.                             |
| EventPublishTime.End   | String  | No       | The end time of the query event release time. The time format follows the ISO8601 standard, and the UTC time is used. The format is YYYY-MM-DDTHH:mm:ssZ.                                 |
| PageNumber             | Integer | No       | Page number of the query result. The value must be a positive integer.<br>Default value: 1.                                                                                               |
| PageSize               | Integer | No       | Page size of the query result. Value range: [1, 100].<br>Default value: 10.                                                                                                               |

### Response parameters

| Name                   | Type                                             | Description                                  |
|------------------------|--------------------------------------------------|----------------------------------------------|
| TotalCount             | Integer                                          | Total number of the status of the instance.  |
| PageNumber             | Integer                                          | Page number of the instance list.            |
| PageSize               | Integer                                          | Number of entries per page set during input. |
| InstanceSystemEventSet | Array of <a href="#">InstanceSystemEventType</a> | Array of the history events of the instance. |

### InstanceSystemEventType

| Name                  | Type    | Description                                                                                                                                    |
|-----------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------|
| InstanceId            | String  | Instance ID.                                                                                                                                   |
| EventId               | String  | Event ID.                                                                                                                                      |
| EventType.Code        | Integer | Event type code.                                                                                                                               |
| EventType.Name        | String  | Event type name.                                                                                                                               |
| EventCycleStatus.Code | Integer | Event status code.                                                                                                                             |
| EventCycleStatus.Name | String  | Event status name.                                                                                                                             |
| EventPublishTime      | String  | Event release time. The time format follows the ISO8601 standard, and the UTC time is used. The format is YYYY-MM-DDTHH:mm:ssZ.                |
| NotBefore             | String  | Scheduled time of event execution. The time format follows the ISO8601 standard, and the UTC time is used. The format is YYYY-MM-DDTHH:mm:ssZ. |
| EventFinishTime       | String  | Event execution time. The time format follows the ISO8601 standard, and the UTC time is used. The format is YYYY-MM-DDTHH:mm:ssZ.              |

## Examples

### Request examples

```
https://ecs.aliyuncs.com/?Action=DescribeInstanceHistoryEvents
&RegionId=cn-hangzhou
&InstanceId=i-2ze3tphuqvc93cixxxx3
&<Common Request Parameters>
```

### Success response example

#### XML format

```
<DescribeInstanceHistoryEventsResponse>
  <InstanceSystemEventSet>
    <InstanceSystemEventType>
      <InstanceId>i-2ze3tphuqvc93cixxxx3</InstanceId>
      <EventId>e-2ze9yxxxwxtqcvai68rl</EventId>
      <EventType>
        <Code>1</Code>
        <Name>SystemMaintenance.Reboot</Name>
      </EventType>
      <EventCycleStatus>
        <Code>0</Code>
        <Name>Executed</Name>
      </EventCycleStatus>
      <EventPublishTime>2017-11-30T06:32:31Z</EventPublishTime>
```

```

        <NotBefore>2017-12-01T06:32:31Z</NotBefore>
        <EventFinishTime>2017-12-01T06:35:31Z</EventFinishTime>
    </InstanceSystemEventType>
    <InstanceSystemEventType>
        <InstanceId>i-2ze3tphuqvc93cixxxx3</InstanceId>
        <EventId>e-2ze9yxxxxwtqcvai68r3</EventId>
        <EventType>
            <Code>34</Code>
            <Name>InstanceExpiration.Stop</Name>
        </EventType>
        <EventCycleStatus>
            <Code>8</Code>
            <Name>Avoided</Name>
        </EventCycleStatus>
        <EventPublishTime>2017-11-29T06:32:31Z</EventPublishTime>
        <NotBefore>2017-12-06T00:00:00Z</NotBefore>
        <EventFinishTime>2017-12-05T12:35:31Z</EventFinishTime>
    </InstanceSystemEventType>
</InstanceSystemEventSet>
<PageSize>10</PageSize>
<PageNumber>1</PageNumber>
<TotalCount>2</TotalCount>
<RequestId>02EA76D3-5A2A-44EB-XXXX-8901881D8707</RequestId>
</DescribeInstanceHistoryEventsResponse>

```

### JSON format

```

{
  "InstanceSystemEventSet": {
    "InstanceSystemEventType": [
      {
        "InstanceId": "i-2ze3tphuqvc93cixxxx3",
        "EventId": "e-2ze9yxxxxwtqcvai68rl",
        "EventType": {
          "Code": 1,
          "Name": "SystemMaintenance.Reboot"
        },
        "EventCycleStatus": {
          "Code": 0,
          "Name": "Executed"
        },
        "EventPublishTime": "2017-11-30T06:32:31Z",
        "NotBefore": "2017-12-01T06:32:31Z",
        "EventFinishTime": "2017-12-01T06:35:31Z"
      },
      {
        "InstanceId": "i-2ze3tphuqvc93cixxxx3",
        "EventId": "e-2ze9yxxxxwtqcvai68r3",
        "EventType": {
          "Code": 34,
          "Name": "InstanceExpiration.Stop"
        },
        "EventCycleStatus": {
          "Code": 8,
          "Name": "Avoided"
        },
        "EventPublishTime": "2017-11-29T06:32:31Z",
        "NotBefore": "2017-12-06T00:00:00Z",
        "EventFinishTime": "2017-12-05T12:35:31Z"
      }
    ]
  }
}

```

```

    },
    "PageSize": 10,
    "PageNumber": 1,
    "TotalCount": 2,
    "RequestId": "02EA76D3-5A2A-44EB-XXXX-8901881D8707"
  }

```

### Error response example

#### XML format

```

<Error>
  <RequestId>C38E0D94-C18B-44F3-8C05-6E35BE334087</RequestId>
  <HostId>ecs.aliyuncs.com</HostId>
  <Code> invalidparameter</code>
  <Message>The Parameter "EventCycleStatus" provided is not valid.</
Message>
</Error>

```

#### JSON format

```

{
  "RequestId": "1A8B4B27-8B2D-XXXX-XXXX-0F64DBE4C212",
  "HostId": "ecs.aliyuncs.com"
  "Code": "InvalidParameter"
  "Message": "The Parameter "EventCycleStatus" provided is not valid
."
}

```

### Error codes

All are common error codes. For more information, see [API Error Center](#).

| Error code           | Error message                                                                      | HTTP status code | Meaning                                  |
|----------------------|------------------------------------------------------------------------------------|------------------|------------------------------------------|
| InvalidParameter     | The Parameter provided is not valid.                                               | 403              | The specified parameter is invalid.      |
| EventIdLimitExceeded | The amount of EventId specified exceeds limit 100.                                 | 403              | The number of EventId cannot exceed 100. |
| MissingParameter     | The input parameter that is mandatory for processing this request is not supplied. | 403              | You must specify the required parameter. |
| InternalServerError  | The request processing has failed due to some unknown error, exception or failure. | 500              | Internal error. Please try again later.  |

## 15.3 CancelSimulatedSystemEvents

Cancels one or more simulated system events that are in the Scheduled or Executing status.

After you cancel a simulated system event, the simulated event is in the Canceled status.

### Request parameters

| Name      | Type   | Required | Description                                                                                                        |
|-----------|--------|----------|--------------------------------------------------------------------------------------------------------------------|
| Action    | String | Yes      | The operation that you want to perform. Value: CancelSimulatedSystemEvents.                                        |
| RegionId  | String | Yes      | The ID of the region. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list. |
| EventId.N | String | Yes      | The IDs of the events. Value range of N: [1, 100]. The event IDs must be displayed in a repeated list format.      |

### Response parameters

All are common response parameters. See [Common response parameters](#).

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=CancelSimulatedSystemEvents
&RegionId=cn-hangzhou
EventId.1="e-xhskHun1256xxxx"
EventId.2="e-xhskHun1257xxxx"
&<Common Request Parameters>
```

#### Response example

#### XML format

```
<CancelSimulatedSystemEventsResponse>
  <RequestId>E69EF3CC-94CD-42E7-8926-F133B86387C0</RequestId>
</CancelSimulatedSystemEventsResponse>
```

#### JSON format

```
{
  "RequestId": "E69EF3CC-94CD-42E7-8926-F133B86387C0"
}
```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                           | Error message                                                                      | HTTP status code | Description                                                              |
|--------------------------------------|------------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------|
| EventIdLimitExceeded                 | The amount of EventId specified exceeds limit.                                     | 400              | The number of specified simulated event IDs cannot exceed 100 at a time. |
| InvalidEventId.NotFound              | Cannot find EventId.                                                               | 403              | The specified value for the <b>EventId.N</b> parameter does not exist.   |
| CannotCancelSystemEvent.NotSimulated | Cannot cancel system event generated by system.                                    | 403              | The error message returned when you cancel a non-simulated system event. |
| MissingParameter                     | The input parameter that is mandatory for processing this request is not supplied. | 404              | The value for a required parameter is not specified.                     |

## 15.4 CreateSimulatedSystemEvents

Schedules simulated system events for one or more Elastic Compute Service (ECS) instances.

The system events that are simulated do not occur in the real system and the simulation does not affect ECS instances.

### Description

- You can view the scheduled system events in the ECS console, [ECS API](#), or cloud monitoring service.
- The following table describes the life cycle of a simulated system event.

| Name      | Description                         | Status                                                                                              |
|-----------|-------------------------------------|-----------------------------------------------------------------------------------------------------|
| Scheduled | The simulated system event has been | The status for the simulated system event is automatically changed to Scheduled after the schedule. |

| Name     | Description                                   | Status                                                                                                                                                                                                                                                                                                            |
|----------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | scheduled                                     |                                                                                                                                                                                                                                                                                                                   |
| Executed | The simulated system event has been executed. | The status for the simulated system event is automatically changed to Executed at the scheduled time specified by the NotBefore parameter if no manual intervention is involved.                                                                                                                                  |
| Canceled | The simulated system event has been canceled. | The status for the simulated system event is changed to Canceled if you cancel the event by making a <a href="#">CancelSimulatedSystemEvents</a> request.                                                                                                                                                         |
| Avoided  | The simulated system event has been avoided.  | The status for the simulated system event of maintenance-triggered instance restart can be changed to Avoided if you <a href="#">restart the instance</a> before the scheduled time of the simulated system event. The maintenance-triggered instance restart is indicated by the SystemMaintenance.Reboot value. |

### Request parameters

| Name         | Type   | Required | Description                                                                                                                |
|--------------|--------|----------|----------------------------------------------------------------------------------------------------------------------------|
| Action       | String | Yes      | The operation that you want to perform. Value: CreateSimulatedSystemEvents.                                                |
| RegionId     | String | Yes      | The ID of the region. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.         |
| InstanceId.N | String | Yes      | The IDs of one or more ECS instances. Value range of N: [1, 100]. The ECS IDs must be displayed in a repeated list format. |
| EventType    | String | Yes      | The type of a system event. Optional values:                                                                               |



| Name      | Type   | Required | Description                                                                                                                                                                                                                                                                                |
|-----------|--------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |        |          | <ul style="list-style-type: none"> <li>SystemMaintenance.Reboot: The instance restarts because of maintenance.</li> <li>SystemFailure.Reboot: The instance restarts due to a system failure.</li> <li>InstanceFailure.Reboot: The instance restarts due to an instance failure.</li> </ul> |
| NotBefore | String | Yes      | The start time of the scheduled event execution time. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is yyyy-MM-ddTHH:mm:ssZ.                                                                                                          |

### Response parameters

| Name       | Type                        | Description                      |
|------------|-----------------------------|----------------------------------|
| EventIdSet | List of event IDs (EventId) | The list of simulated event IDs. |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=CreateSimulatedSystemEvents
&RegionId=cn-hangzhou
&InstanceId.1=i-instance1
&InstanceId.2=i-instance1
&EventType=SystemMaintenance.Reboot
&NotBefore=2018-12-01T06:32:31Z
&<Common Request Parameters>
```

#### Response example

#### XML format

```
<CreateSimulatedSystemEventsResponse>
  <EventIdSet>
    <EventId>e-xhskHun1256xxxx</EventId>
    <EventId>e-xhskHun1257xxxx</EventId>
  </EventIdSet>
  <RequestId>E69EF3CC-94CD-42E7-8926-F133B86387C0</RequestId>
</CreateSimulatedSystemEventsResponse>
```

#### JSON format

```
{
  "RequestId": "E69EF3CC-94CD-42E7-8926-F133B86387C0",
  "EventIdSet": {
    "EventId": "e-xhskHun1256xxxx",
    "EventId": "e-xhskHun1257xxxx"
  }
}
```

```
}  
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                  | Error message                                                                      | HTTP status code | Description                                                                        |
|-----------------------------|------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------|
| InvalidNotBefore.Passed     | The NotBefore of system event has passed.                                          | 400              | The specified value for the NotBefore parameter is later than the current time.    |
| InvalidInstanceId.NotFound  | Cannot find InstanceId.                                                            | 400              | The specified instance ID does not exist.                                          |
| SimulatedEventLimitExceeded | The amount of active simulated system event exceeds limit.                         | 400              | The amount of active simulated system events has exceeded the limit in the region. |
| InstanceIdLimitExceeded     | The amount of InstanceId specified exceeds limit.                                  | 400              | The number of specified instance IDs cannot exceed 100 at a time.                  |
| MissingParameter            | The input parameter that is mandatory for processing this request is not supplied. | 404              | The value for a required parameter is not specified.                               |

## 15.5 DescribeDisksFullStatus

Describes the full status information of a disk.

### Description

- The full status information of a disk includes the disk life cycle status (`Status`), disk health status (`HealthStatus`), and disk event type (`EventType`).
- Because the disk-related **event release time**, **scheduled event execution time**, and **actual event execution time** are the same, if you specify a period [`EventTime.Start`, `EventTime.End`], the system queries all history events that have occurred during the period. Currently, you can query the system events history within the last week.

**Request parameters**

| Name            | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------|--------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action          | String | Yes      | The name of this interface. Value: DescribeDisksFullStatus.                                                                                                                                                                                                                                                                                                                                                                                |
| RegionId        | String | Yes      | ID of the region where the specified disk belongs. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                                                                                                                                            |
| DiskId.N        | String | No       | Disk ID. Value range of N: [1, 100].                                                                                                                                                                                                                                                                                                                                                                                                       |
| EventId.N       | String | No       | Event ID. Value range of N: [1, 100].                                                                                                                                                                                                                                                                                                                                                                                                      |
| Status          | String | No       | Life cycle status of the disk. For more information, see <a href="#">Cloud disk status table</a> . Optional values: <ul style="list-style-type: none"> <li>In Use</li> <li>Available</li> <li>Attaching</li> <li>Detaching</li> <li>Creating</li> <li>Resilience</li> </ul>                                                                                                                                                                |
| HealthStatus    | String | No       | Health status of the disk. Optional values: <ul style="list-style-type: none"> <li>Impaired: The disk is damaged.</li> <li>Warning: The performance of disk may be degraded because of maintenance or technical issues.</li> <li>Initializing: The disk is in reinitialization process.</li> <li>InsufficientData: The event details cannot be determined because of insufficient data.</li> <li>NotApplicable: Not applicable.</li> </ul> |
| EventType       | String | No       | Disk event type. Optional values: <ul style="list-style-type: none"> <li>Degraded: The disk performance is downgraded.</li> <li>SeverelyDegraded: The disk performance is seriously downgraded.</li> <li>Stalled: The disk may be stalled with I/O suspended.</li> </ul>                                                                                                                                                                   |
| EventTime.Start | String | No       | Queries the start time of the event occurrence time. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is yyyy-MM-ddTHH:mm:ssZ.                                                                                                                                                                                                                                                           |

| Name          | Type    | Required | Description                                                                                                                                                                    |
|---------------|---------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EventTime.End | String  | No       | Queries the end time of the event occurrence time. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is yyyy-MM-ddTHH:mm:ssZ. |
| PageNumber    | Integer | No       | Page number of the query result. The value must be a positive integer.<br>Default value: 1.                                                                                    |
| PageSize      | Integer | No       | Page size of the query result. Value range: [1, 100].<br>Default value: 10.                                                                                                    |

### Response parameters

| Name                                        | Type                                        | Description                              |
|---------------------------------------------|---------------------------------------------|------------------------------------------|
| TotalCount                                  | Integer                                     | Total number of the status of the disks. |
| Page number of the status list of the disks | Integer                                     | ECS instance list page number.           |
| Pagesize                                    | Integer                                     | Size of each page.                       |
| DiskFullStatusSet                           | Array of <a href="#">DiskFullStatusType</a> | Array of full disk status information.   |

### DiskFullStatusType

| Name              | Type                                   | Description                                                                                                            |
|-------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| DiskId            | String                                 | Disk ID.                                                                                                               |
| InstanceId        | String                                 | Instance ID.                                                                                                           |
| Device            | String                                 | Device information of the related instance, such as /dev/xvdb. It is null unless the Status is <b>In Use</b> (In_use). |
| Diskeventset      | Array of <a href="#">DiskEventType</a> | Array of disk events.                                                                                                  |
| Status.Code       | Integer                                | Code of the disk life cycle status.                                                                                    |
| Status.Name       | String                                 | Name of the disk life cycle status.                                                                                    |
| HealthStatus.Code | Integer                                | Code of the disk health status.                                                                                        |
| HealthStatus.Name | String                                 | Name of the disk health status.                                                                                        |

**DiskEventType**

| Name           | Type    | Description                                                                                                                                        |
|----------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| EventId        | String  | Disk event ID.                                                                                                                                     |
| EventType.Code | Integer | Event type code.                                                                                                                                   |
| EventType.Name | String  | Event type name.                                                                                                                                   |
| EventTime      | String  | Event occurrence time. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is yyyy-MM-ddTHH:mm:ssZ. |
| EventEndTime   | String  | Event terminal time. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is yyyy-MM-ddTHH:mm:ssZ.   |

**Examples****Request example**

```
https://ecs.aliyuncs.com/?Action=DescribeDisksFullStatus
&RegionId=cn-hangzhou
&<Common Request Parameters>
```

**Success response example****XML format**

```
<DescribeDisksFullStatusResponse>
  <DiskFullStatusSet>
    <DiskFullStatusType>
      <DiskEventSet>
        <DiskEventType>
          <EventId>e-event1</EventId>
          <EventType>
            <Code>7</Code>
            <Name>Stalled</Name>
          </EventType>
          <EventTime>2018-05-08T02:43:10Z</EventTime>
        </DiskEventType>
      </DiskEventSet>
      <DiskId>d-disk1</DiskId>
      <InstanceId>i-instance1</InstanceId>
      <HealthStatus>
        <Code>128</Code>
        <Name>Impaired</Name>
      </HealthStatus>
      <Status>
        <Code>129</Code>
        <Name>Available</Name>
      </Status>
    </DiskFullStatusType>
    <DiskFullStatusType>
      <DiskEventSet>
        <DiskEventType>
```

```

        <EventId>e-event2</EventId>
        <EventType>
            <Code>1</Code>
            <Name>Degraded</Name>
        </EventType>
        <EventTime>2018-05-06T02:43:10Z</EventTime>
        <EventEndTime>2018-05-06T02:48:52Z</EventEndTime>
    </DiskEventSet>
</DiskFullStatusSet>
<DiskId>d-disk2</DiskId>
<InstanceId>i-instance2</InstanceId>
<HealthStatus>
    <Code>64</Code>
    <Name>Warning</Name>
</HealthStatus>
<Status>
    <Code>0</Code>
    <Name>Ok</Name>
</Status>
</DiskFullStatusType>
</DiskFullStatusSet>
<PageNumber>1</PageNumber>
<PageSize>10</PageSize>
<RequestId>1A8B4B27-8B2D-XXXX-XXXX-0F64DBE4C211</RequestId>
<TotalCount>2</TotalCount>
</DescribeDisksFullStatusResponse>

```

### JSON format

```

{
  "DiskFullStatusSet": {
    "DiskFullStatusType": [
      {
        "DiskEventSet": {
          "DiskEventType": [
            {
              "EventId": "e-event1",
              "EventType": {
                "Code": "7",
                "Name": "Stalled"
              },
              "EventTime": "2018-05-08T02:43:10Z"
            }
          ]
        },
        "DiskId": "d-disk1",
        "InstanceId": "i-instance1",
        "HealthStatus": {
          "Code": 128,
          "Name": "Impaired"
        },
        "Status": {
          "Code": 129,
          "Name": "Available"
        }
      }
    ],
    "DiskEventSet": {
      "DiskEventType": [
        {
          "EventId": "e-event2",

```

```

        "EventType": {
            "Code": "1",
            "Name": "Degraded"
        },
        "EventTime": "2018-05-06T02:43:10Z",
        "EventEndTime": "2018-05-06T02:48:52Z"
    },
    ]
},
"DiskId": "d-disk2",
"InstanceId": "i-instance2",
"HealthStatus": {
    "Code": 0,
    "Name": "Ok"
},
"Status": {
    "Code": 129,
    "Name": "Available"
}
}
]
},
"PageNumber": 1,
"PageSize": 10,
"RequestId": "1A8B4B27-8B2D-XXXX-XXXX-0F64DBE4C211",
"TotalCount": 2
}

```

### Error response example

#### XML format

```

<Error>
  <RequestId>C38E0D94-C18B-44F3-8C05-6E35BE334086</RequestId>
  <HostId>ecs.aliyuncs.com</HostId>
  <Code>MissingParameter</Code>
  <Message>The input parameter that is mandatory for processing this
request is not supplied.</Message>
</Error>

```

#### JSON format

```

{
  "RequestId": "1A8B4B27-8B2D-XXXX-XXXX-0F64DBE4C211",
  "HostId": "ecs.aliyuncs.com"
  "Code": "MissingParameter"
  "Message": "The input parameter that is mandatory for processing
this request is not supplied."
}

```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                          | Error information                                                                  | HTTP status code | Description                                                                                                |
|-------------------------------------|------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------|
| InvalidParameter                    | The Parameter provided is not valid.                                               | 403              | The parameter is invalid.                                                                                  |
| InvalidParameter.LengthExceeded     | The Parameter provided exceeds maximum length.                                     | 403              | The value range of N in <b>EventId.N</b> must be [1, 100].                                                 |
| InvalidParameter.TooManyDiskId      | The diskIds provided is out of bounds [1,100].                                     | 403              | The specified parameter value is out of the valid range.                                                   |
| InvalidParameter.TimeEndBeforeStart | The event time end should be after event time start.                               | 403              | The specified event time filter condition is not legal and the end time must be later than the start time. |
| MissingParameter                    | The input parameter that is mandatory for processing this request is not supplied. | 403              | You must specify the required parameter.                                                                   |
| InternalError                       | The request processing has failed due to some unknown error, exception or failure. | 500              | Internal error, please try again later.                                                                    |



# 16 Monitoring

## 16.1 DescribeEniMonitorData

Queries data connection information about a secondary ENI over a specific period.

### Description

The queryable traffic data on the secondary ENI traffic data includes intranet inbound and outbound traffic, the number of packets sent and received by the secondary ENI, and the number of packets discarded by the secondary ENI. If some content in the returned information is missing, it is possible that the system did not obtain the corresponding information. For example, the traffic data on the secondary ENI cannot be queried if the instance is in the **Stopped** status (Stopped ). Data also cannot be queried if the secondary ENI is not mounted to an instance and in the **Available** status(Available). When you use this operation, consider the following:

- Each query can return up to 400 entries of monitoring data. If **(EndTime - StartTime)/Period > 400**, an error is returned.
- You can use a single query to search for monitoring data in the last 30 days. If the value of the StartTime parameter is more than 30 days, an error is returned.

### Request parameters

| Name       | Type   | Required | Description                                                                                                                                                                                                                                                                                         |
|------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action     | String | Yes      | The operation that you want to perform. Value: DescribeEniMonitorData.                                                                                                                                                                                                                              |
| InstanceId | String | Yes      | Instance ID that is bound to the secondary ENI.                                                                                                                                                                                                                                                     |
| EniId      | String | No       | Secondary ENI ID. All secondary ENIs that are bound to the instance are queried by default.                                                                                                                                                                                                         |
| StartTime  | String | Required | The start time of the monitoring data to be retrieved. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is yyyy-MM-ddTHH:mm:ssZ. If the specified number of seconds (ss) is not 00, the time will be automatically rounded up to the next minute. |
| EndTime    | String | Yes      | The end time of the monitoring data. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is yyyy-MM-ddTHH:mm:ssZ. If the specified number of seconds                                                                                                 |

| Name          | Type    | Required | Description                                                                                               |
|---------------|---------|----------|-----------------------------------------------------------------------------------------------------------|
|               |         |          | (ss) is not 00, the time will be automatically rounded up to the next minute.                             |
| <b>Period</b> | Integer | Optional | Period of the retrieved monitoring data. Unit: second. Value range: 60   600   3600<br>Default value: 60. |

### Response parameters

| Name               | Type                               | Description                                                               |
|--------------------|------------------------------------|---------------------------------------------------------------------------|
| <b>MonitorData</b> | <a href="#">EniMonitorDataType</a> | The set of monitoring data <b>EniMonitorDataType</b> for a secondary ENI. |

### Data type of EniMonitorDataType

| Name                | Type   | Description                                                                                                                                          |
|---------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EniId</b>        | String | Secondary ENI ID.                                                                                                                                    |
| <b>TimeStamp</b>    | String | Traffic query timestamp. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is yyyy-MM-ddTHH:mm:ssZ. |
| <b>PacketTX</b>     | String | Number of intranet data packets sent by the secondary ENI.                                                                                           |
| <b>PacketRX</b>     | String | Number of intranet data packets received by the secondary ENI.                                                                                       |
| <b>IntranetTX</b>   | String | Intranet data traffic sent by the secondary ENI, in kbits.                                                                                           |
| <b>IntranetRX</b>   | String | Intranet data traffic received by the secondary ENI, in kbits.                                                                                       |
| <b>DropPacketTX</b> | String | Number of discarded intranet data packets sent by the secondary ENI.                                                                                 |
| <b>DropPacketRX</b> | String | Number of discarded intranet data packets received by the secondary ENI.                                                                             |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeEniMonitorData
&EniId=eni-myENI
&InstanceId=myInstance
&StartTime=2018-05-21T12:19:00Z
&EndTime=2018-05-21T12:22:00Z
```

&lt;&lt;Common Request Parameters>

## Response examples

### XML format

```
<DescribeEniMonitorDataResponse>
  <RequestId>5A03C2BA-3BCE-4A87-8076-7DC1629</RequestId>
  <TotalCount>4</TotalCount>
  <MonitorData>
    <EniMonitorData>
      <PacketTx>0</PacketTx>
      <TimeStamp>2018-05-21T03:22:00Z</TimeStamp>
      <IntranetOut>0</IntranetOut>
      <DropPacketRx>0</DropPacketRx>
      <IntranetIn>0</IntranetIn>
      <EniId>eni-myENI</EniId>
      <DropPacketTx>0</DropPacketTx>
      <PacketRx>0</PacketRx>
    </EniMonitorData>
    <EniMonitorData>
      <PacketTx>0</PacketTx>
      <TimeStamp>2018-05-21T03:21:00Z</TimeStamp>
      <IntranetOut>0</IntranetOut>
      <DropPacketRx>0</DropPacketRx>
      <IntranetIn>0</IntranetIn>
      <EniId>eni-myENI</EniId>
      <DropPacketTx>0</DropPacketTx>
      <PacketRx>0</PacketRx>
    </EniMonitorData>
    <EniMonitorData>
      <PacketTx>52240</PacketTx>
      <TimeStamp>2018-05-21T03:19:00Z</TimeStamp>
      <IntranetOut>73344</IntranetOut>
      <DropPacketRx>0</DropPacketRx>
      <IntranetIn>467</IntranetIn>
      <EniId>eni-myENI</EniId>
      <DropPacketTx>0</DropPacketTx>
      <PacketRx>6603</PacketRx>
    </EniMonitorData>
    <EniMonitorData>
      <PacketTx>34925</PacketTx>
      <TimeStamp>2018-05-21T03:20:00Z</TimeStamp>
      <IntranetOut>48871</IntranetOut>
      <DropPacketRx>0</DropPacketRx>
      <IntranetIn>350</IntranetIn>
      <EniId>eni-myENI</EniId>
      <DropPacketTx>0</DropPacketTx>
      <PacketRx>4888</PacketRx>
    </EniMonitorData>
  </MonitorData>
</DescribeEniMonitorDataResponse>
```

### JSON format

```
{
  "RequestId": "5A03C2BA-3BCE-4A87-8076-7DC1629",
  "MonitorData": {
    "EniMonitorData": [
      {
```

```

        "PacketTx":0,
        "TimeStamp":"2018-05-21T03:22:00Z",
        "IntranetOut":0,
        "DropPacketRx":0,
        "IntranetIn":0,
        "EniId":"eni-myENI",
        "DropPacketTx":0,
        "PacketRx":0
    },
    {
        "PacketTx":0,
        "TimeStamp":"2018-05-21T03:21:00Z",
        "IntranetOut":0,
        "DropPacketRx":0,
        "IntranetIn":0,
        "EniId":"eni-myENI",
        "DropPacketTx":0,
        "PacketRx":0
    },
    {
        "PacketTx":52240,
        "TimeStamp":"2018-05-21T03:19:00Z",
        "IntranetOut":73344,
        "DropPacketRx":0,
        "IntranetIn":467,
        "EniId":"eni-myENI",
        "DropPacketTx":0,
        "PacketRx":6603
    },
    {
        "PacketTx":34925,
        "TimeStamp":"2018-05-21T03:20:00Z",
        "IntranetOut":48871,
        "DropPacketRx":0,
        "IntranetIn":350,
        "EniId":"eni-myENI",
        "DropPacketTx":0,
        "PacketRx":4888
    }
]
}
}

```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                 | Error message                                     | HTTP status code | Description                                          |
|----------------------------|---------------------------------------------------|------------------|------------------------------------------------------|
| InvalidInstanceId.NotFound | The specified InstanceId does not exist.          | 404              | The specified <b>InstanceId</b> does not exist.      |
| InvalidStartTime.Malformed | The specified parameter "StartTime" is not valid. | 400              | The specified parameter <b>StartTime</b> is invalid. |

| Error code                          | Error message                                                                                          | HTTP status code | Description                                                                                         |
|-------------------------------------|--------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------|
| InvalidEndTime.Malformed            | The specified parameter "EndTime" is not valid.                                                        | 400              | The specified parameter <b>EndTime</b> is invalid.                                                  |
| InvalidPeriod.ValueNotSupported     | The specified parameter "Period" is not valid.                                                         | 400              | The specified parameter <b>Period</b> is invalid.                                                   |
| InvalidStartTime.TooEarly           | The specified parameter "StartTime" is too early.                                                      | 400              | The specified <b>StartTime</b> must be within 30 days of the current day.                           |
| InvalidParameter.TooManyDataQueried | Too many data queried.                                                                                 | 400              | Attempted to query too much data. You can only query up to 400 entries of monitored data at a time. |
| Throttling                          | You have made too many requests within a short time; your request is denied due to request throttling. | 400              | Your request is denied due to request throttling. Try again later.                                  |

## 16.2 DescribeDiskMonitorData

Queries the monitoring data of a specified disk. The monitoring data includes the operational behaviors such as the measured read IOPS, write IOPS, read bandwidth (Bps), write bandwidth (Bps), read latency (ms), and write latency (ms) of a disk. Because we cannot obtain the data if the disk is not in the In\_Use status, some data may be missing from the returned result.

### Description

When you call this interface, consider the following:

- You can only query monitoring information for the disks that are in the In\_use status. For more information, see Basic cloud disk status.
- Returns at most 400 at a time. Up to 400 monitoring entries can be returned for one request. If the specified (EndTime-StartTime)/Period is greater than 400, an error is returned.

**Request parameters**

| Name      | Type    | Required | Description                                                                                                                                                                                          |
|-----------|---------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action    | String  | Yes      | The name of this interface. Value: DescribeDiskMonitorData.                                                                                                                                          |
| DiskId    | String  | Yes      | The disk ID.                                                                                                                                                                                         |
| StartTime | String  | Yes      | The start time. In UTC format. It is represented according to ISO8601, for example YYYY-MM-DDThh:mm:ssZ. If the seconds (ss) is not 00, it is set to start from the next minute.                     |
| EndTime   | String  | Yes      | The end time, in UTC format. It is represented according to ISO8601, for example YYYY-MM-DDThh:mm:ssZ. If the seconds (ss) is not 00, it is set to end with the next minute.                         |
| Period    | Integer | No       | The granularity of the retrieved monitoring data. Unit of measurement: second. Optional values: <ul style="list-style-type: none"><li>• 60</li><li>• 600</li><li>• 3600</li></ul> Default value: 60. |

## Response parameters

| Name        | Type                                | Description                                                        |
|-------------|-------------------------------------|--------------------------------------------------------------------|
| TotalCount  | Integer                             | The total number of disk monitoring data entries.                  |
| MonitorData | <a href="#">DiskMonitorDataType</a> | A collection composed of disk monitoring data DiskMonitorDataType. |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeDiskMonitorData
&DiskId=d-mydisk001
&StartTime=2014-07-23T12:07:00Z
&EndTime=2014-07-23T12:09:00Z
&<Common Request Parameters>
```

### Response example

#### XML format

```
<DescribeDiskMonitorDataResponse>
  <MonitorData>
    <DiskMonitorData>
      <BPSRead>0</BPSRead>
      <BPSTotal>0</BPSTotal>
      <BPSWrite>0</BPSWrite>
      <DiskId>d-23b3p4r8b</DiskId>
      <IOPSRead>0</IOPSRead>
      <IOPSTotal>0</IOPSTotal>
      <IOPSWrite>0</IOPSWrite>
      <TimeStamp>2014-07-23T12:07:00Z</TimeStamp>
    </DiskMonitorData>
    <DiskMonitorData>
      <BPSRead>0</BPSRead>
      <BPSTotal>204</BPSTotal>
      <BPSWrite>204</BPSWrite>
      <DiskId>d-23b3p4r8b</DiskId>
      <IOPSRead>0</IOPSRead>
      <IOPSTotal>0</IOPSTotal>
      <IOPSWrite>0</IOPSWrite>
      <TimeStamp>2014-07-23T12:08:00Z</TimeStamp>
    </DiskMonitorData>
    <DiskMonitorData>
      <BPSRead>0</BPSRead>
      <BPSTotal>819</BPSTotal>
      <BPSWrite>819</BPSWrite>
      <DiskId>d-23b3p4r8b</DiskId>
      <IOPSRead>0</IOPSRead>
      <IOPSTotal>0</IOPSTotal>
      <IOPSWrite>0</IOPSWrite>
      <TimeStamp>2014-07-23T12:09:00Z</TimeStamp>
    </DiskMonitorData>
  </MonitorData>
</DescribeDiskMonitorDataResponse>
```

```

    </MonitorData>
    <RequestId>BF666447-B171-4076-BCBA-48437C18FD76</RequestId>
    <TotalCount>3</TotalCount>
</DescribeDiskMonitorDataResponse>

```

### JSON format

```

{
  "MonitorData": {
    "DiskMonitorData": [
      {
        "BPSRead": 0,
        "BPSTotal": 0,
        "BPSWrite": 0,
        "DiskId": "d-23b3p4r8b",
        "IOPSRead": 0,
        "IOPSTotal": 0,
        "IOPSWrite": 0,
        "TimeStamp": "2014-07-23T12:07:00Z"
      },
      {
        "BPSRead": 0,
        "BPSTotal": 204,
        "BPSWrite": 204,
        "DiskId": "d-23b3p4r8b",
        "IOPSRead": 0,
        "IOPSTotal": 0,
        "IOPSWrite": 0,
        "TimeStamp": "2014-07-23T12:08:00Z"
      },
      {
        "BPSRead": 0,
        "BPSTotal": 819,
        "BPSWrite": 819,
        "DiskId": "d-23b3p4r8b",
        "IOPSRead": 0,
        "IOPSTotal": 0,
        "IOPSWrite": 0,
        "TimeStamp": "2014-07-23T12:09:00Z"
      }
    ]
  },
  "RequestId": "A48A0A77-34F5-4C33-9066-9E8D2DA0D8E2",
  "TotalCount": 3
}

```

### Error codes

The following error codes are specific to this interface. For more error codes, visit the [API error center](#).

| Error code                   | Error information                                       | HTTP status code | Description                       |
|------------------------------|---------------------------------------------------------|------------------|-----------------------------------|
| InvalidEndTime.<br>Malformed | The specified parameter “SignatureMethod” is not valid. | 400              | The specified EndTime is invalid. |



| Error code                              | Error information                                                                                      | HTTP status code | Description                                                                                                           |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------|
| InvalidParameter.<br>TooManyDataQueried | Too many data queried.                                                                                 | 400              | At most 400 data can be returned at a time, the specified (EndTime-StartTime)/Period needs to be less than equal 400. |
| InvalidPeriod.<br>ValueNotSupported     | The specified parameter “SignatureMethod” is not valid.                                                | 400              | The specified Period is not invalid.                                                                                  |
| InvalidStartTime.<br>TooEarly           | The specified parameter “StartTime” is too early.                                                      | 400              | The specified StartTime is too early.                                                                                 |
| InvalidStartTime.<br>Malformed          | The specified parameter “SignatureMethod” is not valid.                                                | 400              | The specified StartTime is not legal.                                                                                 |
| InvalidDiskId.<br>NotFound              | The DiskId provided does not exist.                                                                    | 404              | The specified DiskId does not exist.                                                                                  |
| Throttling                              | You have made too many requests within a short time; your request is denied due to request throttling. | 400              | During system streaming, please try again later.                                                                      |

## 16.3 GetInstanceScreenshot

Obtains screenshot information of an instance for troubleshooting and diagnosis.

### Description

We return you the instance screenshot in JPG format, encoded in Base64. However, you can decode the screenshot yourself. We recommend that you use this operation for troubleshooting and diagnosis, and consider the following:

- The instance must be in the **Running** (Running) status.
- *Phased-out instance types* cannot obtain screenshot information.

## Request parameters

| Name       | Type    | Required | Description                                                                                                                                     |
|------------|---------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Action     | String  | Yes      | The name of this interface. Value: GetInstanceScreenshot.                                                                                       |
| RegionId   | String  | Yes      | ID of the region where the ECS instance is located. For more information, use <a href="#">DescribeRegions</a> to obtain the latest region list. |
| InstanceId | String  | Yes      | Instance ID.                                                                                                                                    |
| Wakeup     | Boolean | No       | Whether to wake up instances in sleep mode or not. Default value: false.                                                                        |

## Response parameters

| Name       | Type   | Description                                           |
|------------|--------|-------------------------------------------------------|
| InstanceId | String | Instance ID.                                          |
| screenshot | String | The JPG format instance screenshot encoded in Base64. |

## Examples

### Request example

```
http://ecs-cn-hangzhou.example.com/?Action=GetInstanceScreenshot
&RegionId=cn-shenzhen
&InstanceId=i-j5e42sbbthlokka11eci
&Wakeup=False
&<Common Request Parameters>
```

### Success response example

#### XML format

```
<GetInstanceScreenshotResponse>
  <RequestId>22A1933F-AD02-4560-A6A7-53CF2231D942</RequestId>
  <InstanceId>i-j5e42sbbthlokka11ech</InstanceId>
  <Screenshot>iVB0Rw0KGgoA... AAABJRU5ErkJggg==</Screenshot>
</GetInstanceScreenshotResponse>
```

#### JSON format

```
{
  "RequestId": "22A1933F-AD02-4560-A6A7-53CF2231D942",
  "InstanceId": "i-j5e42sbbthlokka11ech",
  "Screenshot": "iVB0Rw0KGgoA... AAABJRU5ErkJggg=="
}
```

### Error response example

**XML format**

```
<Error>
  <RequestId>C38E0D94-C18B-44F3-8C05-6E35BE334088</RequestId>
  <HostId>ecs.aliyuncs.com</HostId>
  <Code>NotSupported</Code>
  <Message>The operation is not supported for "i-j5e42sbbth
lokkaXXXXX".</Message>
</Error>
```

**JSON format**

```
{
  "RequestId": "C38E0D94-C18B-44F3-8C05-6E35BE334088",
  "HostId": "ecs.aliyuncs.com",
  "Code": "NotSupported",
  "Message": "The operation is not supported for "i-j5e42sbbth
lokkaXXXXX"."
}
```

**Error codes**

Error codes specific to this interface are as follows.

| Error code              | Error message                                                                                   | HTTP status code | Description                                                            |
|-------------------------|-------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------|
| MissingParameter        | The input parameter "InstanceId" that is mandatory for processing this request is not supplied. | 400              | InstanceId is required.                                                |
| InvalidParameter        | The "InstanceId" provided is not valid.                                                         | 404              | The specified InstanceId does not exist.                               |
| IncorrectInstanceStatus | The instance status "{status}" is not applicable                                                | 405              | The instance must be in the <b>Running</b> (Running) status.           |
| NotSupported            | The operation is not supported for "{InstanceId}"                                               | 405              | <i>Phased-out instance types</i> cannot obtain screenshot information. |
| Throttling              | Request was denied due to request throttling.                                                   | 400              | You have made too many frequent requests in a short time.              |

## 16.4 GetInstanceConsoleOutput

Obtains the console output of an instance. The returned command line output is encoded in Base64 format.

### Description

ECS instances are virtualized cloud-based services that cannot be connected to display devices or make mobile snapshots. However, the instance console output for the last start, restart, or shutdown of the instance is cached. You can call the `GetInstanceConsoleOutput` to monitor and analyze the instance exceptions.

Currently, the [phased-out instance types](#) cannot obtain the console output.

Moreover, Windows instances cannot obtain console output as well.

### Request parameters

| Name       | Type   | Required | Description                                                                                                                                     |
|------------|--------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Action     | String | Yes      | The name of this interface. Value: <code>GetInstanceConsoleOutput</code> .                                                                      |
| RegionId   | String | Yes      | ID of the region where the ECS instance is located. For more information, use <a href="#">DescribeRegions</a> to obtain the latest region list. |
| InstanceId | String | Yes      | Instance ID.                                                                                                                                    |

### Response parameters

| Name           | Type   | Description                                                                                                                                                                                                           |
|----------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| InstanceId     | String | ID of the instance.                                                                                                                                                                                                   |
| ConsoleOutput  | String | The instance console output of the instance, in Base64 encoding.                                                                                                                                                      |
| LastUpdateTime | String | The time the instance was last started, restarted, or shut down. The value of this parameter uses the offset UTC +0 and is expressed according to the <a href="#">ISO8601</a> standard. Format: YYYY-MM-DDTHH:mm:ssZ. |

### Examples

#### Request example

```
http://ecs-cn-hangzhou.aliyuncs.com/?Action=GetInstanceConsoleOutput
&RegionId=cn-shenzhen-finance-1
&InstanceId=i-j5e42sbbthlokka11eci
```

&<Common Request Parameters>

### Success response example

#### XML format

```
<GetInstanceConsoleOutputResponse>
  <RequestId>22A1933F-AD02-4560-A6A7-53CF2231D942</RequestId>
  <InstanceId>i-j5e42sbbthlokka11ech</InstanceId>
  <LastUpdateTime>2018-03-22 10:04:57</LastUpdateTime>
  <ConsoleOutput>V2VsY29tZSB0byBDZW50T1MgCgpDaGVja2luZyBmawxl3lzdG
VtcwPdaGVja2luZyBhbGwgZmlsZSBzeXN0ZW1zLgpbL3NiaW4vZnNjay5leHQ0ICgxKSA
tLSAvXSbmc2NrLmV4dDQgLWegL2Rldi92ZGExIAovZGV2L3ZkYTE6IGNsZWFuLCAzMjAxNi
8yNjIXNDQwIGZpbGVzLCA0NDc5NzQvMTA0ODU1MDQgYmxvY2tzCgpFbnRlcmLuZyBub24t
aw50ZXJhY3RpdmUgc3RhcncR1cApDYWxsaw5nIHRoZSBzeXN0ZW0gYWN0aXZpdHkgZGF0YS
Bjb2xsZWNoY3IgaXNhZGMPli4uIAoKQnJpbmdpbmcgdXAgaw50ZXJmYWNLIGV0aDA6ICAK
RGV0ZXJtaW5pbmcgSVAgaw5mb3JtYXRpb24gZm9yIGV0aDAuLi4gZG9uZS4KcmFsaXl1bi
1zZXJ2aWNLIHNOYXJ0L3J1bm5pbmcsIHByb2Nlc3MgMTczMwpmaW5pc2hlZAoKQ2VudE9T
IHJlbGVhc2UgNi44ICgaw5hbCkKS2VybmVsIDIuNi4zMj02OTYuMy4yLmVsNi5pNjg2IG
9uIGFuIGk2ODYKcmIaMnplZDk2ZTQ2MmF5cjBxemw2czhaIGxvZ2lu0g==</ConsoleOut
put>
</GetInstanceConsoleOutputResponse>
```

#### JSON format

```
{
  "RequestId": "22A1933F-AD02-4560-A6A7-53CF2231D942",
  "InstanceId": "i-j5e42sbbthlokka11ech",
  "LastUpdateTime": "2018-03-22 10:04:57",
  "ConsoleOutput": "V2VsY29tZSB0byBDZW50T1MgCgpDaGVja2luZyBm
awxl3lzdGVtcwPdaGVja2luZyBhbGwgZmlsZSBzeXN0ZW1zLgpbL3NiaW4vZnNjay5leH
Q0ICgxKSA tLSAvXSbmc2NrLmV4dDQgLWegL2Rldi92ZGExIAovZGV2L3ZkYTE6IGNsZWFu
LCAzMjAxNi8yNjIXNDQwIGZpbGVzLCA0NDc5NzQvMTA0ODU1MDQgYmxvY2tzCgpFbnRlcm
LuZyBub24taw50ZXJhY3RpdmUgc3RhcncR1cApDYWxsaw5nIHRoZSBzeXN0ZW0gYWN0aXZp
dHkgZGF0YSBjb2xsZWNoY3IgaXNhZGMPli4uIAoKQnJpbmdpbmcgdXAgaw50ZXJmYWNLIG
V0aDA6ICAKRGV0ZXJtaW5pbmcgSVAgaw5mb3JtYXRpb24gZm9yIGV0aDAuLi4gZG9uZS4K
cmFsaXl1bi1zZXJ2aWNLIHNOYXJ0L3J1bm5pbmcsIHByb2Nlc3MgMTczMwpmaW5pc2hlZA
oKQ2VudE9TIHJlbGVhc2UgNi44ICgaw5hbCkKS2VybmVsIDIuNi4zMj02OTYuMy4yLmVs
Ni5pNjg2IG9uIGFuIGk2ODYKcmIaMnplZDk2ZTQ2MmF5cjBxemw2czhaIGxvZ2lu0g=="
}
```

### Error response example

#### XML format

```
<Error>
  <RequestId>C38E0D94-C18B-44F3-8C05-6E35BE334088</RequestId>
  <HostId>ecs.aliyuncs.com</HostId>
  <Code>NotSupported</Code>
  <Message>The operation is not supported for "i-j5e42sbbth
lokkaXXXXX".</Message>
</Error>
```

#### JSON format

```
{
  "RequestId": "C38E0D94-C18B-44F3-8C05-6E35BE334088",
  "HostId": "ecs.aliyuncs.com",
```

```

    "Code": "NotSupported",
    "Message": "The operation is not supported for \"i-j5e42sbbth
lokkaXXXXX\"."
}

```

## Error codes

Error codes specific to this interface are as follows.

| Error code              | Error message                                                                                   | HTTP status code | Description                                                    |
|-------------------------|-------------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------|
| MissingParameter        | The input parameter “instanceId” that is mandatory for processing this request is not supplied. | 400              | InstanceId is required.                                        |
| InvalidParameter        | The “instanceId” provided is not valid.                                                         | 404              | The specified InstanceId does not exist.                       |
| IncorrectInstanceStatus | The instance status “{status}” is not applicable                                                | 405              | The specified instance has been released or stopped.           |
| NotSupported            | The operation is not supported for “{instanceId}”                                               | 405              | <i>Phased-out instance types</i> cannot obtain console output. |

# 17 Cloud assistants

## 17.1 CreateCommand

Creates a command. You can perform the command by using cloud assistant.

### Description

- You can only create commands of the following types:
  - Bat scripts for Windows instances (`RunBatScript`).
  - PowerShell scripts for Windows instances (`RunPowerShellScript`).
  - Shell scripts for Linux instances (`RunShellScript`).
- You can specify the `Timeout` parameter to set the maximum timeout value for command invocation on ECS instances. When the command invocation times out, the *client* forces the command process to stop.
  - For one-time invocation, after an invocation timeout, the command invocation status ( [InvokeRecordStatus](#)) for the specified ECS instance becomes `Failed`.
  - For periodical invocation:
    - The timeout value of periodical invocation is effective for every invocation record.
    - After one invocation operation times out, the status for the invocation record ( [InvokeRecordStatus](#)) becomes `Failed`.
    - The timeout status of last invocation does not affect the next invocation.
- You can specify the `WorkingDir` parameter to specify the invocation path of the command. For Linux instances, commands are performed in the `/root` directory by default. For Windows instances, commands are performed in the directory where the cloud assistant client process is located, such as `C:\ProgramData\aliyun\assist\$(version)`.
- You can create 100 commands at maximum under a Alibaba Cloud Region.



#### Note:

If you require a higher quota of commands, please [submit a ticket](#) to apply for.

### Request parameters

| Name   | Type   | Required | Description                                                     |
|--------|--------|----------|-----------------------------------------------------------------|
| Action | String | Yes      | The name of this interface. Value: <code>CreateCommand</code> . |

| Name           | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------|---------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RegionId       | String  | Yes      | The region ID. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                                                                                                                                                                                                                                    |
| Name           | String  | Yes      | Command name. Supporting all the character encoding sets.                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Type           | String  | Yes      | Command type. RunBatScript: Creates a Bat script for Windows instances. RunPowerShellScript: Creates a PowerShell script for Windows instances. RunShellScript: Creates a Shell script for Linux instances. Optional values: <ul style="list-style-type: none"> <li>RunBatScript: Creates a Bat script for Windows instances.</li> <li>RunPowerShellScript: Creates a PowerShell script for Windows instances.</li> <li>RunShellScript: Creates a Shell script for Linux instances.</li> </ul> |
| Description    | String  | No       | Command description. Supporting all the character encoding sets.                                                                                                                                                                                                                                                                                                                                                                                                                               |
| CommandContent | String  | No       | The Base64-encoded content of the command. You must pass in this parameter at the same time when you pass in the Type request parameter. The parameter value must be Base64-encoded for transmission and the script content size before the Base64 encoding cannot exceed 16 KB.                                                                                                                                                                                                               |
| WorkingDir     | String  | No       | The directory where your created command runs on the ECS instances. Default value: <ul style="list-style-type: none"> <li>For Linux instances, commands are performed in the <code>/root</code> directory.</li> <li>For Windows instances, commands are performed in the directory where the cloud assistant client process is located, such as <code>C:\ProgramData\aliyun\assist\\$(version)</code>.</li> </ul>                                                                              |
| TimeOut        | Integer | No       | The invocation timeout value of the command. The unit is seconds. When the command fails to run for some reason, the invocation may time out, after which the cloud assistant client forces the command process to stop by canceling the command PID. The parameter value must be greater than or equal to 60                                                                                                                                                                                  |



| Name | Type | Required | Description                                                                                            |
|------|------|----------|--------------------------------------------------------------------------------------------------------|
|      |      |          | . If the value is smaller than 60, the timeout value is 60 seconds by default.<br>Default value: 3600. |

### Response parameters

| Name      | Type   | Description |
|-----------|--------|-------------|
| CommandId | String | Command ID. |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=CreateCommand
&RegionId=cn-hangzhou
&Name=Test
&Type=RunShellScript
&CommandContent=ZWNoByAxMjM=
&<Common Request Parameters>
```

#### Success response example

##### XML format

```
<CreateCommandResponse>
  <RequestId>540CFF28-407A-40B5-B6A5-73Bxxxxxxxxx</RequestId>
  <CommandId>c-e996287206324975b5fbe1dxxxxxxxxx</CommandId>
</CreateCommandResponse>
```

##### JSON format

```
{
  "RequestId": "540CFF28-407A-40B5-B6A5-73Bxxxxxxxxx",
  "CommandId": "c-e996287206324975b5fbe1dxxxxxxxxx"
}
```

#### Error response example

##### XML format

```
<Error>
  <RequestId>540CFF28-407A-40B5-B6A5-74Bxxxxxxxxx</RequestId>
  <HostId>ecs.aliyuncs.com</HostId>
  <Code>MissingParameter.Name</Code>
  <Message>The input parameter "Name" that is mandatory for
processing this request is not supplied.</Message>
```

```
</Error>
```

### JSON format

```
{
  "RequestId": "540CFF28-407A-40B5-B6A5-74Bxxxxxxxxxx",
  "HostId": "ecs.aliyuncs.com"
  "Code": "MissingParameter.Name"
  "Message": "The input parameter \"Name\" that is mandatory for
processing this request is not supplied."
}
```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                | Error message                                                                                 | HTTP status code | Meaning                                                                                                    |
|---------------------------|-----------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------|
| Invalid.CommandContent    | The specified CommandContent is not valid or exceed max                                       | 400              | The specified CommandContent parameter is invalid. Or the CommandContent value exceeds 16 KB.              |
| MissingParameter.Name     | The input parameter "Name" that is mandatory for processing this request is not supplied.     | 400              | You must specify the required parameter Name.                                                              |
| MissingParameter.RegionId | The input parameter "RegionId" that is mandatory for processing this request is not supplied. | 400              | You must specify the required parameter RegionId. Or you cannot use the resources in the specified region. |
| MissingParameter.Type     | The input parameter "Type" that is mandatory for processing this request is not supplied.     | 400              | You must specify the required parameter Type.                                                              |
| InvalidCmdType.NotFound   | The specified command type does not exist                                                     | 404              | The specified Type parameter does not exist.                                                               |
| InvalidRegionId.NotFound  | The RegionId provided does not exist in our items.                                            | 404              | The specified RegionId does not exist.                                                                     |
| InternalError.Dispatch    | An internal error occurred when dispatch the request                                          | 500              | Internal error. Please try again later.                                                                    |

## 17.2 InstallCloudAssistant

Installs the cloud assistant client on one or more instances. After you call

**InstallCloudAssistant** and **RebootInstance**, the cloud assistant client takes effect.

### Request parameters

| Name        | Type   | Required | Description                                                                                                                                                                       |
|-------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action      | String | Yes      | The operation that you want to perform. Value: InstallCloudAssistant.                                                                                                             |
| RegionId    | String | Yes      | The ID of the region where the ECS instance is located. You can call <a href="#">DescribeRegions</a> to view the latest region list.                                              |
| InstanceIds | Array  | Yes      | The list of instance IDs. For example, if Python SDK is used, you can set the value to [InstanceId1, InstanceID2, InstanceID3...]. A single request supports up to 100 instances. |

### Response parameters

#### Examples

##### Request example

```
https://ecs.aliyuncs.com/?Action=InstallCloudAssistant
&RegionId=cn-hangzhou
&InstanceIds=["i-bp11f7trr4hbi1xxxxxx", "i-bp1iudwa5b1tqaxxxxxx"]
&<Common Request Parameters>
```

##### Response examples

##### XML format

```
<DeleteInstanceResponse>
  <RequestId>928E2273-5715-46B9-A730-238DC996A533</RequestId>
</DeleteInstanceResponse>
```

##### JSON format

```
{
  "RequestId": "928E2273-5715-46B9-A730-238DC996A533"
}
```

### Error codes

Error codes specific to this interface are as follows.

| Error code                   | Error message                                                                                    | HTTP status code | Description                                                                                       |
|------------------------------|--------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------|
| MissingParameter.RegionId    | The input parameter "RegionId" that is mandatory for processing this request is not supplied.    | 400              | The error message returned when RegionId is required, or you cannot use resources in that region. |
| MissingParameter.InstanceIds | The input parameter "InstanceIds" that is mandatory for processing this request is not supplied. | 400              | The error message returned when InstanceIds is required.                                          |
| InvalidInstance.NotFound     | The specified instances do not exist.                                                            | 404              | The error message returned when the specified InstanceId does not exist.                          |
| InvalidRegionId.NotFound     | The RegionId provided does not exist in our items.                                               | 404              | The error message returned when the specified RegionId does not exist.                            |

## 17.3 InvokeCommand

Performs a specified command on one or more ECS instances.

### Description

When you call this interface, consider the following:

- You can call this **InvokeCommand** action 100 times at maximum per day.



#### Note:

If you require a higher quota of invocations, please [submit a ticket](#) to apply for.

- The network type of the specified instances must be VPC.
- The target ECS instance must be in the **Running** (Running) status.
- The target ECS instance must have the [cloud assistant client](#) installed in advance.
- To perform a PowerShell command, make sure that the target Windows ECS instance has been configured with the PowerShell module.
- For one-time invocation (Timed=False), the command is performed only once.

- For periodical invocation (`Timed=True`), the first invocation task starts at the time specified in the `Frequency` parameter. Subsequent invocations follow the frequency specified in the `Frequency` parameter. The result of last invocation does not affect the next invocation.
- The scheduled time for periodical invocation is in UTC +08:00, and based on the system time of ECS instances. Make sure that the time on your ECS instances are consistent with your expectation.
- You can specify multiple ECS instances in the `InstanceIds`. When one of these instances does not comply with the invocation conditions, you can try again by specifying other instances.
- Command invocation may fail because of target instance status exception, network exception or cloud assistant client exception. No invocation information is generated for invocation failures.

### Request parameters

| Name        | Type    | Required | Description                                                                                                                                                                                                                                                                        |
|-------------|---------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action      | String  | Yes      | The name of this interface. Value: <code>InvokeCommand</code> .                                                                                                                                                                                                                    |
| RegionId    | String  | Yes      | The region ID. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                        |
| InstanceIds | Array   | Yes      | List of instances for command invocation. The parameter value is a formatted JSON array in the format of <code>[InstanceId1, instanceId2, ...]</code> . You can specify a maximum of 100 instance IDs separated by commas (,).                                                     |
| CommandId   | String  | Yes.     | Command ID. You can call the <a href="#">DescribeCommands</a> API to check all the available <code>CommandId</code> .                                                                                                                                                              |
| Timed       | Boolean | No       | Whether the command is periodically performed or not. Optional values: <ul style="list-style-type: none"> <li>• <code>True</code>: Periodical invocation.</li> <li>• <code>False</code>: Non-periodical invocation.</li> </ul> Default value: <code>False</code>                   |
| Frequency   | String  | No       | The invocation period of a periodical task. When the <a href="#">Timed</a> parameter value is <code>True</code> , the <code>Frequency</code> parameter is required. The parameter value observes the Cron expression. For more information, see <a href="#">Cron expressions</a> . |

## Response parameters

| Name     | Type   | Description            |
|----------|--------|------------------------|
| InvokeId | String | Command invocation ID. |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=InvokeCommand
&RegionId=cn-hangzhou
&InstanceIds=i-bp185dy2o3o6nxxxxxxx
&CommandId=c-e996287206324975b5fbe1dxxxxxxx
&Timed=true
&Frequency=0 0-5 14 * * ?
&<Common Request Parameters>
```

### Success response example

#### XML format

```
<InvokeCommandResponse>
  <RequestId>540CFF28-407A-40B5-B6A5-73Bxxxxxxx</RequestId>
  <InvokeId>t-1fad2a8876de47068cc734d5xxxxxxx</InvokeId>
</InvokeCommandResponse>
```

#### JSON format

```
{
  "RequestId": "540CFF28-407A-40B5-B6A5-73Bxxxxxxx",
  "InvokeId": "t-1fad2a8876de47068cc734d5xxxxxxx"
}
```

### Error response example

#### XML format

```
<Error>
  <RequestId>540CFF28-407A-40B5-B6A5-74Bxxxxxxx</RequestId>
  <HostId>ecs.aliyuncs.com</HostId>
  <Code>MissingParameter.CommandId</Code>
  <Message>The input parameter "CommandId" that is mandatory for
processing this request is not supplied.</Message>
</Error>
```

#### JSON format

```
{
  "RequestId": "540CFF28-407A-40B5-B6A5-74Bxxxxxxx",
  "HostId": "ecs.aliyuncs.com"
  "Code": "MissingParameter.CommandId"
  "Message": "The input parameter "CommandId" that is mandatory for
processing this request is not supplied."
```

}

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                   | Error message                                                                                    | HTTP status code | Meaning                                                                                                                                               |
|------------------------------|--------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| InvalidInstance.NoClient     | The specified instances have no cloud assistant client installed.                                | 400              | The target ECS instance must have the cloud assistant client installed in advance. For more information, see <a href="#">Cloud assistant client</a> . |
| InvalidInstance.NotVpc       | The specified instances must be VPC instances.                                                   | 400              | The network type of the specified InstanceIds must be VPC.                                                                                            |
| InvalidInstanceStatus        | The specified instance's status can not execute this operation                                   | 400              | The specified instance must be in the Running status. Or the specified instance has abnormal network connection.                                      |
| MissingParameter.CommandId   | The input parameter "CommandId" that is mandatory for processing this request is not supplied.   | 400              | You must specify the required parameter <code>CommandId</code> .                                                                                      |
| MissingParameter.InstanceIds | The input parameter "InstanceIds" that is mandatory for processing this request is not supplied. | 400              | You must specify the required parameter <code>InstanceIds</code> .                                                                                    |
| MissingParameter.RegionId    | The input parameter "RegionId" that is mandatory for processing this request is not supplied.    | 400              | You must specify the required parameter <code>RegionId</code> . Or you cannot use the resources in the specified <code>RegionId</code> .              |
| MissingParameter.Frequency   | The frequency parameter must exist when create a timed Invocation.                               | 400              | When the <code>Timed</code> parameter value is <code>True</code> , the <code>Frequency</code> parameter is required.                                  |

| Error code                 | Error message                                             | HTTP status code | Meaning                                               |
|----------------------------|-----------------------------------------------------------|------------------|-------------------------------------------------------|
| InvalidCmdId.NotFound      | The specified commandId does not exist.                   | 404              | The specified <code>CommandId</code> does not exist.  |
| InvalidInstanceId.NotFound | The specified instances does not exist.                   | 404              | The specified <code>InstanceId</code> does not exist. |
| InvalidRegionId.NotFound   | The RegionId provided does not exist in our items.        | 404              | The specified <code>RegionId</code> does not exist.   |
| InternalError.Dispatch     | An internal error occurred when dispatching your request. | 500              | Internal error. Please try again later.               |

## 17.4 StopInvocation

Stops cloud assistant command processes that are in **Running** (Running) status on ECS instances. When you call this interface, consider the following:

### Description

- After you stop a command process on one-time invocation, the invocation operations that have been started on instances proceed, and those that have not been started cease.
- After you stop a command process on periodical invocation, the invocation operations that have been started on instances proceed, but the invocation does not proceed to the next period.

### Request parameters

| Name        | Type   | Required | Description                                                                                                                                        |
|-------------|--------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Action      | String | Yes      | The name of this interface. Value: StopInvocation.                                                                                                 |
| RegionId    | String | Yes      | The region ID. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                        |
| InvokeId    | String | Yes      | Invocation ID of a command process. You can call <a href="#">DescribeInvocations</a> to obtain the latest InvokeId.                                |
| InstanceIds | Array  | No       | List of instances for stopping command invocation. The parameter value is a formatted JSON array in the format of [InstanceId1, InstanceId2, ...]. |



| Name | Type | Required | Description                                                            |
|------|------|----------|------------------------------------------------------------------------|
|      |      |          | You can specify a maximum of 100 instance IDs separated by commas (.). |

## Response parameters

All are common response parameters. See [Common response parameters](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=StopInvocation
&RegionId=cn-hangzhou
&InvokeId=t-1fad2a8876de47068cc734d57703aa76
&<Common Request Parameters>
```

### Success response example

#### XML format

```
<StopInvocationResponse>
  <RequestId>540CFF28-407A-40B5-B6A5-73Bxxxxxxxxx</RequestId>
</StopInvocationResponse>
```

#### JSON format

```
{
  "RequestId": "540CFF28-407A-40B5-B6A5-73Bxxxxxxxxx",
}
```

### Error response example

#### XML format

```
<Error>
  <RequestId>540CFF28-407A-40B5-B6A5-74Bxxxxxxxxx</RequestId>
  <HostId>ecs.aliyuncs.com</HostId>
  <Code>InvalidInstance.NoClient</Code>
  <Message>The specified instances have no cloud assistant client
installed.</Message>
</Error>
```

#### JSON format

```
{
  "RequestId": "540CFF28-407A-40B5-B6A5-74Bxxxxxxxxx",
  "HostId": "ecs.aliyuncs.com",
  "Code": "InvalidInstance.NoClient",
  "Message": "The specified instances have no cloud assistant client
installed."
```

}

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                   | Error message                                                                                   | HTTP status code | Description                                                                                                   |
|------------------------------|-------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------|
| InvalidInvokeId.NotFound     | The specified ImageId does not exist.                                                           | 400              | The specified InvokeId does not exist.                                                                        |
| MissingParameter.InstanceId  | The input parameter "InstanceId" that is mandatory for processing this request is not supplied. | 400              | You must specify the required parameter of InstanceIds.                                                       |
| MissingParameter.RegionId    | The input parameter "RegionId" that is mandatory for processing this request is not supplied.   | 400              | You must specify the required parameter of RegionId. Or you cannot use the resources in the specified region. |
| MissingParameter.InvokeId    | The input parameter "InvokeId" that is mandatory for processing this request is not supplied.   | 400              | You must specify the required parameter InvokeId.                                                             |
| InvalidRegionId.NotFound     | The RegionId provided does not exist in our items.                                              | 404              | The specified RegionId does not exist.                                                                        |
| InternalServerError.Dispatch | An internal error occurred when dispatch the request                                            | 500              | Internal error, please try later.                                                                             |

## 17.5 DeleteCommand

Deletes a created cloud assistant command. The log of the original invocation is retained after a command is deleted.

### Request parameters

| Name     | Type   | Required | Description                                                                                               |
|----------|--------|----------|-----------------------------------------------------------------------------------------------------------|
| Action   | String | Yes      | The name of this interface. Value: DeleteCommand.                                                         |
| RegionId | String | Yes      | Regional ID. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list. |

| Name      | Type   | Required | Description                                                                                             |
|-----------|--------|----------|---------------------------------------------------------------------------------------------------------|
| CommandId | String | Yes      | Command ID. You can query all the available CommandId by calling the <a href="#">DescribeCommands</a> . |

## Response parameters

All are common response parameters. See [Common response parameters](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DeleteCommand
&RegionId=cn-hangzhou
&InvokeId=c-f0902c0972984e31aaf2129fd48a9c6d
&<Common Request Parameters>
```

### Success response example

#### XML format

```
<DeleteCommandResponse>
  <RequestId>540CFF28-407A-40B5-B6A5-73Bxxxxxxxxx</RequestId>
</DeleteCommandResponse>
```

#### JSON format

```
{
  "RequestId": "540CFF28-407A-40B5-B6A5-73Bxxxxxxxxx",
}
```

### Error response example

#### XML format

```
<Error>
  <RequestId>540CFF28-407A-40B5-B6A5-74Bxxxxxxxxx</RequestId>
  <HostId>ecs.aliyuncs.com</HostId>
  <Code>InvalidInstance.NoClient</Code>
  <Message>The specified instances have no cloud assistant client
installed.</Message>
</Error>
```

#### JSON format

```
{
  "RequestId": "540CFF28-407A-40B5-B6A5-74Bxxxxxxxxx",
  "HostId": "ecs.aliyuncs.com",
  "Code": "InvalidInstance.NoClient",
  "Message": "The specified instances have no cloud assistant client
installed."
}
```

```
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code               | Error message                                        | HTTP status code | Description                             |
|--------------------------|------------------------------------------------------|------------------|-----------------------------------------|
| InvalidCmdId.NotFound    | The specified ImageId does not exist.                | 404              | The specified CommandId does not exist. |
| InvalidRegionId.NotFound | The RegionId provided does not exist in our items.   | 404              | The specified RegionId does not exist.  |
| Internalerror.Dispatch   | An internal error occurred when dispatch the request | 500              | Internal error. Please try again later. |

## 17.6 DescribeCloudAssistantStatus

Checks whether the cloud assistant client is installed or not on one or more instances.

### Request parameters

| Name         | Type   | Required | Description                                                                                                                          |
|--------------|--------|----------|--------------------------------------------------------------------------------------------------------------------------------------|
| Action       | String | Yes      | The operation that you want to perform. Value: DescribeCloudAssistantStatus.                                                         |
| RegionId     | String | Yes      | The ID of the region where the ECS instance is located. You can call <a href="#">DescribeRegions</a> to view the latest region list. |
| InstanceId.N | Array  | Yes      | The list of instance IDs. A single request supports up to 20 instances, therefore, the N can be set to [1, 20].                      |

### Response parameters

| Name                         | Type                                            | Description                                                            |
|------------------------------|-------------------------------------------------|------------------------------------------------------------------------|
| InstanceCloudAssistantStatus | <a href="#">InstanceCloudAssistantStatusSet</a> | A set of installation statuses of the cloud assistant in the instance. |

### InstanceCloudAssistantStatusSet

| Name                | Type    | Description                                                            |
|---------------------|---------|------------------------------------------------------------------------|
| InstanceId          | String  | A set of installation statuses of the cloud assistant in the instance. |
| CloudAssitantStatus | Boolean | Indicates whether the cloud assistant is installed on the instance.    |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeCloudAssistantStatus
&RegionId=cn-hangzhou
&InstanceId.N="i-bp11f7trr4hbi1xxxxxx"
&InstanceId.N="i-bp1iudwa5b1tqaxxxxxx"
&<Common Request Parameters>
```

### Response examples

#### XML format

```
<DescribeCloudAssistantStatusResponse>
  <InstanceCloudAssitantStatus>
    <InstanceCloudAssitantStatusSet>
      <InstanceId>i-bp11f7trr4hbi1xxxxxx</InstanceId>
      <CloudAssitantStatus>True</CloudAssitantStatus>
    </InstanceCloudAssitantStatusSet>
    <InstanceCloudAssitantStatusSet>
      <InstanceId>i-bp1iudwa5b1tqaxxxxxx</InstanceId>
      <CloudAssitantStatus>True</CloudAssitantStatus>
    </InstanceCloudAssitantStatusSet>
  </InstanceCloudAssitantStatus>
</DescribeCloudAssistantStatusResponse>
```

#### JSON format

```
{
  "InstanceCloudAssitantStatus": {
    "InstanceCloudAssitantStatusSet": [
      {
        "InstanceId": "i-bp11f7trr4hbi1xxxxxx",
        "CloudAssitantStatus": "True"
      },
      {
        "InstanceId": "i-bp1iudwa5b1tqaxxxxxx",
        "CloudAssitantStatus": "True"
      }
    ]
  }
}
```

## Error codes

Error codes specific to this interface are as follows.

| Error code                   | Error message                                                                                    | HTTP status code | Description                                                                                       |
|------------------------------|--------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------|
| MissingParameter.InstanceIds | The input parameter "InstanceIds" that is mandatory for processing this request is not supplied. | 400              | The error message returned when InstanceIds is required.                                          |
| MissingParameter.RegionId    | The input parameter "RegionId" that is mandatory for processing this request is not supplied.    | 400              | The error message returned when RegionId is required, or you cannot use resources in that region. |
| InvalidInstance.NotFound     | The specified instances do not exist.                                                            | 404              | The error message returned when the specified InstanceId does not exist.                          |
| InvalidRegionId.NotFound     | The RegionId provided does not exist in our items.                                               | 404              | The error message returned when the specified RegionId does not exist.                            |

## 17.7 DescribeCommands

Queries the cloud assistant commands that you have created. If you only specify the `Action` and `RegionId` parameters, Alibaba Cloud ECS queries all your available commands (`CommandId`) by default.

### Request parameters

| Name      | Type   | Required | Description                                                                                   |
|-----------|--------|----------|-----------------------------------------------------------------------------------------------|
| Action    | String | Yes      | The name of this interface. Value: DescribeCommands.                                          |
| RegionId  | String | Yes      | The region ID. You can call <a href="#">DescribeRegions</a> to obtain the latest region list. |
| CommandId | String | No       | Command ID.                                                                                   |

| Name        | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                      |
|-------------|---------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type        | String  | No       | Command type.<br>Optional values: <ul style="list-style-type: none"> <li>RunBatScript: The command process is a Bat script for Windows instances.</li> <li>RunPowerShellScript: The command process is a PowerShell script for Windows instances.</li> <li>RunShellScript: The command process is a Shell script for Linux instances.</li> </ul> |
| Name        | String  | No       | Command name<br>, fuzzy search temporarily not supported.                                                                                                                                                                                                                                                                                        |
| Description | String  | No       | Command description, fuzzy search temporarily not supported.                                                                                                                                                                                                                                                                                     |
| PageNumber  | Integer | No       | Current page number.<br>Start value: 1.<br>Default value: 1.                                                                                                                                                                                                                                                                                     |
| PageSize    | Integer | No       | The number of rows per page for multi-page display.<br>Maximum value: 50.<br>Default value: 10.                                                                                                                                                                                                                                                  |

### Response parameters

| Name       | Type    | Description               |
|------------|---------|---------------------------|
| TotalCount | Integer | Total number of commands. |

| Name       | Type    | Description                                                  |
|------------|---------|--------------------------------------------------------------|
| Pagenumber | Integer | Command list page number.                                    |
| Pagesize   | Integer | The number of rows per page.                                 |
| Commands   | Array   | Type of command data set ( <a href="#">CommandSetType</a> ). |

### CommandSetType

| Name    | Type  | Description                                   |
|---------|-------|-----------------------------------------------|
| Command | Array | Command type ( <a href="#">CommandType</a> ). |

### CommandType

| Name           | Type    | Description                                                 |
|----------------|---------|-------------------------------------------------------------|
| CommandId      | String  | Command ID.                                                 |
| Name           | String  | Command name.                                               |
| Description    | String  | Command description.                                        |
| Type           | String  | Command type.                                               |
| Commandcontent | String  | Command content, transmitted in the Base64-encoded format . |
| WorkingDir     | String  | Invocation path.                                            |
| TimeOut        | Integer | Timeout.                                                    |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeCommands
&RegionId=cn-hangzhou
&<Common Request Parameters>
```

### Success response example

#### XML format

```
<DescribeCommandsResponse>
  <TotalCount>5</TotalCount>
  <Commands>
    <Command>
      <Name>Test</Name>
      <WorkingDir></WorkingDir>
```



```

        <CommandContent>ZWNobyAxMjM= </CommandContent>
        <Timeout>3600 </Timeout>
        <Type>RunShellScript </Type>
        <CommandId>c-05946950bc63441dab0a72b8xxxxxxx </
CommandId>
        <Description>test </Description>
    </Command>
    <Command>
        <Name>Test1 </Name>
        <WorkingDir> </WorkingDir>
        <CommandContent>Y2QgL3Jvb3Q= </CommandContent>
        <Timeout>3600 </Timeout>
        <Type>RunShellScript </Type>
        <CommandId>c-53253cb556d74cb7b7f7309fdxxxxxxx </
CommandId>
        <Description>test1 </Description>
    </Command>
    <Command>
        <Name>Test2 </Name>
        <WorkingDir> </WorkingDir>
        <CommandContent>eXVtIHVwZGF0ZQ== </CommandContent>
        <Timeout>3600 </Timeout>
        <Type>RunShellScript </Type>
        <CommandId>c-57881b01e5ec4403916f8685xxxxxxx </
CommandId>
        <Description>test2 </Description>
    </Command>
    <Command>
        <Name>Test3 </Name>
        <WorkingDir> </WorkingDir>
        <CommandContent>c2VydmVwZSBUZ2lueCByZWxvYWQ= </
CommandContent>
        <Timeout>3600 </Timeout>
        <Type>RunShellScript </Type>
        <CommandId>c-742eea007af14043b07c4978xxxxxxx </
CommandId>
        <Description>test3 </Description>
    </Command>
    <Command>
        <Name>Test4 </Name>
        <WorkingDir> </WorkingDir>
        <CommandContent>bHM= </CommandContent>
        <Timeout>120 </Timeout>
        <Type>RunShellScript </Type>
        <CommandId>c-cec3ded3bc434c22aabcfeaaxxxxxxxx </
CommandId>
        <Description>test4 </Description>
    </Command>
    <PageNumber>1 </PageNumber>
    <RequestId>36443468-4AE5-44DB-A6FE-A528xxxxxxx </RequestId>
    <PageSize>10 </PageSize>
</DescribeCommandsResponse>

```

### JSON format

```

{
  "TotalCount": 5,
  "Commands": {
    "Command": [
      {
        "Name": "Test",

```

```

        "WorkingDir": "",
        "CommandContent": "ZWNobyAxMjM=",
        "Timeout": 3600,
        "Type": "RunShellScript",
        "CommandId": "c-05946950bc63441dab0a72b8xxxxxxxx",
        "Description": "test"
    },
    {
        "Name": "Test1",
        "WorkingDir": "",
        "CommandContent": "Y2QgL3Jvb3Q=",
        "Timeout": 3600,
        "Type": "RunShellScript",
        "CommandId": "c-53253cb556d74cb7b7f7309fxxxxxxxx",
        "Description": "test1"
    },
    {
        "Name": "Test2",
        "WorkingDir": "",
        "CommandContent": "eXVtIHVwZGF0ZQ==",
        "Timeout": 3600,
        "Type": "RunShellScript",
        "CommandId": "c-57881b01e5ec4403916f8685xxxxxxxx",
        "Description": "test2"
    },
    {
        "Name": "Test3",
        "WorkingDir": "",
        "CommandContent": "c2VydmljZSBuZ2lueCBYZWxvYWQ=",
        "Timeout": 3600,
        "Type": "RunShellScript",
        "CommandId": "c-742eea007af14043b07c4978xxxxxxxx",
        "Description": "test3"
    },
    {
        "Name": "Test4",
        "WorkingDir": "",
        "CommandContent": "bHM=",
        "Timeout": 3600,
        "Type": "RunShellScript",
        "CommandId": "c-cec3ded3bc434c22aabcfeaxxxxxxxxx",
        "Description": "test4"
    }
],
    "PageNumber": 1,
    "RequestId": "36443468-4AE5-44DB-A6FE-A528xxxxxxxx",
    "PageSize": 10
}

```

### Error response example

#### XML format

```

<Error>
  <RequestId>540CFF28-407A-40B5-B6A5-74Bxxxxxxxx</RequestId>
  <HostId>ecs.aliyuncs.com</HostId>
  <Code>MissingParameter.RegionId</Code>
  <Message>The input parameter "RegionId" that is mandatory for
processing this request is not supplied.</Message>

```

```
</Error>
```

### JSON format

```
{
  "RequestId": "540CFF28-407A-40B5-B6A5-74Bxxxxxxxxx",
  "HostId": "ecs.aliyuncs.com"
  "Code": "MissingParameter.RegionId"
  "Message": "The input parameter \"RegionId\" that is mandatory for
processing this request is not supplied."
}
```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                | Error message                                                                                 | HTTP status code | Meaning                                                                                                    |
|---------------------------|-----------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------|
| MissingParameter.RegionId | The input parameter "RegionId" that is mandatory for processing this request is not supplied. | 400              | You must specify the required parameter RegionId, or you cannot use the resources in the specified region. |
| InvalidRegionId.NotFound  | The RegionId provided does not exist in our items.                                            | 404              | The specified RegionId parameter does not exist.                                                           |
| InternalError.Dispatch    | An internal error occurred when dispatch the request                                          | 500              | Internal error. Please try again later.                                                                    |

## 17.8 DescribeInvocations

Queries the cloud assistant command invocation list and status on your ECS instances.

### Description

When the InvokeStatus value is Finished, it indicates that the command process is Finished, but not necessarily is as effective as expected. You can check the specific invocation result by calling [DescribeInvocationResults](#).

### Request parameters

| Name   | Type   | Required | Description                                             |
|--------|--------|----------|---------------------------------------------------------|
| Action | String | Yes      | The name of this interface. Value: DescribeInvocations. |

| Name         | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------|---------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RegionId     | String  | Yes      | The region ID. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| InvokeId     | String  | No       | Invocation ID of a command process.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| CommandId    | String  | No       | Command ID. You can query all the available CommandId by calling the <a href="#">DescribeCommands</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| CommandName  | String  | No       | Name of the command.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Type         | String  | No       | Type of the command. Optional values: <ul style="list-style-type: none"> <li>RunBatScript: A Bat script for Windows instances</li> <li>RunPowerShellScript: A PowerShell script for Windows instances.</li> <li>RunShellScript: A Shell script for Linux instances.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Timed        | Boolean | No       | Whether the command is periodically performed or not. Optional values: <ul style="list-style-type: none"> <li>True: Periodical invocation.</li> <li>False: Not periodical invocation.</li> </ul> Default value: False.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| InvokeStatus | String  | No       | Specifies the overall invocation status of a command. The overall invocation status is depends on the invocation status of command processes on all target instances. Optional values: <ul style="list-style-type: none"> <li>Running: The command process is running. <ul style="list-style-type: none"> <li><b>Periodical invocation:</b> Before you manually stop a command on periodical invocation, the command process is always in the <b>Running</b> (Running) status.</li> <li><b>One-time invocation:</b> The overall invocation status is <b>Running</b> (Running), as long as the command process is in the <b>Running</b> (Running) status on any target instance.</li> </ul> </li> <li>Finished: The invocation of the command process is completed. <ul style="list-style-type: none"> <li><b>Periodical invocation:</b> The command process can never be in the <b>Finished</b> (Finished) status.</li> </ul> </li> </ul> |

| Name       | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |        |          | <p>— <b>One-time invocation:</b> When invocation of command processes on all the target instances managed by the specified command is completed, the overall invocation status is <b>Finished</b> (Finished).</p> <p>Or when you manually stop the invocation of command processes on some target instances (Stopped) and the invocation on other target instances is completed, the overall invocation status is <b>Finished</b> (Finished).</p> <ul style="list-style-type: none"> <li>Failed: The command process invocation failed, the command process timed out, or encountered other exceptions.</li> </ul> <p>— <b>Periodical invocation:</b> The command process can never be in the <b>Failed</b> (Failed) status.</p> <p>— <b>One-time invocation:</b> When invocation of command processes on all the target instances managed by the specified command fails, the overall invocation status is <b>Failed</b> (Failed).</p> <ul style="list-style-type: none"> <li>PartialFailed: Part of the invocation of command processes failed.</li> </ul> <p>— <b>Periodical invocation:</b> The command process can never be in the <b>PartialFailed</b> (PartialFailed) status.</p> <p>— <b>One-time invocation:</b> The overall invocation status is <b>PartialFailed</b> (PartialFailed) when any command process is in the <b>Failed</b> (Failed) status on any target instance managed by the specified command.</p> <ul style="list-style-type: none"> <li>Stopped: The command process is manually stopped.</li> </ul> |
| InstanceId | String | No       | Instance ID. When you pass in the parameter, the system queries the invocation-record status of all commands on the instance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| Name       | Type    | Required | Description                                                                                     |
|------------|---------|----------|-------------------------------------------------------------------------------------------------|
| PageNumber | Integer | No       | Current page number. Start value: 1.<br>Default value: 1.                                       |
| PageSize   | Integer | No       | The number of rows per page for multi-page display.<br>Maximum value: 50.<br>Default value: 10. |

### Response parameters

| Name        | Type                                         | Description                                |
|-------------|----------------------------------------------|--------------------------------------------|
| TotalCount  | Integer                                      | Total number of commands.                  |
| PageNumber  | Integer                                      | Page number of the query result.           |
| PageSize    | Integer                                      | The number of rows per page.               |
| Invocations | Array of <a href="#">Invocation Set Type</a> | Type of the command invocation record set. |

### Type of the command invocation record set (InvocationSetType)

| Name       | Type                                     | Description              |
|------------|------------------------------------------|--------------------------|
| Invocation | Array of <a href="#">Invocation Type</a> | Command invocation type. |

### Command invocation type (InvocationType)

| Name         | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| InvokeId     | String | Command invocation ID.                                                                                                                                                                                                                                                                                                                                                                                                                         |
| CommandId    | String | Command ID.                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| CommandName  | String | Command name.                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| InvokeStatus | String | Specifies the overall invocation status of a command. The overall invocation status is dependent on the invocation status of command processes on all the target instances. <a href="#">InstanceInvokeStatus</a> . Optional values: <ul style="list-style-type: none"> <li>Running: The command process is running.</li> <li><b>Periodical invocation:</b> Before you manually stop a command on periodical invocation, the command</li> </ul> |

| Name | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |      | <p>process is always in the <b>Running</b> (Running) status.</p> <ul style="list-style-type: none"> <li>— <b>One-time invocation:</b> The overall invocation status is <b>Running</b> (Running), as long as the command process is in the <b>Running</b> (Running) status on any target instance.</li> <li>• <b>Finished:</b> The invocation of the command process is completed.</li> <li>— <b>Periodical invocation:</b> The command process can never be in the <b>Finished</b> (Finished) status.</li> <li>— <b>One-time invocation:</b> When invocation of command processes on all the target instances managed by the specified command is completed, the overall invocation status is <b>Finished</b> (Finished).</li> </ul> <p>Or when you manually stop the invocation of command processes on some target instances <b>Stopped</b> (Stopped), and the invocation on other target instances is completed, the overall invocation status is <b>Finished</b> (Finished).</p> <ul style="list-style-type: none"> <li>• <b>Failed:</b> The command process invocation failed, the command process timed out, or encountered other exceptions.</li> <li>— <b>Periodical invocation:</b> The command process can never be in the <b>Failed</b> (Failed) status.</li> <li>— <b>One-time invocation:</b> When invocation of command processes on all the target instances managed by the specified command fails, the overall invocation status is <b>Failed</b> (Failed).</li> <li>• <b>PartialFailed:</b> Part of the invocation of command processes failed.</li> <li>— <b>Periodical invocation:</b> The command process can never be in the <b>PartialFailed</b> (PartialFailed) status.</li> <li>— <b>One-time invocation:</b> The overall invocation status is <b>PartialFailed</b> (PartialFailed) when any command process is in the <b>Failed</b> (Failed</li> </ul> |

| Name            | Type                                           | Description                                                                                                                                                                  |
|-----------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |                                                | <p>) status on any target instance managed by the specified command.</p> <ul style="list-style-type: none"> <li>Stopped: The command process is manually stopped.</li> </ul> |
| CommandType     | String                                         | Command type                                                                                                                                                                 |
| Timed           | Boolean                                        | Whether the command is periodically performed or not.                                                                                                                        |
| Frequency       | String                                         | <p>The interval of a periodical task.</p> <p>For more information about the value specifications, see <a href="#">Cron expression</a>.</p>                                   |
| InvokeInstances | Array of <a href="#">InvokeInstanceSetType</a> | Type of the target instance set for invocation.                                                                                                                              |

#### Type of the target instance set for invocation (InvokeInstanceSetType)

| Name           | Type                                        | Description                                    |
|----------------|---------------------------------------------|------------------------------------------------|
| InvokeInstance | Array of <a href="#">InvokeInstanceType</a> | Invocation status type of the target instance. |

#### Invocation status type of the target instance (InvokeInstanceType)

| Name                 | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| InstanceId           | String | Instance ID.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| InstanceInvokeStatus | String | <p>The command process status of the specified instance.</p> <ul style="list-style-type: none"> <li>Running: The command process is running. <ul style="list-style-type: none"> <li><b>Periodical invocation:</b> Before you manually stop a command on periodical invocation, the command process is always in the <b>Running</b> (<b>Running</b>) status.</li> <li><b>One-time invocation:</b> The command process status on the specified instance is <b>Running</b> (<b>Running</b>).</li> </ul> </li> <li>Finished: The invocation of the command process is completed. <ul style="list-style-type: none"> <li><b>Periodical invocation:</b> The command process can never be in the <b>Finished</b> (<b>Finished</b>) status.</li> </ul> </li> </ul> |



| Name | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |      | <ul style="list-style-type: none"> <li>— <b>One-time invocation:</b> The command process status on the specified instance is <b>Finished</b> (Finished).</li> <li>• Failed: The command process invocation failed, the command process timed out, or encountered other exceptions.</li> <li>— <b>Periodical invocation:</b> The command process can never be in the <b>Failed</b> (Failed) status.</li> <li>— <b>One-time invocation:</b> The command process status on the specified instance is <b>Failed</b> (Failed).</li> <li>• Stopped: The command process is manually stopped.</li> </ul> |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeInvocations
&RegionId=cn-hangzhou
&<Common Request Parameters>
```

### Success response example

### XML format

```
<DescribeInvocationsResponse>
  <TotalCount>5</TotalCount>
  <PageNumber>1</PageNumber>
  <PageSize>10</PageSize>
  <Invocations>
    <Invocation>
      <InvokeStatus>Running</InvokeStatus>
      <InvokeId>t-a8935b93739442e59ed621a6xxxxxxx</InvokeId>
    >
      <CommandName>Test1</CommandName>
      <CommandType>RunShellScript</CommandType>
      <Frequency>0 */20 * * * *</Frequency>
      <InvokeInstances>
        <InvokeInstance>
          <InstanceId>i-uf614fhehhzmxxxxxxx</InstanceId>
        >
          <InstanceInvokeStatus>finished</InstanceIn
vokeStatus>
        </InvokeInstance>
        <InvokeInstance>
          <InstanceId>i-uf64isakb713xxxxxxx</InstanceId>
        >
          <InstanceInvokeStatus>running</InstanceIn
vokeStatus>
        </InvokeInstance>
      </InvokeInstances>
```

```

        <Timed>True</Timed>
        <CommandId>c-e67505b2be3e477dae94c0f0xxxxxxx</
CommandId>
    </Invocation>
    <Invocation>
        <InvokeStatus>Running</InvokeStatus>
        <InvokeId>t-001937b74e2a4242891fc789xxxxxxx</InvokeId
>
        <CommandName>Test2</CommandName>
        <CommandType>RunShellScript</CommandType>
        <Frequency>0 */15 * * * *</Frequency>
        <InvokeInstances>
            <InvokeInstance>
                <InstanceId>i-mbhsiukj851xxxxjk</InstanceId>
                <InstanceInvokeStatus>finished</InstanceIn
vokeStatus>
            </InvokeInstance>
            <InvokeInstance>
                <InstanceId>i-uf64isakb713xxxxxxx</InstanceId
>
                <InstanceInvokeStatus>Running</InstanceIn
vokeStatus>
            </InvokeInstance>
        </InvokeInstances>
        <Timed>True</Timed>
        <CommandId>c-6b0fb9d72adc421abab462abxxxxxxx</
CommandId>
    </Invocation>
    <Invocation>
        <InvokeStatus>success</InvokeStatus>
        <InvokeId>t-bd09beef975b4e50883e5df1xxxxxxx</InvokeId
>
        <CommandName>Test3</CommandName>
        <CommandType>RunShellScript</CommandType>
        <Frequency> </Frequency>
        <InvokeInstances>
            <InvokeInstance>
                <InstanceId>i-uf614fhehhzmxxxxxxx</InstanceId
>
                <InstanceInvokeStatus>finished</InstanceIn
vokeStatus>
            </InvokeInstance>
            sa<InvokeInstance>
                <InstanceId>i-uf64isakb713xxxxxxx</InstanceId
>
                <InstanceInvokeStatus>finished</InstanceIn
vokeStatus>
            </InvokeInstance>
        </InvokeInstances>
        <Timed>false</Timed>
        <CommandId>c-6b0fb9d72adc421abab462abxxxxxxx</
CommandId>
    </Invocation>
    <Invocation>
        <InvokeStatus>Success</InvokeStatus>
        <InvokeId>t-c7499dfdfdb44e8aa0acce5bxxxxxxx</InvokeId
>
        <CommandName>test</CommandName>
        <CommandType>RunShellScript</CommandType>
        <Frequency> </Frequency>
        <InvokeInstances>
            <InvokeInstance>

```

```

        <InstanceId>i-uf614fhehhzmxxxxxxx</InstanceId>
    >
        <InstanceInvokeStatus>finished</InstanceIn
vokeStatus>
        </InvokeInstance>
    </InvokeInstances>
    <Timed>>false</Timed>
    <CommandId>c-d2a8ccf6440641ec8635f194xxxxxxx</
CommandId>
    </Invocation>
    <InstanceId>Invention>
        <InvokeStatus>Running</InvokeStatus>
        <InvokeId>t-e733d4172fee452c98106f58xxxxxxx</InvokeId>
    >
        <CommandName>Test4</CommandName>
        <CommandType>RunBatScript</CommandType>
        <Frequency> </Frequency>
        <InvokeInstances>
            <InvokeInstance>
                <InstanceId>i-uf614fhehhzmxxxxxxx</InstanceId>
            >
                <Instanceinvokestatus> running </instancein
vokestatus>
            </InvokeInstance>
        </InvokeInstances>
        <Timed>>false</Timed>
        <CommandId>c-3f0e5e4a21c045afa197e036xxxxxxx</
CommandId>
    </Invocation>
</Invocations>
    <RequestId>12E7974A-5AA5-4933-A44C-A16Cxxxxxxx</RequestId>
</DescribeInvocationsResponse>

```

### JSON format

```

{
    "TotalCount": 5,
    "PageNumber": 1,
    "PageSize": 10,
    "Invocations": {
        "Invocation": [
            {
                "InvokeStatus": "Running",
                "InvokeId": "t-a8935b93739442e59ed621a6xxxxxxx",
                "CommandName": "Test1",
                "CommandType": "RunShellScript",
                "Frequency": "0 */20 * * * *",
                "InvokeInstances": {
                    "InvokeInstance": [
                        {
                            "InstanceId": "i-uf614fhehhzmxxxxxxx",
                            "InstanceInvokeStatus": "finished"
                        },
                        {
                            "InstanceId": "i-uf64isakb713xxxxxxx",
                            "InstanceInvokeStatus": "running"
                        }
                    ]
                }
            },
            {
                "Timed": true,
                "CommandId": "c-e67505b2be3e477dae94c0f0xxxxxxx"
            }
        ]
    }
}

```

```

    },
    {
      "InvokeStatus": "Running",
      "InvokeId": "t-001937b74e2a4242891fc789xxxxxxxx",
      "CommandName": "Test2",
      "CommandType": "RunShellScript",
      "Frequency": "0 */15 * * * *",
      "InvokeInstances": {
        "InvokeInstance": [
          {
            "InstanceId": "i-uf614fhehhzmxxxxxxxx",
            "InstanceInvokeStatus": "finished"
          },
          {
            "InstanceId": "i-uf64isakb713xxxxxxxx",
            "InstanceInvokeStatus": "running"
          }
        ]
      },
      "Timed": true,
      "CommandId": "c-6b0fb9d72adc421abab462abxxxxxxxx"
    },
    {
      "InvokeStatus": "success",
      "InvokeId": "t-bd09beef975b4e50883e5df1xxxxxxxx",
      "CommandName": "Test3",
      "CommandType": "RunShellScript",
      "Frequency": "",
      "InvokeInstances": {
        "InvokeInstance": [
          {
            "InstanceId": "i-uf614fhehhzmxxxxxxxx",
            "InstanceInvokeStatus": "finished"
          },
          {
            "InstanceId": "i-uf64isakb713xxxxxxxx",
            "InstanceInvokeStatus": "finished"
          }
        ]
      },
      "Timed": false,
      "CommandId": "c-6b0fb9d72adc421abab462abxxxxxxxx"
    },
    {
      "InvokeStatus": "success",
      "InvokeId": "t-c7499dfdfdb44e8aa0acce5bxxxxxxxx",
      "CommandName": "test",
      "CommandType": "RunShellScript",
      "Frequency": "",
      "InvokeInstances": {
        "InvokeInstance": [
          {
            "InstanceId": "i-uf614fhehhzmxxxxxxxx",
            "InstanceInvokeStatus": "finished"
          }
        ]
      },
      "Timed": false,
      "CommandId": "c-d2a8ccf6440641ec8635f194xxxxxxxx"
    },
    {
      "InvokeStatus": "Running",

```

```

        "InvokeId": "t-e733d4172fee452c98106f58xxxxxxxx",
        "CommandName": "Test4",
        "CommandType": "RunBatScript",
        "Frequency": "",
        "InvokeInstances": {
            "InvokeInstance": [
                {
                    "InstanceId": "i-uf614fhehhzmxxxxxxxx",
                    "InstanceInvokeStatus": "running"
                }
            ]
        },
        "Timed": false,
        "CommandId": "c-3f0e5e4a21c045afa197e036xxxxxxxx"
    }
},
"RequestId": "12E7974A-5AA5-4933-A44C-A16Cxxxxxxxx"
}

```

### Error response example

#### XML format

```

<Error>
  <RequestId>540CFF28-407A-40B5-B6A5-74Bxxxxxxxx</RequestId>
  <HostId>ecs.aliyuncs.com</HostId>
  <Code>MissingParameter.RegionId</Code>
  <Message>The input parameter "RegionId" that is mandatory for
processing this request is not supplied.</Message>
</Error>

```

#### JSON format

```

{
  "RequestId": "540CFF28-407A-40B5-B6A5-74Bxxxxxxxx",
  "HostId": "ecs.aliyuncs.com",
  "Code": "MissingParameter.RegionId",
  "Message": "The input parameter "RegionId" that is mandatory for
processing this request is not supplied."
}

```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                | Error message                                                                                 | HTTP status code | Meaning                                                                                                         |
|---------------------------|-----------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------|
| MissingParameter.RegionId | The input parameter "RegionId" that is mandatory for processing this request is not supplied. | 400              | You must specify the required parameter of RegionId, or you cannot use the resources in the specified RegionId. |

| Error code                   | Error message                                        | HTTP status code | Meaning                                 |
|------------------------------|------------------------------------------------------|------------------|-----------------------------------------|
| InvalidRegionId.NotFound     | The RegionId provided does not exist in our items.   | 404              | The specified RegionId does not exist.  |
| InternalServerError.Dispatch | An internal error occurred when dispatch the request | 500              | Internal error. Please try again later. |

## 17.9 DescribeInvocationResults

Queries the invocation result of a cloud assistant command, that is, the actual Output information of a specified ECS instance.

### Description

After you use the [DescribeInvocations](#) interface to check the command invocation status and the returned `InvokeStatus` is `Finished`, it indicates that the command process is `Finished`, but not necessarily is as effective as expected. You need to check the `Output` parameter in [DescribeInvocationResults](#) to get the specific invocation result. The actual output result is the valid version.

### Request parameters

| Name               | Type   | Required | Description                                                                                                                                                    |
|--------------------|--------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action             | String | Yes      | The name of this interface. Value: DescribeInvocationResults.                                                                                                  |
| RegionId           | String | Yes      | The regional ID. For more information, see <a href="#">DescribeRegions</a> .                                                                                   |
| CommandId          | String | No       | Command ID. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                       |
| InstanceId         | String | No       | Instance ID.                                                                                                                                                   |
| InvokeId           | String | No       | Invocation ID of a command process. You can use the <a href="#">DescribeInvocations</a> API to check all the InvokeId.                                         |
| InvokeRecordStatus | String | No       | The status of the command process you want to query. Optional values: <ul style="list-style-type: none"><li>Running: The command process is running.</li></ul> |

| Name       | Type              | Required | Description                                                                                                                                                                                                                                                                              |
|------------|-------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |                   |          | <ul style="list-style-type: none"><li>Failed: The command process invocation failed, the command process timed out, or encountered exceptions.</li><li>Finished: The invocation of the command process is completed.</li><li>Stopped: The command process is manually stopped.</li></ul> |
| PageNumber | Integer           | No       | Current page number.<br>Start value: 1.                                                                                                                                                                                                                                                  |
| PageSize   | Default value: 1. | No       | The number of rows per page for multi-page display.<br>Maximum value: 50.<br>Default value: 10.                                                                                                                                                                                          |

### Response parameters

| Name              | Type    | Description                                                                |
|-------------------|---------|----------------------------------------------------------------------------|
| TotalCount        | Integer | Total number of commands.                                                  |
| Pagenumber        | Integer | Page number of the query result.                                           |
| Pagesize          | Integer | The number of rows per page.                                               |
| InvocationResults | Array   | Command invocation result set ( <a href="#">InvocationResultSetType</a> ). |

### InvocationResultSetType

| Name             | Type  | Description                                                                                                                                     |
|------------------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Invocationresult | Array | Invocation result type on the instance ( <a href="#">InvocationResultType</a> ). Only one entry of result are returned for one-time invocation. |

### InvocationResultType

| Name         | Type   | Description                                                                                        |
|--------------|--------|----------------------------------------------------------------------------------------------------|
| CommandId    | String | Command ID.                                                                                        |
| Invokeld     | String | Invocation ID.                                                                                     |
| Instanceld   | String | Instance ID.                                                                                       |
| FinishedTime | String | Time of command process completion. If a command process times out, the time of completion for the |

| Name               | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |         | command process is based on <a href="#">CreateCommand</a> TimedOut.                                                                                                                                                                                                                                                                                                                                       |
| Invokerecordstatus | String  | Invocation status of the command process. Optional values: <ul style="list-style-type: none"> <li>Running: The command process is running.</li> <li>Failed: The command process invocation failed, the command process timed out, or encountered exceptions.</li> <li>Finished: The invocation of the command process is completed.</li> <li>Stopped: The command process is manually stopped.</li> </ul> |
| Output             | String  | The actual result after the command process completion. The output content is transmitted in the Base64-encoded format.                                                                                                                                                                                                                                                                                   |
| Exitcode           | Integer | The exit code of the command process: <ul style="list-style-type: none"> <li>The exit code is the Shell process exit code for Linux instances.</li> <li>The exit code is the Bat or PowerShell process exit code for Windows instances.</li> </ul>                                                                                                                                                        |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeInvocationResults
&RegionId=cn-hangzhou
&<Common Request Parameters>
```

### Success response example

#### XML format

```
<DescribeInvocationResultsResponse>
  <TotalCount>5</TotalCount>
  <PageNumber>1</PageNumber>
  <PageSize>5</PageSize>
  <Invocationresults>
    <Invocationresult>
      <FinishedTime>2018-01-05 15:45:02</FinishedTime>
      <Invokerecordstatus> finished </invokerecordstatus>
      <InstanceId>i-uf614fhehhzmxxxxxxx</InstanceId>
      <InvokeId>t-001937b74e2a4242891fc789xxxxxxx</InvokeId>
      <Output>MTU6NDU6MDEK</Output>
      <CommandId>c-6b0fb9d72adc421abab462abxxxxxxx</CommandId>
      <ExitCode>0</ExitCode>
    </InvocationResult>
  </Invocationresults>
</DescribeInvocationResultsResponse>
```



```

<InvocationResult>
  <FinishedTime>2018-01-05 15:40:02</FinishedTime>
  <InvokeRecordStatus>finished</InvokeRecordStatus>
  <InstanceId>i-uf614fhehhzmxxxxxxxx</InstanceId>
  <InvokeId>t-a8935b93739442e59ed621a6xxxxxxxx</InvokeId>
  <Output> </Output>
  <CommandId>c-e67505b2be3e477dae94c0f0xxxxxxxx</CommandId>
  <ExitCode>0</ExitCode>
</InvocationResult>
<InvocationResult>
  <FinishedTime>2018-01-05 15:30:02</FinishedTime>
  <InvokeRecordStatus>finished</InvokeRecordStatus>
  <InstanceId>i-uf614fhehhzmxxxxxxxx</InstanceId>
  <InvokeId>t-001937b74e2a4242891fc78xxxxxxxx</InvokeId>
  <Output>MTU6MzA6MDEK</Output>
  <CommandId>c-6b0fb9d72adc421abab462abxxxxxxxx</CommandId>
  <ExitCode>0</ExitCode>
</InvocationResult>
<InvocationResult>
  <FinishedTime>2018-01-05 15:20:02</FinishedTime>
  <InvokeRecordStatus>finished</InvokeRecordStatus>
  <InstanceId>i-uf614fhehhzmxxxxxxxx</InstanceId>
  <InvokeId>t-a8935b93739442e59ed621a6xxxxxxxx</InvokeId>
  <Output> </Output>
  <CommandId>c-e67505b2be3e477dae94c0f0xxxxxxxx</CommandId>
  <Exitcode> 0 </exitcode>
</InvocationResult>
<InvocationResult>
  <FinishedTime>2018-01-05 15:15:02</FinishedTime>
  <InvokeRecordStatus>finished</InvokeRecordStatus>
  <InstanceId>i-uf614fhehhzmxxxxxxxx</InstanceId>
  <InvokeId>t-001937b74e2a4242891fc789xxxxxxxx</InvokeId>
  <Output>MTU6MTU6MDEK</Output>
  <CommandId>c-6b0fb9d72adc421abab462abxxxxxxxx</CommandId>
  <ExitCode>0</ExitCode>
</InvocationResult>
</InvocationResults>
  <RequestId>567FA138-6026-47C6-A299-5D50xxxxxxxx</RequestId>
</DescribeInvocationResultsResponse>

```

## JSON format

```

{
  "Invocation": {
    "TotalCount": 5,
    "PageNumber": 1,
    "InvocationResults": {
      "InvocationResult": [
        {
          "FinishedTime": "2018-01-05 15:45:02",
          "InvokeRecordStatus": "finished",
          "InstanceId": "i-uf614fhehhzmxxxxxxxx",
          "InvokeId": "t-001937b74e2a4242891fc789xxxxxxxx",
          "Output": "MTU6NDU6MDEK",
          "CommandId": "c-6b0fb9d72adc421abab462abxxxxxxxx",
          "ExitCode": 0
        },
        {
          "FinishedTime": "2018-01-05 15:40:02",
          "InvokeRecordStatus": "finished",
          "InstanceId": "i-uf614fhehhzmxxxxxxxx",

```

```

        "InvokeId": "t-a8935b93739442e59ed621a6xxxxxxxx",
        "Output": "",
        "CommandId": "c-e67505b2be3e477dae94c0f0xxxxxxxx",
        "ExitCode": 0
    },
    {
        "FinishedTime": "2018-01-05 15:30:02",
        "InvokeRecordStatus": "finished",
        "InstanceId": "i-uf614fhehhzmxxxxxxxx",
        "InvokeId": "t-001937b74e2a4242891fc78xxxxxxxx",
        "Output": "MTU6MzA6MDEK",
        "CommandId": "c-6b0fb9d72adc421abab462abxxxxxxxx",
        "ExitCode": 0
    },
    {
        "FinishedTime": "2018-01-05 15:20:02",
        "InvokeRecordStatus": "finished",
        "InstanceId": "i-uf614fhehhzmd3zj4k74",
        "InvokeId": "t-a8935b93739442e59ed621a6xxxxxxxx",
        "Output": "",
        "CommandId": "c-e67505b2be3e477dae94c0f0xxxxxxxx",
        "ExitCode": 0
    },
    {
        "FinishedTime": "2018-01-05 15:15:02",
        "InvokeRecordStatus": "finished",
        "InstanceId": "i-uf614fhehhzmd3zj4k74",
        "InvokeId": "t-001937b74e2a4242891fc789xxxxxxxx",
        "Output": "MTU6MTU6MDEK",
        "CommandId": "c-6b0fb9d72adc421abab462abxxxxxxxx",
        "ExitCode": 0
    }
]
    },
    "PageSize": 5
},
"RequestId": "567FA138-6026-47C6-A299-5D50xxxxxxxx"
}

```

### Error response example

#### XML format

```

<Error>
  <RequestId>540CFF28-407A-40B5-B6A5-74Bxxxxxxxx</RequestId>
  <HostId>ecs.aliyuncs.com</HostId>
  <Code>MissingParameter.RegionId</Code>
  <Message>The input parameter "RegionId" that is mandatory for
processing this request is not supplied.</Message>
</Error>

```

#### JSON format

```

{
  "RequestId": "540CFF28-407A-40B5-B6A5-74Bxxxxxxxx",
  "HostId": "ecs.aliyuncs.com",
  "Code": "MissingParameter.RegionId",
  "Message": "The input parameter "RegionId" that is mandatory for
processing this request is not supplied."
}

```

```
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                   | Error message                                                                                 | HTTP status code | Meaning                                                                                                                        |
|------------------------------|-----------------------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------|
| MissingParameter.RegionId    | The input parameter "RegionId" that is mandatory for processing this request is not supplied. | 400              | You must specify the required parameter <code>RegionId</code> , or you cannot use the resources in the <code>RegionId</code> . |
| InvalidRegionId.NotFound     | The RegionId provided does not exist in our items.                                            | 404              | The specified <code>RegionId</code> does not exist.                                                                            |
| InternalServerError.Dispatch | An internal error occurred when dispatch the request.                                         | 500              | Internal error. Please try again later.                                                                                        |

## 17.10 ModifyCommand

Modifies the parameters and content of a cloud assistant command.

### Description

- You can modify a command during its invocation. After the modification, the new command content applies to subsequent invocations.
- You cannot modify the command type. For example, you cannot change a Shell command (`RunShellScript`) to a Bat command (`RunBatScript`).

### Request parameters

| Name     | Type   | Required | Description                                                                                                 |
|----------|--------|----------|-------------------------------------------------------------------------------------------------------------|
| Action   | String | Yes      | The name of this interface. Value: <code>ModifyCommand</code> .                                             |
| RegionId | String | Yes      | The region ID. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list. |

| Name        | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|---------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CommandId   | String  | Yes      | Command ID. You can check all the available CommandId by calling the <a href="#">DescribeCommands</a> API.                                                                                                                                                                                                                                                                                             |
| Name        | String  | No       | Command name. Supporting all the character encoding sets.                                                                                                                                                                                                                                                                                                                                              |
| Description | String  | No       | Command description. Supporting all the character encoding sets.                                                                                                                                                                                                                                                                                                                                       |
| WorkingDir  | String  | No       | The path where the command is performed. Default value: <ul style="list-style-type: none"> <li>For Linux instances, commands are performed in the <code>/root</code> directory.</li> <li>For Windows instances, commands are performed in the directory where the <a href="#">cloud assistant client</a> process is located, such as <code>C:\ProgramData\aliyun\assist\\$(version)</code>.</li> </ul> |
| TimeOut     | Integer | No       | The invocation timeout value of a command on ECS instances. The unit is seconds. When your command fails to                                                                                                                                                                                                                                                                                            |

| Name | Type | Required | Description                                                                                                                                                                                                                                                                                                          |
|------|------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |      |          | run for some reason, the invocation may time out, after which the cloud assistant client forces the command process to stop by canceling the command PID. The parameter value must be greater than or equal to 60. If the value is smaller than 60, the timeout value is 60 seconds by default. Default value: 3600. |

### Response parameters

All parameters are common response parameters. For more information, see [Common parameters](#).

### Examples

#### Request parameters

```
https://ecs.aliyuncs.com/?Action=ModifyCommand
&RegionId=cn-hangzhou
&CommandId=c-e996287206324975b5fbe1dxxxxxxxxxx
&NameId=Test
&TimeOut=120
<Common Request Parameters>
```

#### Success response example

##### XML format

```
<ModifyCommandResponse>
  <RequestId>540CFF28-407A-40B5-B6A5-73Bxxxxxxxxxx</RequestId>
</ModifyCommandResponse>
```

##### JSON format

```
{
  "RequestId": "540CFF28-407A-40B5-B6A5-73Bxxxxxxxxxx",
}
```

#### Error response example

**XML format**

```
<Error>
  <RequestId>540CFF28-407A-40B5-B6A5-74Bxxxxxxxxx</RequestId>
  <HostId>ecs.aliyuncs.com</HostId>
  <Code>InvalidInstance.NoClient</Code>
  <Message>The specified instances have no cloud assistant client
installed.</Message>
</Error>
```

**JSON format**

```
{
  "RequestId": "540CFF28-407A-40B5-B6A5-74Bxxxxxxxxx",
  "HostId": "ecs.aliyuncs.com"
  "Code": "InvalidInstance.NoClient"
  "Message": "The specified instances have no cloud assistant
client installed."
}
```

**Error codes**

Error codes specific to this interface are as follows. For more information, see [common parameters](#).

| Error code                     | Error message                                                                                  | HTTP status code | Meaning                                                                                                                  |
|--------------------------------|------------------------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------|
| MissingParameter.<br>CommandId | The input parameter "CommandId" that is mandatory for processing this request is not supplied. | 400              | You must specify the required parameter of CommandId.                                                                    |
| MissingParameter.<br>RegionId  | The input parameter "RegionId" that is mandatory for processing this request is not supplied.  | 400              | You must specify the required parameter of RegionId, or you cannot use the resources in the specified region (RegionId). |
| InvalidCmdId.<br>NotFound      | The specified CommandId does not exist.                                                        | 404              | The specified CommandId does not exist.                                                                                  |
| InvalidRegionId.<br>NotFound   | The RegionId provided does not exist in our items.                                             | 404              | The specified RegionId does not exist.                                                                                   |

| Error code                   | Error message                                         | HTTP status code | Meaning                                 |
|------------------------------|-------------------------------------------------------|------------------|-----------------------------------------|
| InternalServerError.Dispatch | An internal error occurred when dispatch the request. | 500              | Internal error. Please try again later. |

# 18 Tags

## 18.1 AddTags

Adds or overwrites one or more tags to your ECS resource. You can add tags to ECS resources such as instances, disks, snapshots, images, and security groups for easier and customizable operation and management.

### Description

When you call this interface, consider the following:

- Up to 20 tags can be added to each ECS resource.
- The key (`Tag.n.Key`) and value (`Tag.n.Value`) of the tag must be key-value matched.
- If the key (`Tag.n.Key`) is already added for the specified resource, the former value (`Tag.n.Value`) is overwritten with the new one.

### Request parameters

| Name         | Type   | Required | Description                                                                                                                                                                                                                  |
|--------------|--------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action       | String | Yes      | The name of this interface. Value: AddTags.                                                                                                                                                                                  |
| RegionId     | String | Yes      | The ID of the region to which the ECS resource belongs. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                         |
| ResourceType | String | Yes      | The type of the ECS resource. Optional values: <ul style="list-style-type: none"><li>• disk</li><li>• instance</li><li>• image</li><li>• securitygroup</li><li>• snapshot</li></ul> All values must be lowercase.            |
| ResourceId   | String | Yes      | The resource ID. For example, if you set the <code>ResourceType</code> to <code>instance</code> , the <code>ResourceId</code> can be interpreted as <code>InstanceId</code> .                                                |
| Tag.n.Key    | String | Yes      | The key of a tag of which <code>n</code> is from 1 to 20. Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://". |



| Name        | Type   | Required | Description                                                                                                                                                                                                              |
|-------------|--------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tag.n.Value | String | Yes      | The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://". |

## Response parameters

All are common parameters. See [Common parameters](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=AddTags
&ResourceId=s-946ntx4wr
&ResourceType=snapshot
&RegionId=cn-shenzhen
&Tag.1.Key=test
&Tag.1.Value=api
&<Common Request Parameters>
```

### Response example

#### XML format

```
<AddTagsResponse>
  <RequestId>C46FF5A8-C5F0-4024-8262-B16B639225A0</RequestId>
</AddTagsResponse>
```

#### JSON format

```
{
  "RequestId": "C46FF5A8-C5F0-4024-8262-B16B639225A0"
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error codes         | Error message                                          | HTTP status code | Description                                                                   |
|---------------------|--------------------------------------------------------|------------------|-------------------------------------------------------------------------------|
| InvalidTag.Mismatch | The specified Tag.n.Key and Tag.n.Value are not match. | 400              | The key (Tag.n.Key) and value (Tag.n.Value) of the tag must match key values. |

| Error codes                    | Error message                                            | HTTP status code | Description                                        |
|--------------------------------|----------------------------------------------------------|------------------|----------------------------------------------------|
| InvalidTagCount                | The specified tags are beyond the permitted range.       | 400              | You can specify a maximum of five tags.            |
| InvalidTagKey.Malformed        | The specified Tag.n.Key is not valid.                    | 400              | The specified Tag . n . Key is invalid.            |
| InvalidTagValue.Malformed      | The specified Tag.n.Value is not valid .                 | 400              | The specified Tag . n . Value is invalid.          |
| OperationDenied.QuotaExceed    | The quota of tags on resource is beyond permitted range. | 400              | Up to 20 tags can be added to each ECS resource.   |
| InvalidResourceId.NotSupported | The specified ResourceId does not support tagging.       | 403              | You cannot add tags to the specified ECS resource. |
| InvalidRegionId.NotFound       | The RegionId provided does not exist in our records.     | 404              | The specified RegionId does not exist.             |
| InvalidResourceId.NotFound     | The specified ResourceId is not found in our records.    | 404              | The specified ResourceId does not exist.           |
| InvalidResourceType.NotFound   | The ResourceType provided does not exist in our records. | 404              | The specified ResourceType does not exist.         |

## 18.2 RemoveTags

Removes one or more tags from the specified ECS resource, such as instances, disks, snapshots, images, and security groups.

### Request parameters

| Name         | Type   | Required | Description                                                                                                                                          |
|--------------|--------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action       | String | Yes      | The name of this interface. Value: RemoveTags.                                                                                                       |
| RegionId     | String | Yes      | The ID of the region to which the ECS resource belongs. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list. |
| ResourceType | String | Yes      | Indicates the type of resource when you bind a tag to it. Optional values:                                                                           |

| Name        | Type   | Required | Description                                                                                                                                                                                                              |
|-------------|--------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             |        |          | <ul style="list-style-type: none"><li>• disk</li><li>• instance</li><li>• image</li><li>• securitygroup</li><li>• snapshot</li></ul> All values are in lowercase.                                                        |
| ResourceId  | String | Yes      | Resource ID. For example, if you set the <code>ResourceType</code> to <code>instance</code> , the resource ID can be interpreted as the instance ID.                                                                     |
| Tag.n.Key   | String | Yes      | The key of a tag of which n is from 1 to 20. Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".          |
| Tag.n.Value | String | Yes      | The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://". |

## Response parameters

For more information about all the common response parameters, see [Common parameters](#).

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=RemoveTags
&ResourceId=s-946ntx4wr
&ResourceType=snapshot
&RegionId=cn-shenzhen
&Tag.1.Key=test
&Tag.1.Value=api
&<Common Request Parameters>
```

### Response example

### XML format

```
<RemoveTagsResponse>
  <RequestId>6A2C8AB5-E15D-478C-B56A-CF3DAF060028</RequestId>
```

```
</RemoveTagsResponse>
```

### JSON format

```
{
  "RequestId": "6A2C8AB5-E15D-478C-B56A-CF3DAF060028"
}
```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                     | Error message                                            | HTTP status code | Meaning                                                                           |
|--------------------------------|----------------------------------------------------------|------------------|-----------------------------------------------------------------------------------|
| InvalidTagCount                | The specified tags are beyond the permitted range.       | 400              | You can remove up to five tags from specified ECS resource in this query request. |
| InvalidResourceId.NotSupported | The specified ResourceId does not support tagging.       | 403              | You cannot remove tags from the specified ECS resource.                           |
| InvalidResourceId.NotFound     | The specified ResourceId is not found in our records.    | 404              | The specified ResourceId does not exist.                                          |
| InvalidRegionId.NotFound       | The RegionId provided does not exist in our records.     | 404              | The specified RegionId does not exist.                                            |
| InvalidResourceType.NotFound   | The ResourceType provided does not exist in our records. | 404              | The specified ResourceType does not exist.                                        |

## 18.3 DescribeTags

Describes one or more of your available tags. You can set criteria to match tags, such as by specifying the ECS resource types, resource IDs, tag keys, or tag values. We use the AND (&&) operator for your conditions and return a specific list of results from your operation.

### Description

In particular, if a tag key (`Tag.n.Key`) is specified, but no tag value (`Tag.n.Value`) is specified, all tags related to the tag-key are queried. If the tag key-value is specified, tag that exactly matches the queried key-value.

**Request parameters**

| Name         | Type    | Required | Description                                                                                                                                                                                                              |
|--------------|---------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action       | String  | Yes      | The name of this interface. Value: DescribeTags.                                                                                                                                                                         |
| RegionId     | String  | Yes      | Regional ID. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                |
| ResourceType | String  | Yes      | The type of the ECS resource. Optional values: <ul style="list-style-type: none"><li>• disk</li><li>• instance</li><li>• image</li><li>• securitygroup</li><li>• snapshot</li></ul> Values are case-sensitive.           |
| ResourceId   | String  | No       | The resource ID. For example, if you set the ResourceType to instance, the ResourceId the ResourceId can be interpreted as InstanceId.                                                                                   |
| Tag.n.Key    | String  | Yes      | The key of a tag of which n is from 1 to 20. Once you use this parameter, it cannot be a null string. It can be up to 64 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://".          |
| Tag.n.Value  | String  | Yes      | The value of a tag of which n is a number from 1 to 20. Once you use this parameter, it can be a null string. It can be up to 128 characters in length. It cannot begin with "aliyun", "acs:", "http://", or "https://". |
| PageNumber   | Integer | No       | Displays the tags on several pages.<br>Initial value: 1.<br>Default value: 1.                                                                                                                                            |
| PageSize     | Integer | No       | The maximum entries on a page.<br>Maximum: 100.<br>Default: 50.                                                                                                                                                          |

**Response parameters**

| Name       | Type                       | Description                      |
|------------|----------------------------|----------------------------------|
| Tags       | <a href="#">TagSetItem</a> | Returns a specific list of tags. |
| TotalCount | Integer                    | The total number of tags.        |
| PageSize   | Integer                    | The maximum entries on a page.   |

| Name       | Type    | Description                         |
|------------|---------|-------------------------------------|
| PageNumber | Integer | Displays the tags on several pages. |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeTags
&ResourceType=snapshot
&ResourceId=s-946ntx4wr
&RegionId=cn-hangzhou
&Tag.1.Key=test
&Tag.1.Value=api
&<Common Request Parameters>
```

### Response example

#### XML format

```
<DescribeTagsResponse>
  <RequestId>B04B8CF3-4489-432D-83BA-6F128E4F2295</RequestId>
  <PageNumber>1</PageNumber>
  <PageSize>50</PageSize>
  <Tags>
    <Tag>
      <TagKey>test</TagKey>
      <TagValue>api</TagValue>
    </Tag>
  </Tags>
  <TotalCount>1</TotalCount>
</DescribeTagsResponse>
```

#### JSON format

```
{
  "PageNumber": 1,
  "PageSize": 50,
  "RequestId": "B04B8CF3-4489-432D-83BA-6F128E4F2295",
  "Tags": {
    "Tag": [
      {
        "TagKey": "test",
        "TagValue": "api"
      }
    ]
  },
  "TotalCount": 1
}
```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                   | Error message                                            | HTTP status code | Meaning                                    |
|------------------------------|----------------------------------------------------------|------------------|--------------------------------------------|
| invalidTagKey.Malformed      | The parameter Tag.n.Key is illegal.                      | 400              | The specified Tag . n . Key is invalid.    |
| InvalidTagValue.Malformed    | The parameter Tag.n.Value is illegal.                    | 400              | The specified Tag . n . Value is invalid.  |
| InvalidRegionId.NotFound     | The RegionId provided does not exist in our records.     | 404              | The specified RegionId does not exist.     |
| InvalidResourceType.NotFound | The ResourceType provided does not exist in our records. | 404              | The specified ResourceType does not exist. |

# 19 Regions

## 19.1 DescribeZones

Describes the zones that are available to you in a specified region. For more information, see

[Regions and zones](#).

### Request parameters

| Name               | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action             | String | Yes      | The name of this interface. Value: DescribeZones.                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| RegionId           | String | Yes      | The region ID. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                                                                                                                                                                                                                                                     |
| InstanceChargeType | String | No       | Billing methods of the instance. For more information, see <a href="#">Pricing overview</a> . Optional values: <ul style="list-style-type: none"><li>PrePaid (Default): Subscription.</li><li>PostPaid: Pay-As-You-Go.</li></ul>                                                                                                                                                                                                                                                                                |
| SpotStrategy       | String | No       | Sets your expected spot price for preemptible instances. This parameter takes effect when you set InstanceChargeType to PostPaid. For more information, see <a href="#">Preemptible instance</a> . Optional values: <ul style="list-style-type: none"><li>NoSpot (Default): Bids as a normal Pay-As-You-Go instance.</li><li>SpotWithPriceLimit: Sets a bidding price threshold for the spot instance.</li><li>SpotAsPriceGo: Sets a highest Pay-As-You-Go price by the bidding system automatically.</li></ul> |

### Response parameters

| Name  | Type                     | Description                                      |
|-------|--------------------------|--------------------------------------------------|
| Zones | <a href="#">ZoneType</a> | A collection that contains ZoneType information. |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeZones
&RegionId=cn-hangzhou
```



&<Common Request Parameters>

## Response example

### XML format

```
<DescribeZonesResponse>
  <Zones>
    <Zone>
      <AvailableResourceCreation>
        <ResourceTypes>Instance</ResourceTypes>
        <ResourceTypes>Disk</ResourceTypes>
      </AvailableResourceCreation>
      <LocalName></LocalName>
      <ZoneId>cn-hangzhou-d</ZoneId>
      <AvailableDiskCategories>
        <DiskCategories>cloud</DiskCategories>
      </AvailableDiskCategories>
    </Zone>
    <Zone>
      <AvailableResourceCreation>
        <ResourceTypes>Instance</ResourceTypes>
        <ResourceTypes>Disk</ResourceTypes>
      </AvailableResourceCreation>
      <LocalName></LocalName>
      <ZoneId>cn-hangzhou-b</ZoneId>
      <AvailableDiskCategories>
        <DiskCategories>cloud</DiskCategories>
      </AvailableDiskCategories>
    </Zone>
  </Zones>
  <RequestId>6DB97BCC-92BA-424D-A7C8-3F6486612BAE</RequestId>
</DescribeZonesResponse>
```

### JSON format

```
{
  "RequestId": "A347EF0E-BBCC-4EFA-BD79-27AA3ACFD1BF",
  "Zones": {
    "Zone": [
      {
        "AvailableDiskCategories": {
          "DiskCategories": [
            "cloud"
          ]
        },
        "AvailableResourceCreation": {
          "ResourceTypes": [
            "Instance",
            "Disk"
          ]
        },
        "LocalName": "",
        "ZoneId": "cn-hangzhou-d"
      },
      {
        "AvailableDiskCategories": {
          "DiskCategories": [
            "cloud"
          ]
        }
      }
    ]
  }
}
```

```

    },
    "AvailableResourceCreation": {
      "ResourceTypes": [
        "Instance",
        "Disk"
      ]
    },
    "LocalName": "",
    "ZoneId": "cn-hangzhou-b"
  }
}
}
}

```

### Error codes

All are common error codes. For more information, see [API Error Center](#).

## 19.2 DescribeResourcesModification

Retrieves a list of the resources available in a certain zone. You can use this method before you upgrade or downgrade the instance specifications or the system disk capacity.

### Request parameters

| Name                | Type    | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------|---------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action              | String  | Yes      | The name of this interface. Value: DescribeResourcesModification.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| RegionId            | String  | Yes      | ID of the target region. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                                                                                                                                                                                                                                                   |
| ResourceId          | String  | Yes      | Resource ID. For example, if the retrieved resources are instances, this parameter can be interpreted as InstanceId.                                                                                                                                                                                                                                                                                                                                                                                                    |
| DestinationResource | String  | Yes      | Target resource type. Optional values: <ul style="list-style-type: none"> <li>InstanceType: Instance type.</li> <li>SystemDisk: System disk of an instance.</li> </ul>                                                                                                                                                                                                                                                                                                                                                  |
| MigrateAcrossZone   | Boolean | No       | Specifies whether to upgrade the instance among different clusters or not.<br>Default: False.<br>When the MigrateAcrossZone is set to True and you change the instance configuration according to the returned information, you must make sure that: <ul style="list-style-type: none"> <li>For a classic network type instance:               <ul style="list-style-type: none"> <li>If you upgrade the <a href="#">Phased-out instance types</a>, non-I/O optimized instances to I/O optimized</li> </ul> </li> </ul> |

| Name          | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------|--------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               |        |          | <p>instances, the instance-related intranet IP addresses, disk device names and license key of the instance may change. For a Linux instance, the system recognizes basic cloud disk (c loud) as xvda or xvdb, ultra cloud disk (c loud_efficiency) and SSD disk (c loud_ssd) as vda or vdb.</p> <ul style="list-style-type: none"> <li>— If your classic network instances are available in the <a href="#">instance type families</a>, the private IP of the instances may change.</li> <li>• For a VPC-Connected instance: <p>If you upgrade the <a href="#">Phased-out instance types</a>, non-I/O optimized instances to I/O optimized instances, the disk device names and license key of the ECS may change. For a Linux instance, the system recognizes basic cloud disk (c loud) as xvda or xvdb, ultra cloud disk (c loud_efficiency) and SSD disk (c loud_ssd) as vda or vdb.</p> </li> </ul> |
| OperationType | String | No       | <p>Whether to upgrade or downgrade your resources. Optional values:</p> <ul style="list-style-type: none"> <li>• Upgrade: Upgrade resources.</li> <li>• Downgrade: Downgrade resources.</li> </ul> <p>Default: Upgrade.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| InstanceType  | String | No       | <p>Type of an instance. For more information, see <a href="#">Instance Type Family</a>, or call <a href="#">DescribeInstanceTypes</a> to obtain the latest type list. If you set DestinationResource to SystemDisk, you must specify InstanceType.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

### Response parameters

| Name           | Type                                    | Description                 |
|----------------|-----------------------------------------|-----------------------------|
| AvailableZones | Array of <a href="#">AvailableZones</a> | A collection of zone types. |

**AvailableZoneType**

| Name               | Type                                           | Description                                                                                                                                                           |
|--------------------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RegionId           | String                                         | Region ID.                                                                                                                                                            |
| ZoneId             | String                                         | Zone ID.                                                                                                                                                              |
| Status             | String                                         | Resource status. Optional values: <ul style="list-style-type: none"><li>• Available: Resources are available.</li><li>• SoldOut: Resources are unavailable.</li></ul> |
| AvailableResources | Array of <a href="#">AvailableResourceType</a> | A collection of available resource types.                                                                                                                             |

**AvailableResourceType**

| Name               | Type                                           | Description                                                                                                                                                                                                                                                                                                                 |
|--------------------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type               | String                                         | Resource type. Optional values: <ul style="list-style-type: none"><li>• Zone: Zone.</li><li>• IoOptimized: Whether the instance is I/O optimized or not.</li><li>• InstanceType: Instance type.</li><li>• SystemDisk: System disk.</li><li>• DataDisk: Data disk.</li><li>• Network: Network type of an instance.</li></ul> |
| SupportedResources | Array of <a href="#">SupportedResourceType</a> | A collection of supported available resource types.                                                                                                                                                                                                                                                                         |

**SupportedResourceType**

| Name   | Type    | Description                                                                                                                                                           |
|--------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Value  | String  | Name of the Resource.                                                                                                                                                 |
| Status | String  | Resource status. Optional values: <ul style="list-style-type: none"><li>• Available: Resources are available.</li><li>• SoldOut: Resources are unavailable.</li></ul> |
| Min    | Integer | Minimum limit of the resource. No value is returned if the parameter is null.                                                                                         |

| Name | Type    | Description                                                                   |
|------|---------|-------------------------------------------------------------------------------|
| Max  | Integer | Maximum limit of the resource. No value is returned if the parameter is null. |
| Unit | Integer | Resource type unit. No value is returned if the parameter is null.            |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeResourcesModification
&RegionId=cn-hangzhou
&<Common Request Parameters>
```

```
https://ecs.example.com/?Action=DescribeResourcesModification
&RegionId=cn-hangzhou
&<Common Request Parameters>
```

### Response example

### XML format

```
<DescribeResourcesModificationResponse>
  <AvailableZones>
    <AvailableZone>
      <ZoneId>cn-hangzhou-d</ZoneId>
      <RegionId>cn-hangzhou</RegionId>
      <Status>Available</Status>
      <AvailableResources>
        <AvailableResource>
          <Type>instanceType</Type>
          <SupportedResources>
            <SupportedResource>
              <Value>ecs.d1ne.xlarge</Value>
              <Status>Available</Status>
            </SupportedResource>
            <SupportedResource>
              <Value>ecs.d1ne. 2xlarge</Value>
              <Status>Available</Status>
            </SupportedResource>
          </SupportedResources>
        </AvailableResource>
      </AvailableResources>
    </AvailableZone>
    <AvailableZone>
      <ZoneId>cn-hangzhou-e</ZoneId>
      <RegionId>cn-hangzhou</RegionId>
      <Status>Available</Status>
      <AvailableResources>
        <AvailableResource>
          <Type>instanceType</Type>
          <SupportedResources>
            <SupportedResource>
              <Value>ecs.d1ne.xlarge</Value>
              <Status>Available</Status>
```

```

        </SupportedResource>
        <SupportedResource>
            <Value>ecs.d1ne.2xlarge</Value>
            <Status>Available</Status>
        </SupportedResource>
    </SupportedResources>
</AvailableResource>
</AvailableResources>
</AvailableZone>
</AvailableZones>
<RequestId>6DB97BCC-92BA-424D-A7C8-3F6486612BAE</RequestId>
</DescribeResourcesModificationResponse>

```

### JSON format

```

{
  "RequestId": "D0233A65-7F00-4B50-8023-101427229D4F",
  "AvailableZones": {
    "AvailableZone": [
      {
        "Status": "available",
        "RegionId": "cn-hangzhou",
        "AvailableResources": {
          "AvailableResource": [
            {
              "Type": "instanceType",
              "SupportedResources": {
                "SupportedResource": [
                  {
                    "Status": "available",
                    "Value": "ecs.sn1ne.xlarge"
                  },
                  {
                    "Status": "available",
                    "Value": "ecs.sn2ne.xlarge"
                  }
                ]
              }
            }
          ]
        }
      }
    ]
  },
  "ZoneId": "cn-hangzhou-e",
}

```

### Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code    | Error message                                                 | HTTP status code | Description                    |
|---------------|---------------------------------------------------------------|------------------|--------------------------------|
| Invalid.Param | The input parameter DestinationResource that is mandatory for | 400              | You must specify the parameter |

| Error code               | Error message                            | HTTP status code | Description                            |
|--------------------------|------------------------------------------|------------------|----------------------------------------|
|                          | processing this request is not supplied. |                  | DestinationResource.                   |
| UnavailableRegions       | The available regions does not exists.   | 404              | The specified RegionId is unavailable. |
| InvalidRegionId.NotFound | The specified RegionId does not exist.   | 404              | The specified RegionId does not exist. |

## 19.3 DescribeAvailableResource

Describes a list of the resources available in a certain zone. For example, you can retrieve the resource list in a zone before creating an ECS instance ([RunInstances](#)) in the zone.

### Description

When you call this interface, consider the following:

- If you do not specify the `ZoneId` parameter, the system returns resources that match the other criteria in all zones in the (`RegionId`) region.
- You can specify the `DestinationResource` parameter to retrieve different types of resource lists, and specify other parameters to refine your search. Options for the `DestinationResource` parameter have dependencies. When you select an option, the options to the left of the option in the chain are also required.

— Sequence: (Zone) > `IoOptimized` > `InstanceType` > `SystemDisk` > `DataDisk`

— **Samples of parameter values in the sequence:**

- If you set `DestinationResource` to `SystemDisk`, you must specify the `IoOptimized` and `InstanceType`.
- If you set `DestinationResource` to `InstanceType`, you must specify the `IoOptimized`.
- If you set `DestinationResource` to `DataDisk`, you must specify the `IoOptimized`, `InstanceType`, and `SystemDiskCategory`.

**Request parameters**

| Name                | Type   | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------|--------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action              | String | Yes      | The name of this interface. Value: DescribeAvailableResource.                                                                                                                                                                                                                                                                                                                                                                                                      |
| RegionId            | String | Yes      | ID of the target region. You can call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                                                                                                                                                                                                                                            |
| DestinationResource | String | Yes      | Resource type to query. Optional values: <ul style="list-style-type: none"> <li>Zone: Zone.</li> <li>IoOptimized: Whether the instance is I/O optimized or not.</li> <li>InstanceType: Instance type.</li> <li>SystemDisk: System disk of an instance.</li> <li>DataDisk: Data disk of an instance.</li> <li>Network: Network type of an instance.</li> </ul>                                                                                                      |
| ZoneId              | String | No       | Zone ID. If you do not specify ZoneId, the system returns resources that match the other criteria in all zones throughout the current region.                                                                                                                                                                                                                                                                                                                      |
| InstanceChargeType  | String | No       | Billing method of resources. For more information, see <a href="#">pricing overview</a> . Optional values: <ul style="list-style-type: none"> <li>PrePaid: Subscription.</li> <li>PostPaid: Pay-As-You-Go.</li> </ul> Default value: PostPaid.                                                                                                                                                                                                                     |
| SpotStrategy        | String | No       | Sets your expected spot price for preemptible instances. Optional values: <ul style="list-style-type: none"> <li>NoSpot: Bids as a normal Pay-As-You-Go instance.</li> <li>SpotWithPriceLimit: Sets a bidding price threshold for the preemptible instance.</li> <li>SpotAsPriceGo: Sets a highest Pay-As-You-Go price by the bidding system automatically.</li> </ul> Default: NoSpot. The InstanceChargeType must be set to PostPaid to make SpotStrategy valid. |
| IoOptimized         | String | No       | Whether it is an I/O-optimized instance or not. Optional values: <ul style="list-style-type: none"> <li>none: Non-I/O optimized instance.</li> <li>optimized: I/O optimized instance.</li> </ul>                                                                                                                                                                                                                                                                   |



| Name                             | Type   | Required | Description                                                                                                                                                                                                                                                                                                      |
|----------------------------------|--------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                  |        |          | If you set <code>DestinationResource</code> to <code>InstanceType</code> , <code>SystemDisk</code> or <code>DataDisk</code> , you must specify <code>IoOptimized</code> as well.                                                                                                                                 |
| <code>InstanceType</code>        | String | No       | Instance type. For more information, see <a href="#">instance Type Family</a> , or call <a href="#">DescribeInstanceTypes</a> to obtain the latest type list. If you set <code>DestinationResource</code> to <code>SystemDisk</code> or <code>DataDisk</code> , you must specify the <code>InstanceType</code> . |
| <code>Systemdisk category</code> | String | No       | System disk category. Optional values: <ul style="list-style-type: none"> <li>Cloud: Basic cloud disk.</li> <li>cloud_efficiency: Ultra cloud disk.</li> <li>cloud_ssd: Cloud SSD.</li> <li>ephemeral_ssd: Ephemeral SSD</li> </ul>                                                                              |
| <code>Datadiskcategory</code>    | String | No       | Data disk category. Optional values: <ul style="list-style-type: none"> <li>Cloud: Basic cloud disk.</li> <li>cloud_efficiency: Ultra cloud disk.</li> <li>cloud_ssd: Cloud SSD.</li> <li>ephemeral_ssd: Ephemeral SSD</li> </ul>                                                                                |
| <code>NetworkCategory</code>     | String | No       | Network type of an ECS instance. Optional values: <ul style="list-style-type: none"> <li>Vpc: Virtual Private Cloud.</li> <li>Classic: Classic network.</li> </ul>                                                                                                                                               |

### Response parameters

| Name                        | Type                                       | Description                |
|-----------------------------|--------------------------------------------|----------------------------|
| <code>AvailableZones</code> | Array of <a href="#">AvailableZoneType</a> | A collection of zone types |

### AvailableZoneType

| Name                  | Type   | Description                                                                                                             |
|-----------------------|--------|-------------------------------------------------------------------------------------------------------------------------|
| <code>RegionId</code> | String | Region ID.                                                                                                              |
| <code>ZoneId</code>   | String | Zone ID.                                                                                                                |
| <code>Status</code>   | String | Resource status. Possible values: <ul style="list-style-type: none"> <li>Available: Resources are available.</li> </ul> |

| Name               | Type                                           | Description                                                                         |
|--------------------|------------------------------------------------|-------------------------------------------------------------------------------------|
|                    |                                                | <ul style="list-style-type: none"><li>SoldOut: Resources are unavailable.</li></ul> |
| AvailableResources | Array of <a href="#">AvailableResourceType</a> | A collection of available resource types.                                           |

#### AvailableResourceType

| Name               | Type                                           | Description                                                                                                                                                                                                                                                                                                                                   |
|--------------------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type               | String                                         | The type of the ECS resource. Possible values: <ul style="list-style-type: none"><li>Zone: Zone.</li><li>IoOptimized: Whether the instance is I/O optimized or not.</li><li>InstanceType: Instance type.</li><li>SystemDisk: System disk.</li><li>DataDisk: Data disk of an instance.</li><li>Network: Network type of an instance.</li></ul> |
| SupportedResources | Array of <a href="#">SupportedResourceType</a> | A collection of supported available resource types.                                                                                                                                                                                                                                                                                           |

#### SupportedResourceType

| Name   | Type    | Description                                                                                                                                                       |
|--------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Value  | String  | Name of the Resource.                                                                                                                                             |
| Status | String  | Resource status. Possible values: <ul style="list-style-type: none"><li>Available: Resources are available.</li><li>SoldOut: Resources are unavailable.</li></ul> |
| Min    | Integer | Minimum limit of a resource type. No value is returned if the parameter is null.                                                                                  |
| Max    | Integer | Maximum limit of a resource type. No value is returned if the parameter is null.                                                                                  |
| Unit   | Integer | Resource type unit. No value is returned if the parameter is null.                                                                                                |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeAvailableResource&RegionId=cn-hangzhou
```

## &lt;Common Request Parameters&gt;

**Response example****XML format**

```

<DescribeAvailableResourceResponse>
  <AvailableZones>
    <AvailableZone>
      <ZoneId>cn-hangzhou-d</ZoneId>
      <RegionId>cn-hangzhou</RegionId>
      <Status>Available</Status>
      <AvailableResources>
        <AvailableResource>
          <Type>instanceType</Type>
          <SupportedResources>
            <SupportedResource>
              <Value>ecs.d1ne.xlarge</Value>
              <Status>Available</Status>
            </SupportedResource>
            <SupportedResource>
              <Value>ecs.d1ne.2xlarge</Value>
              <Status>Available</Status>
            </SupportedResource>
          </SupportedResources>
        </AvailableResource>
      </AvailableResources>
    </AvailableZone>
    <AvailableZone>
      <ZoneId>cn-hangzhou-e</ZoneId>
      <RegionId>cn-hangzhou</RegionId>
      <Status>Available</Status>
      <AvailableResources>
        <AvailableResource>
          <Type>instanceType</Type>
          <SupportedResources>
            <SupportedResource>
              <Value>ecs.d1ne.xlarge</Value>
              <Status>Available</Status>
            </SupportedResource>
            <SupportedResource>
              <Value>ecs.d1ne.2xlarge</Value>
              <Status>Available</Status>
            </SupportedResource>
          </SupportedResources>
        </AvailableResource>
      </AvailableResources>
    </AvailableZone>
  </AvailableZones>
  <RequestId>6DB97BCC-92BA-424D-A7C8-3F6486612BAE</RequestId>
</DescribeAvailableResourceResponse>

```

**JSON format**

```

{
  "RequestId": "D0233A65-7F00-4B50-8023-101427229D4F",
  "AvailableZones": {
    "AvailableZone": [
      {
        "Status": "available",

```

```

    "RegionId": "cn-hangzhou",
    "AvailableResources": {
      "AvailableResource": [
        {
          "Type": "instanceType",
          "SupportedResources": {
            "SupportedResource": [
              {
                "Status": "available",
                "Value": "ecs.sn1ne.xlarge"
              },
              {
                "Status": "available",
                "Value": "ecs.sn2ne.xlarge"
              }
            ]
          }
        }
      ]
    },
    "ZoneId": "cn-hangzhou-e",
  }
}

```

## Error codes

Error codes specific to this interface are as follows. For more information, see [API Error Center](#).

| Error code                 | Error messages                                                                                         | HTTP status code | Meaning                                          |
|----------------------------|--------------------------------------------------------------------------------------------------------|------------------|--------------------------------------------------|
| Invalid.Param              | The input parameter DestinationResource that is mandatory for processing this request is not supplied. | 400              | You must specify the DestinationResource.        |
| Invalid.InstanceChargeType | The specified InstanceChargeType is not valid.                                                         | 400              | The specified InstanceChargeType does not exist. |
| Invalid.IoOptimized        | The specified IoOptimized is not valid.                                                                | 404              | The specified parameter IoOptimized is invalid.  |
| Invalid.NetworkCategory    | The specified NetworkCategory is not valid.                                                            | 404              | The specified NetworkCategory is invalid.        |

| Error code               | Error messages                          | HTTP status code | Meaning                                               |
|--------------------------|-----------------------------------------|------------------|-------------------------------------------------------|
| InvalidRegionId.NotFound | The specified RegionId does not exist . | 404              | The specified RegionId does not exist.                |
| UnavailableRegions       | The available regions does not exists.  | 404              | You are not allowed to access the specified RegionId. |

## 20 Others

---

### 20.1 DescribeTasks

Queries the progress of a specified asynchronous task.

#### Request parameters

| Name       | Type   | Required | Description                                                                                                                                                                                                                              |
|------------|--------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action     | String | Yes      | The name of this interface. Value: DescribeTasks.                                                                                                                                                                                        |
| RegionId   | String | Yes      | Region ID. For more information, call <a href="#">DescribeRegions</a> to obtain the latest region list.                                                                                                                                  |
| TaskAction | String | Yes      | The specified action to be queried. Optional values: <ul style="list-style-type: none"><li>ImportImage: Query the task of (<a href="#">ImportImage</a>).</li><li>ExportImage: Query the task of (<a href="#">ExportImage</a>).</li></ul> |
| TaskIds    | String | No       | Task ID. Up to 100 task IDs are supported, and they are separated by comma (,).                                                                                                                                                          |
| TaskStatus | String | No       | Task status. Optional values: <ul style="list-style-type: none"><li>Finished</li><li>Processing</li><li>Waiting</li><li>Deleted</li><li>Paused</li></ul> Default value: null.                                                            |

| Name       | Type    | Required | Description                                                                                                                                                                                                |
|------------|---------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |         |          | Currently, you can query the task in the Finished and Processing status, and other value is ignored in the request.                                                                                        |
| StartTime  | String  | No       | Query by creation time, start time of the creation time period. The time is displayed in the format specified in the ISO8601 standard, and the UTC time is used. Format : YYYY-MM-DDThh:mmZ.               |
| EndTime    | String  | No       | Query by creation time, start time of the creation time period. The time is displayed in the format specified in the ISO8601 standard, and the UTC time is used. It is in the format of YYYY-MM-DDThh:mmZ. |
| PageNumber | Integer | No       | Page number of the query result. Initial value: 1, default value : 1.                                                                                                                                      |
| PageSize   | Integer | No       | Number of lines on each page, set for pagination query. Maximum value: 100, default value: 10.                                                                                                             |

**Response parameters**

| Name    | Type                     | Description |
|---------|--------------------------|-------------|
| TaskSet | <a href="#">TaskType</a> | TaskSet     |

| Name       | Type    | Description                                   |
|------------|---------|-----------------------------------------------|
| RegionId   | String  | Regional ID.                                  |
| TotalCount | Integer | Number of items in the list.                  |
| PageNumber | Integer | Current page number.                          |
| PageSize   | Integer | Number of items included in the current page. |

## Examples

### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeTasks
&RegionId=cn-hangzhou
&<Common Request Parameters>
```

### Response example

#### XML format

```
<DescribeTasksResponse>
  <PageNumber>1</PageNumber>
  <TotalCount>2</TotalCount>
  <PageSize>2</PageSize>
  <RegionId>cn-hangzhou</RegionId>
  <RequestId>E5C82807-5588-4661-9A96-350B206A7623</RequestId>
  <TaskSet>
    <Task>
      <CreationTime>2015-11-24T12:50Z</CreationTime>
      <FinishedTime>2015-11-24T12:50Z</FinishedTime>
      <SupportCancel>true</SupportCancel>
      <TaskAction>IMPORT_IMAGE</TaskAction>
      <TaskStatus>Finished</TaskStatus>
      <TaskId>t-23mo8zf9w</TaskId>
    </Task>
    <Task>
      <CreationTime>2015-11-23T15:10Z</CreationTime>
      <FinishedTime>2015-11-23T15:16Z</FinishedTime>
      <SupportCancel>true</SupportCancel>
      <TaskAction>IMPORT_IMAGE</TaskAction>
      <TaskStatus>Finished</TaskStatus>
      <TaskId>t-23sgu0dyj</TaskId>
    </Task>
  </TaskSet>
</DescribeTasksResponse>
```

#### JSON format

```
{
  "PageNumber": 1,
  "TotalCount": 2,
  "PageSize": 2,
  "RegionId": "cn-hangzhou",
```



```

    "RequestId": "F746C690-D9EA-4F87-AF31-8E1910FAB541" ,
    "TaskSet": {
      "Task": [
        {
          "CreationTime": "2015-11-24T12:50Z",
          "FinishedTime": "2015-11-24T12:50Z",
          "SupportCancel": true,
          "TaskAction": "ImportImage",
          "TaskStatus": "Finished",
          "TaskId": "t-23mo8zf9w"
        },
        {
          "CreationTime": "2015-11-23T15:10Z",
          "FinishedTime": "2015-11-23T15:16Z",
          "SupportCancel": true,
          "TaskAction": "ImportImage",
          "TaskStatus": "Finished",
          "TaskId": "t-23sgu0dyj"
        }
      ]
    }
  }
}

```

## Error codes

Error codes specific to this interface are as follows. For more error codes, see [API Error Center](#).

| Error code               | Error message                                                                               | HTTP status code | Meaning                                                  |
|--------------------------|---------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------|
| MissingParameter         | An input parameter "RegionId" that is mandatory for processing the request is not supplied. | 400              | The required parameter <code>RegionId</code> is missing. |
| InvalidRegionId.NotFound | The specified region not found.                                                             | 400              | The specified <code>RegionId</code> does not exist.      |

## 20.2 DescribeTaskAttribute

Describes the details about one or more tasks. Currently, the tasks that can be queried are the importing image action and the exporting image action.

### Request parameters

| Name     | Type   | Required | Description                                                                           |
|----------|--------|----------|---------------------------------------------------------------------------------------|
| Action   | String | Yes      | The name of this interface. Value: DescribeTaskAttribute.                             |
| RegionId | String | Yes      | The region ID. Call <a href="#">DescribeRegions</a> to obtain the latest region list. |

| Name   | Type   | Required | Description                                                                         |
|--------|--------|----------|-------------------------------------------------------------------------------------|
| TaskId | String | No       | Task ID. You can call <a href="#">DescribeTasks</a> to obtain the list of task IDs. |

### Response parameters

| Name          | Type    | Description                                                                                                                                                        |
|---------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| askId         | String  | The task ID.                                                                                                                                                       |
| TaskAction    | String  | The specified action.                                                                                                                                              |
| RegionId      | String  | The region ID.                                                                                                                                                     |
| TaskStatus    | String  | The task status.                                                                                                                                                   |
| Progress      | String  | The task progress.                                                                                                                                                 |
| SupportCancel | Boolean | Whether the task can be canceled ( <a href="#">CancelTask</a> ) or not. Possible values: <ul style="list-style-type: none"> <li>True</li> <li>False</li> </ul>     |
| SuccessCount  | Integer | The number of tasks that were completed.                                                                                                                           |
| FailedCount   | Integer | The number of failed tasks.                                                                                                                                        |
| CreationTime  | String  | Task creation time. The time is displayed in the format specified in the <a href="#">ISO8601</a> standard, and the UTC time is used. Format: YYYY-MM-DDThh:mm:ssZ. |
| FinishedTime  | String  | Task completion time. The time is displayed in the format specified in the ISO8601 standard, and the UTC time is used. Format: YYYY-MM-DDThh:mm:ssZ.               |

### Examples

#### Request example

```
https://ecs.aliyuncs.com/?Action=DescribeTaskAttribute
&RegionId=cn-hangzhou
&TaskId=t-23ym6mvro
&<Common Request Parameters>
```

#### Response example

#### XML format

```
<DescribeTaskAttributeResponse>
  2018-03-06T07:33:51Z
  <OperationProgressSet>
    <OperationProgress>
```

```

    <RelatedItemSet>
      <RelatedItem>
        <Name>OSSBucket</Name>
        <Value>image-temp</Value>
      </RelatedItem>
      <RelatedItem>
        <Name>OSSObject</Name>
        <Value>MYOSSPRE_m-23f8tcp8y_t-23ym6mvro.vhd</Value>
      </RelatedItem>
      <RelatedItem>
        <Name>ImageFormat</Name>
        <Value>vhd</Value>
      </RelatedItem>
    </RelatedItemSet>
    <ErrorMsg/>
    <ErrorCode/>
    <OperationStatus>Success</OperationStatus>
  </OperationProgress>
</OperationProgressSet>
<FinishedTime>2015-11-23T02:19Z</FinishedTime>
<FailedCount>0</FailedCount>
<SupportCancel>true</SupportCancel>
<TotalCount>1</TotalCount>
<SuccessCount>1</SuccessCount>
<RequestId>EF0C5969-279B-49C8-AD83-BACCC74DD38C</RequestId>
<RegionId>cn-hangzhou</RegionId>
<TaskAction>ExportImage</TaskAction>
<TaskStatus>Finished</TaskStatus>
<TaskProcess>100%</TaskProcess>
<TaskId>t-23ym6mvro</TaskId>
</DescribeTaskAttributeResponse>

```

### JSON format

```

{
  "CreationTime": "2015-11-23T02:13Z",
  "OperationProgressSet": {
    "OperationProgress": [
      {
        "RelatedItemSet": {
          "RelatedItem": [
            {
              "Name": "OSSBucket",
              "Value": "image-temp"
            },
            {
              "Name": "OSSObject",
              "Value": "MYOSSPRE_m-23f8tcp8y_t-23ym6mvro.vhd"
            },
            {
              "Name": "ImageFormat",
              "Value": "vhd"
            }
          ]
        }
      }
    ],
    "ErrorMsg": "",
    "ErrorCode": "",
    "OperationStatus": "Success"
  }
}

```

```
},
"FinishedTime": "2015-11-23T02:19Z",
"FailedCount": 0,
"SupportCancel": true,
"TotalCount": 1,
"SuccessCount": 1,
"RequestId": "4BE2C7FE-C7A4-4675-A153-174E032AABFB",
"RegionId": "cn-hangzhou",
"TaskAction": "ExportImage",
"TaskStatus": "Finished",
"TaskProcess": "100%",
"TaskId": "t-23ym6mvro"
}
```

## Error codes

All are common error codes. For more information, see [common error codes](#).

## 20.3 DescribeAccountAttributes

Queries the maximum number of ECS resources that you can create in a region. Specifically, you can use this interface to query the numbers of security groups, elastic network interfaces (ENIs), Pay-As-You-Go vCPU cores, preemptible instance vCPU cores, and dedicated hosts, local network type, and whether your account has been authenticated by real name.

### Description

After [registering](#) with an Alibaba Cloud account, you can create a certain number of ECS resources in different regions. For more information, see [Limitations](#). To expand the resource capacity, you can [open a ticket](#) as needed.

### Request parameters

| Name            | Type   | Required | Description                                                                                                                                                                                                                                |
|-----------------|--------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action          | String | Yes      | Name of this interface. Value: DescribeAccountAttributes.                                                                                                                                                                                  |
| RegionId        | String | Yes      | Region ID. You can call <a href="#">DescribeRegions</a> to query the latest region list.                                                                                                                                                   |
| ZoneId          | String | No       | Zone ID.                                                                                                                                                                                                                                   |
| AttributeName.N | String | No       | Resource usage limit. N ranges from 1 to 8. Value range: <ul style="list-style-type: none"><li>instance-network-type: Available network types in the current region.</li><li>max-security-groups: The number of security groups.</li></ul> |

| Name | Type | Required | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------|------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |      |          | <ul style="list-style-type: none"> <li>max-elastic-network-interfaces: Number of ENIs in the current region.</li> <li>max-postpaid-instance-vcpu-count: Number of Pay-As-You-Go instance vCPU cores in the current region.</li> <li>max-spot-instance-vcpu-count: Number of preemptible instance vCPU cores in the current region.</li> <li>max-dedicated-hosts: Number of dedicated hosts in the current region.</li> <li>supported-postpaid-instance-types: Pay-As-You-Go I/O optimization instance types in the current region.</li> <li>real-name-authentication: Whether your account has been authenticated by real name.</li> </ul> <p>Default value: null.</p> |

### Response parameters

| Name                 | Type                                          | Description                                                                 |
|----------------------|-----------------------------------------------|-----------------------------------------------------------------------------|
| AccountAttributeItem | Array of <a href="#">AccountAttributeItem</a> | A collection of information about account privileges in a specified region. |

### AccountAttributeItems

| Name          | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AttributeName | String | <p>Resource usage limit. Value range:</p> <ul style="list-style-type: none"> <li>instance-network-type: Available network types in the current region.</li> <li>max-security-groups: Number of security groups.</li> <li>max-elastic-network-interfaces: Number of ENIs in the current region.</li> <li>max-postpaid-instance-vcpu-count: Number of Pay-As-You-Go instance vCPU cores in the current region.</li> <li>max-spot-instance-vcpu-count: Number of preemptible instance vCPU cores in the current region.</li> <li>max-dedicated-hosts: Number of dedicated hosts in the current region.</li> <li>supported-postpay-instance-types: Pay-As-You-Go I/O optimization instance types in the current region.</li> </ul> |

| Name            | Type                      | Description                                                                                                                           |
|-----------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
|                 |                           | <ul style="list-style-type: none"> <li>real-name-authentication: Whether your account has been authenticated by real name.</li> </ul> |
| AttributeValues | <a href="#">ValueItem</a> | Resource usage limit.                                                                                                                 |

**ValueItem**

| Name  | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Value | String | <p>Resource usage limit in the current region or all regions. Value range:</p> <ul style="list-style-type: none"> <li>The value of 0 or a positive integer is returned when the value is max-security-groups, max-elastic-network-interfaces, max-postpaid-instance-vcpu-count, max-dedicated-hosts, or max-spot-instance-vcpu-count.</li> <li>A possible value of instance types is returned when the value is supported-postpay-instance-types. For more information, see <a href="#">Instance type families</a>.</li> <li>The value of yes, none, or unnecessary is returned when the value is real-name-authentications.</li> <li>The value of vpc or classic is returned when the value is instance-network-type.</li> </ul> |

**Examples****Request example**

```
https://ecs.aliyuncs.com/?Action=DescribeAccountAttributes
&RegionId=cn-hangzhou&
<Common Request Parameters>
```

**Response example****XML format**

```
<DescribeAccountAttributesResponse>
  <AccountAttributeItems>
    <AccountAttributeItem>
      <AttributeName>max-security-groups</AttributeName>
      <AttributeValues>
        <ValueItem>
          <Value>800</Value>
        <ValueItem>
        </ValueItem>
      </AttributeValues>
    </AccountAttributeItem>
    <AccountAttributeItem>
```

```

        <AttributeName>instance-network-type</AttributeName>
        <AttributeValues>
            <ValueItem>
                <Value>vpc</Value>
                <Value>classic</Value>
            </ValueItem>
        </AttributeValues>
    </AccountAttributeItem>
</AccountAttributeItems>
    <RequestId>675B6D89-A3EB-4987-BAF3-610591E0D019</RequestId>
</DescribeAccountAttributesResponse>

```

### JSON format

```

{
  "AccountAttributeItems": {
    "AccountAttributeItem": [
      {
        "AttributeValues": {
          "ValueItem": [
            {
              "Value": "100"
            }
          ]
        },
        "AttributeName": "max-security-groups"
      },
      {
        "AttributeValues": {
          "ValueItem": [
            {
              "Value": "2"
            }
          ]
        },
        "AttributeName": "max-dedicated-hosts"
      },
      {
        "AttributeValues": {
          "ValueItem": [
            {
              "Value": "1000"
            }
          ]
        },
        "AttributeName": "max-postpaid-instance-vcpu-count"
      },
      {
        "AttributeValues": {
          "ValueItem": [
            {
              "Value": "1000"
            }
          ]
        },
        "AttributeName": "max-spot-instance-vcpu-count"
      },
      {
        "AttributeValues": {
          "ValueItem": [
            {

```

```

        "Value": "5000"
      }
    ],
    "AttributeName": "max-elastic-network-interfaces"
  },
  {
    "AttributeValues": {
      "ValueItem": [
        {
          "Value": "yes"
        }
      ]
    },
    "AttributeName": "real-name-authentication"
  },
  {
    "AttributeValues": {
      "ValueItem": [
        {
          "Value": "vpc"
        }
      ]
    },
    "AttributeName": "instance-network-type"
  },
  {
    "AttributeValues": {
      "ValueItem": [
        {
          "Value": "ecs.f3-c16f1.4xlarge"
        },
        {
          "Value": "ecs.g5.2xlarge"
        }
      ]
    },
    "AttributeName": "supported-postpaid-instance-types"
  }
],
"RequestId": "8CE45CD5-31FB-47C2-959D-CA8144CE9F42"
}

```

## Error codes

Error codes specific to this interface are as follows.

| Error code               | Error message                          | HTTP status code | Meaning                                |
|--------------------------|----------------------------------------|------------------|----------------------------------------|
| InvalidRegionId.NotFound | The specified RegionId does not exist. | 404              | The specified RegionId does not exist. |



## 21 Data types

### 21.1 AccessPointType

Type of access point (AP) information.

#### Node

Depends on the methods.

#### Subnode

| Name             | Type   | Description                                                                                                                                                                                                                                                                                                                                                  |
|------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AccessPointId    | String | AP ID.                                                                                                                                                                                                                                                                                                                                                       |
| Type             | String | Type of a physical connection AP. Possible values: <ul style="list-style-type: none"><li>VPC: VPC AP, which can be connected to a physical connection accessing a VPC network.</li></ul>                                                                                                                                                                     |
| Status           | String | Status of a physical connection AP. Possible values: <ul style="list-style-type: none"><li>Recommended: The status is good, and connection is recommended.</li><li>Hot: The status is normal, and the number of connected users is large.</li><li>Full: The number of connected users reaches the upper limit, and no more users can be connected.</li></ul> |
| Name             | String | Name of a physical connection AP.                                                                                                                                                                                                                                                                                                                            |
| Description      | String | Description of a physical connection AP.                                                                                                                                                                                                                                                                                                                     |
| AttachedRegionId | String | Physical region ID of an AP. If this region ID is empty, the AP does not belong to any region physically.                                                                                                                                                                                                                                                    |
| Location         | String | Physical location of a physical connection AP.                                                                                                                                                                                                                                                                                                               |
| HostOperator     | String | Data center carrier of a physical connection AP.                                                                                                                                                                                                                                                                                                             |

### 21.2 DiskMonitorDataType

Type of disk monitoring data.

#### Node Name

DiskMonitorData

**Subnode**

| Name                                         | Type    | Description                                                                                                                               |
|----------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------|
| DiskId                                       | String  | ID of the disk.                                                                                                                           |
| Bpsread                                      | Integer | Disk read bandwidth, measured in Byte/s.                                                                                                  |
| Bpswrite                                     | Integer | Disk write bandwidth, measured in Byte/s.                                                                                                 |
| BPSTotal                                     | Integer | Total disk read and write bandwidth, measured in Byte/s.                                                                                  |
| IOPSRead                                     | Integer | Disk IO reads, measured in /s.                                                                                                            |
| IOPSWrite                                    | Integer | Disk IO writes, measured in /s.                                                                                                           |
| IOPSTotal                                    | Integer | Total disk IO read and write operations, measured in /s.                                                                                  |
| Latencyread                                  | Integer | Read latency of a disk, measured in Byte/s.                                                                                               |
| Write latency of a disk, measured in Byte/s. | Integer | Write latency of a disk, measured in Byte/s.                                                                                              |
| TimeStamp                                    | String  | Time stamp of the query, which is presented according to <a href="#">ISO8601</a> , and UTC time is used. The format is yyyy-MM-ddThh:mmZ. |

## 21.3 EipAddressAssociateType

Describes the EIP binding information.

**Node**

Depends on the methods.

**Subnodes**

| Name         | Type   | Description                      |
|--------------|--------|----------------------------------|
| AllocationId | String | Instance ID with an EIP address. |
| IpAddress    | String | EIP address.                     |

| Name                 | Type    | Description                                                                            |
|----------------------|---------|----------------------------------------------------------------------------------------|
| BandWidth            | Integer | Peak Internet bandwidth speed of the EIP. The unit of measurement is Mbps. Default: 5. |
| InternetChargeType   | String  | Billing method of the EIP.                                                             |
| IsSupportUnassociate | Boolean | Whether the EIP can be unbound from the instance or not.                               |

## 21.4 InstanceAttributesType

Lists the ECS instance attributes.

### Node

Depends on the interface.

### Subnodes

| Name               | Type    | Description                                            |
|--------------------|---------|--------------------------------------------------------|
| InstanceId         | String  | Instance ID.                                           |
| InstanceName       | String  | Instance name.                                         |
| Description        | String  | Instance description.                                  |
| ImageId            | String  | ID of the image that is running in the instance.       |
| RegionId           | String  | ID of the region where the instance belongs.           |
| ZoneId             | String  | Zone ID of the zone where the ENS instance is located. |
| Cpu                | Integer | Number of vCPU.                                        |
| GPUSpec            | String  | GPU processor type of the instance.                    |
| GPUAmount          | Integer | GPU processor number of the instance.                  |
| Memory             | Float   | Memory size in GiB.                                    |
| InstanceType       | String  | Instance type.                                         |
| InstanceTypeFamily | String  | Instance type family                                   |
| HostName           | String  | Instance host name.                                    |
| SerialNumber       | String  | Instance serial number.                                |
| Status             | String  | Instance status.                                       |

| Name                    | Type                                      | Description                                                                                                                                                                                                                                                                                                                                   |
|-------------------------|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SecurityGroupIds        | <a href="#">SecurityGroupIdSetType</a>    | Security groups that manage the specified instance.                                                                                                                                                                                                                                                                                           |
| PublicIpAddress         | <a href="#">IpAddressSetType</a>          | Public IP address of the instance.                                                                                                                                                                                                                                                                                                            |
| InternetMaxBandwidthIn  | Integer                                   | Maximum incoming bandwidth from the internet network.                                                                                                                                                                                                                                                                                         |
| InternetMaxBandwidthOut | Integer                                   | Maximum outgoing bandwidth to the internet network.                                                                                                                                                                                                                                                                                           |
| InternetChargeType      | String                                    | The billing method of the network bandwidth. Possible values: <ul style="list-style-type: none"> <li>PayByTraffic: You are billed based on the traffic.</li> </ul>                                                                                                                                                                            |
| CreationTime            | String                                    | Instance creation time. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is yyyy-MM-ddTHH:mm:ssZ.                                                                                                                                                                                           |
| InstanceNetworkType     | String                                    | Network type of the instance. Possible values: Classic   Vpc                                                                                                                                                                                                                                                                                  |
| VpcAttributes           | <a href="#">VpcAttributesType</a>         | VPC related attributes of an ECS instance.                                                                                                                                                                                                                                                                                                    |
| EipAddress              | <a href="#">EipAddressAssociationType</a> | EIP binding information.                                                                                                                                                                                                                                                                                                                      |
| InnerIpAddress          | <a href="#">IpAddressSetType</a>          | Intranet IP address.                                                                                                                                                                                                                                                                                                                          |
| OperationLocks          | <a href="#">OperationLocksType</a>        | Reason why an instance is locked.                                                                                                                                                                                                                                                                                                             |
| InstanceChargeType      | String                                    | Instance billing method. Possible values: <ul style="list-style-type: none"> <li>PrePaid: Subscription.</li> <li>PostPaid: Pay-As-You-Go.</li> </ul>                                                                                                                                                                                          |
| SaleCycle               | String                                    | The billing cycle selected for a Subscription instance. Optional values: week   month   year.                                                                                                                                                                                                                                                 |
| SpotPriceLimit          | Float                                     | The hourly price threshold for a preemptible instance, and it takes effect only when parameter <code>SpotStrategy=SpotWithPriceLimit</code> . Three decimal places are allowed at most.                                                                                                                                                       |
| SpotStrategy            | String                                    | The spot price you are willing to accept for preemptible instances. Possible values: <ul style="list-style-type: none"> <li>NoSpot: A normal Pay-As-You-Go instance.</li> <li>SpotWithPriceLimit: Sets the maximum price for a spot instance.</li> <li>SpotAsPriceGo: A price that is based on the highest Pay-As-You-Go instance.</li> </ul> |

| Name               | Type                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                                      | Default value: NoSpot.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| DeviceAvailable    | Boolean                              | Whether a new disk can attach to the instance or not.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| StoppedMode        | String                               | Whether a VPC-Connected ECS instance is charged after it is stopped or not. Possible values: <ul style="list-style-type: none"> <li>KeepCharging: You are billed after the ECS instance is stopped, and its resource and Internet IP address are reserved.</li> <li>StopCharging: You are not billed after the ECS instance is stopped, and its resource and Internet IP address are not reserved. You may be unable to restart the instance.</li> <li>Not-applicable: The instance is not applicable for using the StoppedMode parameter.</li> </ul>            |
| DeploymentSetId    | String                               | Deployment set ID.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| NetworkInterfaces  | <a href="#">NetworkInterfaceType</a> | The ENI related information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| IoOptimized        | Boolean                              | Whether an instance is I/O optimized or not.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| ExpiredTime        | String                               | Time of expiration. The time format follows the <a href="#">ISO8601</a> standard, and the UTC time is used. The format is yyyy-MM-ddTHH:mm:ssZ.                                                                                                                                                                                                                                                                                                                                                                                                                  |
| KeyPairName        | String                               | SSH key pair name.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| DeletionProtection | Boolean                              | Whether an instance can be released manually through the console or API ( <a href="#">DeleteInstance</a> ). <ul style="list-style-type: none"> <li>true: Deletion protection is enabled.</li> <li>false: Deletion protection is disabled.</li> </ul> <div>  <b>Note:</b><br/> This attribute applies to the Pay-As-You-Go instances and preemptible instances. However, it can only restrict the manual release operation, not the release operation by Alibaba Cloud. </div> |

## 21.5 InstanceRamRoleSetType

A data type of ECS instance RAM role information.

### Node

InstanceRamRoleSet

### Subnodes

| Name        | Type   | Description                       |
|-------------|--------|-----------------------------------|
| InstanceId  | String | Instance ID.                      |
| RamRoleName | String | The instance RAM role names list. |

## 21.6 KeyPairItemType

Type of the SSH key pair.

### Node

KeyPairs

### Subnode

| Name               | Type   | Description                  |
|--------------------|--------|------------------------------|
| KeyPairName        | String | Name of the key pair.        |
| KeyPairFingerPrint | String | Fingerprint of the key pair. |

## 21.7 KeyPairSetType

Type of the SSH key pair combination.

### Node Name

Depends on the methods.

### Subnode

| Name    | Type                            | Description                          |
|---------|---------------------------------|--------------------------------------|
| KeyPair | <a href="#">KeyPairItemType</a> | The KeyPairItemType of the key pair. |

## 21.8 SnapshotLinkType

A set that consists of snapshot link information.

### Node

SnapshotLinks

### Subnode

| Name           | Type    | Description                                                                                                                                           |
|----------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| SnapshotLinkId | String  | The snapshot chain ID.                                                                                                                                |
| RegionId       | String  | The region to where a snapshot chain belongs.                                                                                                         |
| SourceDiskId   | String  | The ID of the disk that maintains all the snapshots of a snapshot chain. If the specified disk has been released, the SourceDiskId is still returned. |
| SourceDiskSize | Integer | The size of a disk, measured in GiB.                                                                                                                  |
| TotalSize      | Integer | The size of all the snapshots in a snapshot chain, measured in Byte.                                                                                  |
| TotalCount     | Integer | The number of snapshots in a snapshot chain.                                                                                                          |
| CreationTime   | String  | The moment when the snapshot is created.                                                                                                              |

## 21.9 VpcAttributesType

The VPC related attributes of an ECS instance.

### Node

Depends on the methods.

### Subnodes

| Name  | Type   | Description    |
|-------|--------|----------------|
| VpcId | String | ID of the VPC. |

| Name             | Type                             | Description                                                                       |
|------------------|----------------------------------|-----------------------------------------------------------------------------------|
| VSwitchId        | String                           | ID of the VSwitch.                                                                |
| PrivateIpAddress | <a href="#">IpAddressSetType</a> | Collection of private IP addresses.                                               |
| NatIpAddress     | String                           | IP address of the Alibaba Cloud product to facilitate interwork between products. |

## 21.10 AssociatedPublicIp

This data type is used when you call related APIs of the ENI.

### Node

Determined by the methods.

### Subnodes

| Name            | Type   | Description                    |
|-----------------|--------|--------------------------------|
| PublicIpAddress | String | Internet IP of an ENI.         |
| AllocationId    | String | EIP (Elastic IP) ID of an ENI. |

## 21.11 Link

The VPC link information about a classic network instance.

### Node

Links

### Subnodes

| Name       | Type   | Description                                                      |
|------------|--------|------------------------------------------------------------------|
| InstanceId | String | The ID of a classic network instance.                            |
| VpcId      | String | The ID of a VPC to which the classic network instance is linked. |

## 21.12 PriceInfoType

The information of latest ECS price, which consists of price and promotion details.

### Node

PriceInfo



**Subnode**

| Name  | Type                      | Description                      |
|-------|---------------------------|----------------------------------|
| Price | <a href="#">PriceType</a> | Price of the specified resource. |
| Rules | <a href="#">RulesType</a> | Promotion details.               |

## 21.13 PriceType

The price information of a specified resource.

**Node Name**

Price

**Subnode**

| Name          | Type   | Description                                                                              |
|---------------|--------|------------------------------------------------------------------------------------------|
| Currency      | String | The unit of currency.                                                                    |
| OriginalPrice | Double | The original price.                                                                      |
| DiscountPrice | Double | The trade discount.                                                                      |
| TradePrice    | Double | The trading price, equal to the value of OriginalPrice minus the value of DiscountPrice. |

## 21.14 PrivateIpSet

This data type is used when the private IP of an ENI is queried.

**Node**

Depends on the methods.

**Subnode**

| Name               | Type                               | Description                                                        |
|--------------------|------------------------------------|--------------------------------------------------------------------|
| PrivateIpAddress   | String                             | Private IP of an ENI.                                              |
| Primary            | Boolean                            | Whether the private IP of an ENI is the primary private IP or not. |
| AssociatedPublicIp | <a href="#">AssociatedPublicIp</a> | Public IP of an ENI.                                               |

## 21.15 ReferencingSecurityGroup

The authorization information about a security group.

### Node

ReferencingGroups

### Subnode

| Name            | Type   | Description                                                         |
|-----------------|--------|---------------------------------------------------------------------|
| SecurityGroupId | String | The ID of an authorized security group.                             |
| AliUid          | Long   | The ID of an Alibaba Cloud user to whom the security group belongs. |

## 21.16 RulesType

### Description

The information of the ECS product promotion details.

### Node

Rule.

### Subnode

| Name        | Type   | Description                       |
|-------------|--------|-----------------------------------|
| RuleId      | Long   | The ID of the promotion.          |
| Description | String | The description of the promotion. |

## 21.17 SecurityGroupReference

Information of the security group authorization.

### Node

GroupReferences

### Subnode

| Name            | Type   | Description                 |
|-----------------|--------|-----------------------------|
| SecurityGroupId | String | The ID of a security group. |

| Name                      | Type                                     | Description                                            |
|---------------------------|------------------------------------------|--------------------------------------------------------|
| ReferencingSecurityGroups | <a href="#">ReferencingSecurityGroup</a> | Other authorization information of the security group. |

## 22 Appendix

### 22.1 Why only ten entries are returned for query request by using APIs or SDK

For some APIs query request, where returns a large amount of information, the returned data is usually displayed in pages for readability. Take the `DescribeImages` as an example, if 39 entries are returned, the result is displayed on four pages by default, with 10 entries on each page. Thus, the returned data looks incomplete.

#### Cause analysis

For example, when you query the available official public images in the region of Asia Pacific SE 1 (Singapore) by `DescribeImages`, if 39 entries of data is returned, the result in **TotalCount** is split into four pages by default. You can add the parameter **PageSize** in your request, and set it to a value greater than 39. If Java SDK is used, **PageSize** can be set to a value greater than 39 by the `setPageSize` method in the Request object. Then the data about 39 images is returned once.

To display more data, you can add the **PageSize** and **PageNumber** parameters in your query request according to the following table.

| Parameter         | Type    | Required | Description                                                                                                         |
|-------------------|---------|----------|---------------------------------------------------------------------------------------------------------------------|
| <b>PageNumber</b> | Integer | No       | Page number of the resource status list. Initial value: 1.<br>Default value: 1.                                     |
| <b>PageSize</b>   | Integer | No       | Number of query entries on each page, configured during pagination query. Maximum value: 100.<br>Default value: 10. |

#### Default display setting sample in Java SDK

By default, the value of **PageSize** is 10. If the value of **PageSize** is not added in a request, null is returned by `getPageSize`. The API server sets **PageSize** to 10 by default.

See the following Java SDK snippet for example:

```
DescribeImagesRequest describe = new DescribeImagesRequest();
//describe.setPageSize(); //By default value of PageSize is 10.
describe.setRegionId("cn-hangzhou");
describe.setImageOwnerAlias("system");
System.out.println("PageSize of the current request:"+describe
.getPageSize());
```

```
DescribeImagesResponse response
    = client.getAcsResponse(describe);

    System.out.println("Total number of images:"+response.
getTotalCount());
    System.out.println("Number of images in the returned response
="+response.getImages().size());
```

### Customize the display setting in Java SDK

In this sample, we use the **setPageSize()** method in Java SDK to **PageSize** to 50. Then, all images are returned at a time.

See the following Java SDK snippet for example:

```
DescribeImagesRequest describe = new DescribeImagesRequest();
    describe.setPageSize(50);//Here in the Request, the value of
    PageSize is set to 50 by the setPageSize() method.
    describe.setRegionId("cn-hangzhou");
    describe.setImageOwnerAlias("system");
    System.out.println("PageSize of the current request:"+describe
    .getPageSize());
    try {
        DescribeImagesResponse response
            = client.getAcsResponse(describe);

        System.out.println("Total number of images:"+response.
getTotalCount());
        System.out.println("Number of images in the returned
response="+response.getImages().size());
```



#### Note:

The maximum value of **PageSize** is 100. If the query result includes more than 100 entries of data, the data on the last few pages must be obtained by **PageNumber**, namely, multiple requests are submitted to obtain all the returned data, with **PageNumber** setting to 1, 2, 3... respectively. You can also specify the value of **PageNumber** in your request by **setPageNumber()**.

## 22.2 API behavior for accounts with overdue payment

When payment is overdue, the **OperationLocks** in the outgoing parameters returned by the **DescribeInstances** or **DescribeDisks** will include **LockReason: financial**.

### API request consequence with overdue payment

In the following tables, "Normal Logic" indicates that the interface is executed and result returned based on the normal logic of the interface.

**Table 22-1: Instance with overdue payment**

| Actions                        | Disk Payment Overdue | Disk Normal  |
|--------------------------------|----------------------|--------------|
| AllocatePublicIpAddress        | Error                | Error        |
| AttachDisk                     | Error                | Normal logic |
| AuthorizeSecurityGroup         | Normal logic         | Normal logic |
| CreateDisk                     | Error                | Normal logic |
| CreateImage                    | Normal logic         | Normal logic |
| CreateInstance                 | Error                | Error        |
| CreateSecurityGroup            | Normal logic         | Normal logic |
| CreateSnapshot                 | Normal logic         | Normal logic |
| DeleteDisk                     | Normal logic         | Normal logic |
| DeleteImage                    | Normal logic         | Normal logic |
| DeleteInstance                 | Normal logic         | Normal logic |
| DeleteSecurityGroup            | Normal logic         | Normal logic |
| DeleteSnapshot                 | Normal logic         | Normal logic |
| DescribeAutoSnapshotPolicy     | Normal logic         | Normal logic |
| DescribeDisks                  | Normal logic         | Normal logic |
| DescribeImages                 | Normal logic         | Normal logic |
| DescribeInstanceStatus         | Normal logic         | Normal logic |
| DescribeInstanceTypes          | Normal logic         | Normal logic |
| DescribeInstanceMonitorData    | Normal logic         | Normal logic |
| DescribeRegions                | Normal logic         | Normal logic |
| DescribeSecurityGroupAttribute | Normal logic         | Normal logic |
| DescribeSecurityGroups         | Normal logic         | Normal logic |
| DescribeSnapshotAttribute      | Normal logic         | Normal logic |
| DescribeSnapshots              | Normal logic         | Normal logic |
| DescribeZones                  | Normal logic         | Normal logic |
| DetachDisk                     | Normal logic         | Normal logic |
| JoinSecurityGroup              | Normal logic         | Normal logic |

| Actions                  | Disk Payment Overdue | Disk Normal  |
|--------------------------|----------------------|--------------|
| LeaveSecurityGroup       | Normal logic         | Normal logic |
| ModifyAutoSnapshotPolicy | Normal logic         | Normal logic |
| ModifyDiskAttribute      | Normal logic         | Normal logic |
| ModifyInstanceAttribute  | Normal logic         | Normal logic |
| RebootInstance           | -                    | -            |
| RelnitDisk               | Error                | Error        |
| ReplaceSystemDisk        | Error                | Error        |
| ResetDisk                | Error                | Error        |
| RevokeSecurityGroup      | Normal logic         | Normal logic |
| StartInstance            | Error                | Error        |
| StopInstance             | -                    | -            |

**Table 22-2: Disk with overdue payment**

| Actions                    | Instance Payment Overdue | Instance Normal |
|----------------------------|--------------------------|-----------------|
| AllocatePublicIpAddress    | Error                    | Normal logic    |
| AttachDisk                 | Error                    | Error           |
| AuthorizeSecurityGroup     | Normal logic             | Normal logic    |
| CreateDisk                 | Error                    | Error           |
| CreateImage                | Normal logic             | Normal logic    |
| CreateInstance             | Error                    | Normal logic    |
| CreateSecurityGroup        | Normal logic             | Normal logic    |
| CreateSnapshot             | Normal logic             | Normal logic    |
| DeleteDisk                 | Normal logic             | Normal logic    |
| DeleteImage                | Normal logic             | Normal logic    |
| DeleteInstance             | Normal logic             | Normal logic    |
| DeleteSecurityGroup        | Normal logic             | Normal logic    |
| DeleteSnapshot             | Normal logic             | Normal logic    |
| DescribeAutoSnapshotPolicy | Normal logic             | Normal logic    |
| DescribeDisks              | Normal logic             | Normal logic    |

| Actions                        | Instance Payment Overdue | Instance Normal |
|--------------------------------|--------------------------|-----------------|
| DescribeImages                 | Normal logic             | Normal logic    |
| DescribeInstanceStatus         | Normal logic             | Normal logic    |
| DescribeInstanceMonitorData    | Normal logic             | Normal logic    |
| DescribeRegions                | Normal logic             | Normal logic    |
| DescribeSecurityGroupAttribute | Normal logic             | Normal logic    |
| DescribeSecurityGroups         | Normal logic             | Normal logic    |
| DescribeSnapshotAttribute      | Normal logic             | Normal logic    |
| DescribeSnapshots              | Normal logic             | Normal logic    |
| DescribeZones                  | Normal logic             | Normal logic    |
| DetachDisk                     | Normal logic             | Normal logic    |
| JoinSecurityGroup              | Normal logic             | Normal logic    |
| LeaveSecurityGroup             | Normal logic             | Normal logic    |
| ModifyAutoSnapshotPolicy       | Normal logic             | Normal logic    |
| ModifyDiskAttribute            | Normal logic             | Normal logic    |
| ModifyInstanceAttribute        | Error                    | Normal logic    |
| ModifyInstanceSpec             | Error                    | Normal logic    |
| RebootInstance                 | -                        | -               |
| ReInitDisk                     | Error                    | Normal logic    |
| ReplaceSystemDisk              | Error                    | Normal logic    |
| ResetDisk                      | Error                    | Error           |
| RevokeSecurityGroup            | Normal logic             | Normal logic    |
| StartInstance                  | Error                    | Normal logic    |
| StopInstance                   | -                        | -               |



## 22.3 API behavior when an instance is locked for security reasons

This topic provides the API request consequence when your resource is frozen due to security concerns.

### API request consequence

When a security lock is indicated, the `OperationLocks` in the outgoing parameters returned by the `DescribeInstances` will include `LockReason: security`.

**Note:**

Disk-related activities in the `In_use` status reference the instance `OperationLocks`. Otherwise, the instance `OperationLocks` may be ignored.

In the following table, "Normal Logic" indicates that the interface is executed and result returned based on the normal logic of the interface.

| Interface                               | Behavior                                                                           |
|-----------------------------------------|------------------------------------------------------------------------------------|
| <code>AllocatePublicIpAddress</code>    | Error                                                                              |
| <code>AttachDisk</code>                 | Error                                                                              |
| <code>AuthorizeSecurityGroup</code>     | Normal logic                                                                       |
| <code>CreateDisk</code>                 | Normal logic                                                                       |
| <code>CreateImage</code>                | Normal logic                                                                       |
| <code>CreateInstance</code>             | Normal logic                                                                       |
| <code>CreateSecurityGroup</code>        | Normal logic                                                                       |
| <code>CreateSnapshot</code>             | Error (Only for disks attached on this instance in the <code>In_use</code> status) |
| <code>DeleteDisk</code>                 | Normal logic                                                                       |
| <code>DeleteImage</code>                | Normal logic                                                                       |
| <code>DeleteInstance</code>             | Normal logic                                                                       |
| <code>DeleteSecurityGroup</code>        | Normal logic                                                                       |
| <code>DeleteSnapshot</code>             | Normal logic                                                                       |
| <code>DescribeAutoSnapshotPolicy</code> | Normal logic                                                                       |
| <code>DescribeDisks</code>              | Normal logic                                                                       |
| <code>DescribeImages</code>             | Normal logic                                                                       |

| Interface                      | Behavior                                                                                                                                                   |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DescribeInstanceStatus         | Normal logic                                                                                                                                               |
| DescribeInstanceTypes          | Normal logic                                                                                                                                               |
| DescribeInstanceMonitorData    | Normal logic                                                                                                                                               |
| DescribeRegions                | Normal logic                                                                                                                                               |
| DescribeSecurityGroupAttribute | Normal logic                                                                                                                                               |
| DescribeSecurityGroups         | Normal logic                                                                                                                                               |
| DescribeSnapshotAttribute      | Normal logic                                                                                                                                               |
| DescribeSnapshots              | Normal logic                                                                                                                                               |
| DescribeZones                  | Normal logic                                                                                                                                               |
| DetachDisk                     | Error                                                                                                                                                      |
| JoinSecurityGroup              | Error                                                                                                                                                      |
| LeaveSecurityGroup             | Error                                                                                                                                                      |
| ModifyAutoSnapshotPolicy       | Normal logic                                                                                                                                               |
| ModifyDiskAttribute            | Normal logic                                                                                                                                               |
| ModifyInstanceAttribute        | Error                                                                                                                                                      |
| RebootInstance                 | Error                                                                                                                                                      |
| RelnitDisk                     | <ul style="list-style-type: none"> <li>When the disk is in the <code>In_use</code>:</li> <li>When the disk is in the other status: Normal Logic</li> </ul> |
| ReplaceSystemDisk              | Normal logic                                                                                                                                               |
| ResetDisk                      | Error                                                                                                                                                      |
| RevokeSecurityGroup            | Normal logic                                                                                                                                               |
| StartInstance                  | Error                                                                                                                                                      |
| StopInstance                   | Error                                                                                                                                                      |

## 22.4 Update history

**API version: May 26, 2014**

Last update: April 25, 2017

| Release date   | Update                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| April 25, 2017 | Added SSH key pair APIs. | <ul style="list-style-type: none"> <li>• Added the CreateKeyPair API to create an SSH key pair.</li> <li>• Added the DeleteKeyPairs API to delete SSH key pairs.</li> <li>• Added the DescribeKeyPairs API to query SSH key pairs.</li> <li>• Added the ImportKeyPair API to import an SSH key pair.</li> <li>• Added the AttachKeyPair API to bind an SSH key pair to an ECS instance.</li> <li>• Added the DetachKeyPair API to unbind an SSH key pair from an ECS instance.</li> </ul>                                                                             |
| April 1, 2016  | Added the snapshot APIs. | <ul style="list-style-type: none"> <li>• Added the CreateAutoSnapshotPolicy API to create an automatic snapshot policy.</li> <li>• Added the DeleteAutoSnapshotPolicy API to release an automatic snapshot policy.</li> <li>• Added the ModifyAutoSnapshotPolicyEx API to modify an automatic snapshot policy.</li> <li>• Added the DescribeAutoSnapshotPolicyEx API to query an automatic snapshot policy.</li> <li>• Added the ApplyAutoSnapshotPolicy API to execute an automatic snapshot policy.</li> <li>• Added the CancelAutoSnapshotPolicy API to</li> </ul> |

| Release date      | Update                                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |                                                  | cancel an automatic snapshot policy.                                                                                                                                                                                                                                                                                                                                                                                                        |
| December 22, 2015 | Added the image import and task management APIs. | <ul style="list-style-type: none"> <li>Added the ImportImage API to import custom images of users.</li> <li>Added the DescribeTasks API to query a task list.</li> <li>Added the DescribeTaskAttribute API to query details of a task.</li> <li>Added the CancelTask API to cancel a task.</li> </ul>                                                                                                                                       |
| December 9, 2015  | Modified the tag APIs.                           | <ul style="list-style-type: none"> <li>Deprecated the DescribeResourceByTags API.</li> <li>Set ResourceId to mandatory in the RemoveTags API.</li> <li>Set DescribeInstances to support filtering based on the instance type families.</li> </ul>                                                                                                                                                                                           |
| November 19, 2015 | Launched the new instance series.                | <ul style="list-style-type: none"> <li>Added the DescribeInstanceTypeFamilies API to query information about the instance type families.</li> <li>Set DescribeInstances to support filtering based on the instance type families.</li> <li>Added AvailableInstanceTypes to ZoneType, which indicates all instance types that can be created in the zone.</li> <li>Added the instance types of series II to the returned results.</li> </ul> |
| October 10, 2015  | Launched HaVip.                                  | Supported HaVip-related APIs.                                                                                                                                                                                                                                                                                                                                                                                                               |

| Release date      | Update                                                                                   | Description                                                                                                                                                                                                                                                                           |
|-------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| September 4, 2015 | Launched the ultra cloud disk.                                                           | Supported creation of the ultra cloud disk by setting cloud_efficiency.                                                                                                                                                                                                               |
| August 20, 2015   | Launched the Tag function.                                                               | You can group resources by tags.                                                                                                                                                                                                                                                      |
| August 4, 2015    | Launched the VPC function.                                                               | Supported creation of VPC instances. <ul style="list-style-type: none"> <li>Added the VPC-related APIs.</li> <li>Added the VRouter-related APIs.</li> <li>Added the VSwitch-related APIs.</li> <li>Added the EIP-related APIs.</li> <li>Added the RouteTable-related APIs.</li> </ul> |
| May 15, 2015      | Launched the shared image.                                                               | Added the shared image API.                                                                                                                                                                                                                                                           |
| May 14, 2015      | Modified RAM authorization mode from four-step authorization to five-step authorization. | <ul style="list-style-type: none"> <li>Added the requirement that accountid should be specified for the RAM authorization mode.</li> <li>The original four-step authorization mode is still compatible, but the new five-step authorization is recommended.</li> </ul>                |
| April 21, 2015    | Added the disk resizing function.                                                        | <ul style="list-style-type: none"> <li>Added the ResizeDisk API.</li> <li>Modified error codes for some APIs.</li> </ul>                                                                                                                                                              |
| March 1, 2015     | Added the Chinese description of error codes.                                            | <ul style="list-style-type: none"> <li>Added the Chinese description of error codes related to APIs.</li> <li>Added the missing parameters for security group APIs.</li> </ul>                                                                                                        |

| Release date     | Update                                                                                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                  |                                                                                              | <ul style="list-style-type: none"> <li>Added the security group API ModifySecurityGroupAttribute.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                            |
| February 6, 2015 | Converted into online files, and added VPC APIs, bug fix information, and small adjustments. | <ul style="list-style-type: none"> <li>Added VPC APIs.</li> <li>Added new instance types.</li> <li>Added the input parameter of EnableAutoSnapshot for the ModifyDiskAttribute API, and added the output parameter of EnableAutoSnapshot for the DescribeDisks API.</li> <li>Corrected the measurement units of InternetTX, InternetRX, IntranetTX, and IntranetRX for DescribeInstanceMonitorData.</li> </ul>                                                                                          |
| July 23, 2014    | Added support for zones, independent basic cloud disks, and automatic snapshots.             | <ul style="list-style-type: none"> <li>Added the input parameter of ZoneId (zone) for some APIs.</li> <li>Modified output parameters of some query APIs.</li> <li>Added error codes and detailed error code scenarios of each API.</li> <li>Updated a large number of sample codes.</li> <li>Added one topic to describe the API actions when an account is in arrears or is locked for security reasons.</li> <li>Added the status chart and status table of independent basic cloud disks.</li> </ul> |
| April 3, 2014    | Made some modifications for global availability.                                             | <ul style="list-style-type: none"> <li>Added and deleted some APIs.</li> <li>Added some error codes.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                         |

| Release date   | Update                                                                                                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                |                                                                                                                     | <ul style="list-style-type: none"> <li>Described in detail the possible error codes of each API.</li> <li>Modified the optional values of some parameters.</li> <li>Improved API descriptions.</li> <li>Used same RequestId for the same API.</li> <li>Added the limitations on CreateImage/AddDisk when snapshots were created before and on July 15, 2013 .</li> <li>Added the limitation for CreateInstance: If the instance memory is 512M, Windows operating system is not supported.</li> <li>If the instance memory is 4G or above, a 32-bit operating system is not supported.</li> <li>Adjusted the DescribeInstanceMonitorData code example and added the InstanceId and Time parameters.</li> </ul> |
| May 22, 2013   | Supplemented descriptions of some instance, disk, and snapshot APIs.                                                | Supplemented descriptions of some instance, disk, and snapshot APIs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| April 10, 2013 | Added some functions, including resetting instances , displaying snapshot names , and querying specified instances. | <ul style="list-style-type: none"> <li>Added the ResetInstance API.</li> <li>Added the SnapshotName attribute for snapshots.</li> <li>Added InstanceId for GetMonitorData to query monitoring information of the specified instance.</li> <li>Supplemented API descriptions.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Release date     | Update                                                  | Description                                                                                                                            |
|------------------|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| January 24, 2013 | Completed the first release of version on May 26, 2014. | Provided operation APIs related to instances, disks, images, snapshots, security groups, public IP addresses, regions, and monitoring. |