

Alibaba Cloud

Container Service for Kubernetes API Reference

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Document conventions








Style	Description	Example
 Danger	A danger notice indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	 Danger: Resetting will result in the loss of user configuration data.
 Warning	A warning notice indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	 Warning: Restarting will cause business interruption. About 10 minutes are required to restart an instance.
 Notice	A caution notice indicates warning information, supplementary instructions, and other content that the user must understand.	 Notice: If the weight is set to 0, the server no longer receives new requests.
 Note	A note indicates supplemental instructions, best practices, tips, and other content.	 Note: You can use Ctrl + A to select all files.
>	Closing angle brackets are used to indicate a multi-level menu cascade.	Click Settings> Network> Set network type .
Bold	Bold formatting is used for buttons, menus, page names, and other UI elements.	Click OK .
Courier font	Courier font is used for commands	Run the <code>cd /d C:/window</code> command to enter the Windows system folder.
<i>Italic</i>	Italic formatting is used for parameters and variables.	<code>bae log list --instanceid</code> <i>Instance_ID</i>
[] or [a b]	This format is used for an optional value, where only one item can be selected.	<code>ipconfig [-all -t]</code>
{ } or {a b}	This format is used for a required value, where only one item can be selected.	<code>switch {active stand}</code>

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1. Use the Kubernetes API

This topic describes how to access the Kubernetes API by using REST calls based on curl commands. You can easily perform operations on Kubernetes clusters through the HTTPS protocol. The following text provides examples on how to create and delete pods, and how to create and modify deployments.

Obtain cluster credentials

1. Log on to the [ACK console](#). On the Clusters page, find the target cluster and click **Manage** in the Actions column.

Cluster Name/ID	Labels	Type	Region (All)	Network Type	Cluster Status	Nodes	Created At	Version	Actions
haij... c1b...		Managed Kubernetes	China (Hangzhou)	VPC Network vpc-bp1ha32nxbx...	Running	2	May 29, 2020, 08:51:07 UTC	1.14.8-allyun.1	Manage View Logs Node Pools Upgrade Cluster More

2. On the Basic Information page, you can find cluster credentials in the kubeconfig file. Copy the content of the kubeconfig file and save it to your local computer.

Connect to a Kubernetes cluster using kubectl Open Cloud Shell

1. Download the latest kubectl client. For more information, see [Kubernetes version changelog](#).
2. Install and set up the kubectl client. For more information, see [Install and set up kubectl](#).
3. Configure the cluster credentials.

Public Access Internal Access Revoke KubeConfig

Copy the following content to \$HOME/.kube/config on your local computer.

```
apiVersion: v1
clusters:
- cluster:
  server: https://...
  certificate-authority-data: LS0tLS1CRUdJTiBDRV...
  E1HTnNiM1ZrTUE4ROExVUVDaE1JYUdGdVozeG9iM1V4RXpBUkFnTlZCQU1UQ210MV1tVn1ibVYwW1hNdwpIaGNOTWpBd05USTVNRGcxTVRJeFdoY05NekF3T1RJM01EZz...
```

Copy

3. Run the following commands to retrieve information about the certificate authority (CA), the private key, and API server.

```
# cat ./kubeconfig |grep client-certificate-data | awk -F ' ' '{print $2}' |base64 -d > client-cert.pem
# cat ./kubeconfig |grep client-key-data | awk -F ' ' '{print $2}' |base64 -d > client-key.pem
# APISERVER=`cat ./kubeconfig |grep server | awk -F ' ' '{print $2}'`
```

Access the Kubernetes API through curl commands

List all namespaces in the current cluster:

```
# curl --cert client-cert.pem --key client-key.pem -k $APISERVER/api/v1/namespaces
```

- Commonly used commands for pod management

List all pods in the default namespace:

```
# curl --cert client-cert.pem --key client-key.pem -k $APISERVER/api/v1/namespaces/default/pods
```

Create a pod (in JSON format):

```
# cat nginx-pod.json
{
  "apiVersion": "v1",
  "kind": "Pod",
  "metadata": {
    "name": "nginx",
    "namespace": "default"
  },
  "spec": {
    "containers": [
      {
        "name": "nginx",
        "image": "nginx:alpine",
        "ports": [
          {
            "containerPort": 80
          }
        ]
      }
    ]
  }
}

# curl --cert client-cert.pem --key client-key.pem -k $APISERVER/api/v1/namespaces/default/pods -
X POST --header 'content-type: application/json' -d@nginx-pod.json
```

Create a pod (in YAML format):

```
# cat nginx-pod.yaml
apiVersion: v1
kind: Pod
metadata:
  name: nginx
  namespace: default
spec:
  containers:
  - name: nginx
    image: nginx:alpine
    ports:
    - containerPort: 80

# curl --cert client-cert.pem --key client-key.pem -k $APISERVER/api/v1/namespaces/default/pods -
X POST --header 'content-type: application/yaml' --data-binary @nginx-pod.yaml
```

Query pod status:

```
# curl --cert client-cert.pem --key client-key.pem -k $APISERVER/api/v1/namespaces/default/pods/n
ginx
```

Query pod logs:

```
# curl --cert client-cert.pem --key client-key.pem -k $APISERVER/api/v1/namespaces/default/pods/n
ginx/log
```

Query metrics about a pod (through the metric-server API):

```
# curl --cert client-cert.pem --key client-key.pem -k $APISERVER/apis/metrics.k8s.io/v1beta1/names
paces/default/pods/nginx
```

Delete a pod:

```
# curl --cert client-cert.pem --key client-key.pem -k $APISERVER/api/v1/namespaces/default/pods/n
ginx -X DELETE
```

- Commonly used commands for deployment management

Create a deployment:


```
# cat nginx-deploy.yaml
apiVersion: extensions/v1beta1
kind: Deployment
metadata:
  name: nginx-deploy
  labels:
    app: nginx
spec:
  replicas: 2
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
      - name: nginx
        image: nginx:alpine
        ports:
        - containerPort: 80
      resources:
        requests:
          cpu: "2"
          memory: "4Gi"

# curl --cert client-cert.pem --key client-key.pem -k $APISERVER/apis/extensions/v1beta1/namespaces/default/deployments -X POST --header 'content-type: application/yaml' --data-binary @nginx-deploy.yaml
```

Query deployments:

```
# curl --cert client-cert.pem --key client-key.pem -k $APISERVER/apis/extensions/v1beta1/namespaces/default/deployments
```

Modify a deployment (change the number of replicas):

```
# curl --cert client-cert.pem --key client-key.pem -k $APISERVER/apis/extensions/v1beta1/namespaces/default/deployments/nginx-deploy -X PATCH -H 'Content-Type: application/strategic-merge-patch+json' -d '{"spec": {"replicas": 4}}'
```

Modify a deployment (change the container image):

```
# curl --cert client-cert.pem --key client-key.pem -k $APISERVER/apis/extensions/v1beta1/namespaces/default/deployments/nginx-deploy -X PATCH -H 'Content-Type: application/strategic-merge-patch+json' -d '{"spec": {"template": {"spec": {"containers": [{"name": "nginx", "image": "nginx:1.7.9"}]}}}'
```


Related information

We recommend that you use officially maintained client libraries to use the Kubernetes API.

- [Officially supported Kubernetes client libraries](#)
- [Kubernetes API specifications](#)
- [Other methods to access the Kubernetes clusters](#)

2.API overview

The following tables list the API operations that are available for use in Alibaba Cloud Container Service for Kubernetes (ACK).

 **Notice** Before you call the API operations to manage ACK clusters, make sure that you have read and agreed to [Disclaimer](#).

Clusters

API	Description
Create a dedicated cluster	You can call <code>CreateCluster</code> to create a dedicated ACK cluster and add a specified number of nodes to the cluster.
Create a managed Kubernetes cluster	You can call <code>CreateCluster</code> to create a managed ACK cluster and add a specified number of nodes to the cluster.
Create a serverless Kubernetes cluster	You can call <code>CreateCluster</code> to create a serverless Kubernetes (ASK) cluster.
Create a managed edge Kubernetes cluster	You can call <code>CreateCluster</code> to create a managed edge cluster.
Create an ACK cluster that supports sandboxed containers	You can call <code>CreateCluster</code> to create an ACK cluster that supports sandboxed containers.
Add worker nodes to a cluster	You can call <code>ScaleOutCluster</code> to add worker nodes to an ACK cluster. Worker nodes can be deployed across zones.
Expand a Kubernetes cluster that supports sandboxed-containers	You can call <code>ScaleOutCluster</code> to add worker nodes to an ACK cluster that supports sandboxed containers. Worker nodes can be deployed across zones.
Scale out a managed edge cluster	You can call <code>ScaleOutCluster</code> to add worker nodes to a managed edge cluster. You can add only Edge Node Service (ENS) instances to the managed edge cluster.
Query a cluster	You can call <code>DescribeClusterDetail</code> to query the details of an ACK cluster with a specified cluster ID.
DescribeClustersV1	You can call <code>DescribeClustersV1</code> to query the information about all clusters created in the Alibaba Cloud Container Service for Kubernetes (ACK) console (including Swarm clusters).

API	Description
Query resources in a cluster	You can call <code>DescribeClusterResources</code> to query all resources in an ACK cluster.
Obtain an agent to access the API server	You can call <code>DescribeExternalAgent</code> to query external agents of the Kubernetes API server.
Query resource quotas	You can call <code>DescribeUserQuota</code> to query resource quotas of your account.
Query the logs of a cluster	You can call <code>DescribeClusterLogs</code> to query logs of an ACK cluster.
Obtain a kubeconfig file of a cluster	You can call <code>DescribeClusterUserKubeconfig</code> to obtain the kubeconfig file of an ACK cluster. The kubeconfig file is used to configure access to an ACK cluster.
Modify a cluster	You can call <code>ModifyCluster</code> to modify the configurations of an ACK cluster.
Delete a cluster	You can call <code>DeleteCluster</code> to delete an ACK cluster with a specified cluster ID and release all nodes in the cluster.
Modify the tags of a cluster	You can call <code>ModifyClusterTags</code> to modify tags of an ACK cluster.
Query tags of resources	You can call <code>ListTagResources</code> to query tags that are attached to one or more resources.

Nodes

API	Description
Query nodes in a cluster	You can call <code>DescribeClusterNodes</code> to query nodes in an ACK cluster.
Remove nodes from a cluster	You can call <code>RemoveClusterNodes</code> to remove nodes from an ACK cluster.
Add existing ECS instances to a cluster	You can call <code>AttachInstances</code> to add an existing Elastic Compute Service (ECS) instance to an ACK cluster.
Generate a script to add a node to a managed edge cluster	You can call <code>DescribeClusterAttachScripts</code> to add an existing node to a managed edge cluster. This operation returns a unique, executable script. You can run the script on an existing node to add the node to a managed edge cluster.
Add existing ENS instances to a managed edge cluster	You can call <code>AttachInstances</code> to add an existing Edge Node Service (ENS) instance to a managed edge cluster.

Upgrades

API	Description
Query the upgrade status of a cluster	You can call <code>GetUpgradeStatus</code> to query the upgrade status of an ACK cluster.
Upgrade a cluster	You can call <code>UpgradeCluster</code> to upgrade an ACK cluster.
Suspend the upgrade of a cluster	You can call <code>PauseClusterUpgrade</code> to pause the upgrade of an ACK cluster.
Cancel the upgrade of a cluster	You can call <code>CancelClusterUpgrade</code> to cancel the upgrade of an ACK cluster.
Resume the upgrade of a cluster	You can call <code>ResumeUpgradeCluster</code> to resume the upgrade of an ACK cluster.

Applications

API	Description
Create an application deployment template	You can call <code>CreateTemplate</code> to create a deployment template for an application.
Query application deployment templates	You can call <code>DescribeTemplates</code> to query deployment templates for an application.
Update an application deployment template	You can call <code>UpdateTemplate</code> to update a deployment template for an application.
Delete an application deployment template	You can call <code>DeleteTemplate</code> to delete a deployment template for an application.

Add-ons

API	Description
Install an add-on for a cluster	You can call <code>InstallClusterAddons</code> to install an add-on in an ACK cluster.
Query the version of a cluster add-on	You can call <code>DescribeClusterAddonsVersion</code> to query the versions of add-ons in an ACK cluster.

API	Description
Query supported add-ons	You can call <code>DescribeAddons</code> to query information about add-ons in an ACK cluster.
Query the upgrade status of a cluster add-on	You can call <code>DescribeClusterAddonUpgradeStatus</code> to query the upgrade status of an add-on in an ACK cluster.
Uninstall an add-on from a cluster	You can call <code>UnInstallClusterAddons</code> to uninstall an add-on from a cluster.

3. Request method

To send a Container Service for Kubernetes API request, you must send an HTTP request to the Container Service for Kubernetes endpoint. You must add the request parameters that correspond to the API operation being called. After you call the API, the system returns a response. The request and response are encoded in UTF-8.

Endpoint

The endpoint of the Container Service for Kubernetes API is *cs.aliyuncs.com*.

Protocol

You can send requests over HTTP or HTTPS. We recommend that you send requests over HTTPS to enhance security.

Request syntax

Container Service for Kubernetes provides a RESTful API. The request syntax is as follows:

```
HTTPMethod /resource_URI_parameters
RequestHeader
RequestBody
```

where:

- **HTTPMethod**: the method of the HTTP request, such as PUT, POST, GET, and DELETE.
- **resource_URI_parameters**: the identifier of the resource to call, for example, `cluster`.
- **RequestHeader**: the request header, which contains information such as the API version, the host name, and authorization information. For more information, see [Common parameters](#).

Request parameters include both common parameters and operation-specific parameters. The common request header contains information such as the API version and authentication information.

- **RequestBody**: the request parameters.

Example:

```
POST /clusters/cluster_id/attach HTTP/1.1
<Common request header>
{
  "password": "Hello1234",
  "instances": [
    "i-xxxx",
    "i-yyyy"
  ]
}
```

Request encoding

All requests and responses are encoded in UTF-8.

4. Signature method

You must sign all API requests to ensure security. Alibaba Cloud uses the request signature to verify the identity of the API caller.

Overview

To sign a RESTful API request, you must add the Authorization field to the request header in the following format:

```
Authorization:acs:AccessKeyId:Signature
```

where:

- **acs**: the abbreviation for Alibaba Cloud Service. This is a fixed field and cannot be modified.
- **AccessKeyId**: the AccessKey ID used to call the API.
- **Signature**: the signature generated after the request has been symmetrically encrypted by using the AccessKey secret.

Signature calculation

The signature algorithm complies with the HMAC-SHA1 specifications in RFC 2104. It uses an AccessKey secret to calculate the Hash-based Message Authentication Code (HMAC) of an encoded and formatted query string and use the HMAC value as the signature. The request signature includes operation-specific parameters. Therefore, the signature of each request varies depending on the request parameters.

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

To calculate a signature, perform the following steps:

1. Compose a string-to-sign (StringToSign).

The StringToSign is a string assembled by using related elements in an API request. It is used to calculate the signature and contains the following elements:

- HTTP header
- Alibaba Cloud protocol headers (CanonicalizedHeaders)
- Canonicalized resource (CanonicalizedResource)
- Body

The string-to-sign must be created in the following format:

```
StringToSign =
  //HTTP header
  HTTP-Verb + "\n" +
  Accept + "\n" +
  Content-MD5 + "\n" + //Place the request body encrypted by using the MD5 algorithm in this field.
  Content-Type + "\n" +
  Date + "\n" +
  //Alibaba Cloud protocol headers (CanonicalizedHeaders)
  CanonicalizedHeaders +
  //Canonicalized resource (CanonicalizedResource)
  CanonicalizedResource
```

Example of an original request:

```
POST /stacks? name=test_alert&status=COMPLETE HTTP/1.1
Host: *.aliyuncs.com
Accept: application/json
Content-MD5: ChDfdfwC+Tn874znq7Dw7Q==
Content-Type: application/x-www-form-urlencoded;charset=utf-8
Date: Thu, 22 Feb 2018 07:46:12 GMT
x-acis-signature-nonce: 550e8400-e29b-41d4-a716-446655440000
x-acis-signature-method: HMAC-SHA1
x-acis-signature-version: 1.0
x-acis-version: 2016-01-02
```

Example of a canonicalized request:

```
POST
application/json
ChDfdfwC+Tn874znq7Dw7Q==
application/x-www-form-urlencoded;charset=utf-8
Thu, 22 Feb 2018 07:46:12 GMT
x-acis-signature-nonce: 550e8400-e29b-41d4-a716-446655440000
x-acis-signature-method:HMAC-SHA1
x-acis-signature-version:1.0
x-acis-version:2016-01-02
/stacks? name=test_alert&status=COMPLETE
```

2. Add the signature string.


Add the calculated signature in the following format to the request header:

```
Authorization: acs AccessKeyId:Signature
```

HTTP header

The HTTP header in the `StringToSign` must contain the values of the following parameters. Parameters must be sorted in alphabetical order. If a parameter has no value, replace it with `\n`.

- **Accept:** the response type required by the client. Valid values: *application/json* and *application/xml*.
- **Content-MD5:** the 128-bit MD5 hash value of the request body represented as a Base64 string.
- **Content-Type:** the type of the HTTP request body defined in RFC 2616.
- **Date:** the GMT time specified in HTTP 1.1. Example: Wed, 05 Sep. 2012 23:00:00 GMT.

 **Note** The HTTP header does not need to contain the `AccessKey`.

Example of an original header:

```
Accept: application/json
Content-MD5: ChDdfwC+Tn874znq7Dw7Q==
Content-Type: application/x-www-form-urlencoded;charset=utf-8
Date: Thu, 22 Feb 2018 07:46:12 GMT
```

Example of a canonicalized header:

```
application/json
ChDdfwC+Tn874znq7Dw7Q==
application/x-www-form-urlencoded;charset=utf-8
Thu, 22 Feb 2018 07:46:12 GMT
```

Alibaba Cloud protocol headers (CanonicalizedHeaders)

`CanonicalizedHeaders` are non-standard HTTP headers of Alibaba Cloud. They are parameters prefixed with `x-acis-` in a request. A request must contain the following parameters:

- **x-acis-signature-nonce:** a unique number that is randomly generated to prevent network replay attacks. You must use different numbers for different requests.
- **x-acis-signature-version:** the version of the signature encryption algorithm. Set the value to `1.0`.
- **x-acis-version:** the version number of the API. For more information, see the API documentation of each product.

To construct Alibaba Cloud canonicalized headers, perform the following steps:

1. Convert the names of all HTTP request headers prefixed with `x-acis-` to lowercase letters. For example, convert `X-acis-OSS-Meta-Name: TaoBao` to `x-acis-oss-meta-name: TaoBao`.
2. Arrange all HTTP request headers that are obtained from the preceding step in alphabetical order.
3. Delete all spaces on either side of a delimiter between the request header and its content. For example, convert `x-acis-oss-meta-name: TaoBao,Alipay` to `x-acis-oss-meta-name:TaoBao,Al`

ipay .

4. Separate all headers and content with delimiters ($\backslash n$) to form the final CanonicalizedHeaders.

Example of an original header:

```
x-acis-signature-nonce: 550e8400-e29b-41d4-a716-446655440000
x-acis-signature-method: HMAC-SHA1
x-acis-signature-version: 1.0
x-acis-version: 2016-01-02GMT
```

Example of a canonicalized header:

```
x-acis-signature-nonce:550e8400-e29b-41d4-a716-446655440000
x-acis-signature-method:HMAC-SHA1
x-acis-signature-version:1.0
x-acis-version:2016-01-02
```

Canonicalized resource (CanonicalizedResource)

CanonicalizedResource represents the specification description of the resource to be accessed. Sort sub-resources along with query in alphabetical order and separate them with ampersands (&) to generate a sub-resource string. The sub-resource string consists of all parameters following the question mark (?).

Example of an original request:

```
/stacks? status=COMPLETE&name=test_alert
```

Example of a canonicalized request:

```
/stacks? name=test_alert&status=COMPLETE
```

Body

Encrypt the request body by using the MD5 algorithm, encode the request body in Base64, and add the Base64-encoded string to the Content-MD5 parameter.

5.RAM authentication

Before you call an Alibaba Cloud API by using a RAM user, you must use an Alibaba Cloud account to create an authorization policy to grant permissions to the RAM user.

Resource authorization

By default, a RAM user is not authorized to call Alibaba Cloud APIs to create or modify cloud resources. Before you use a RAM user to call an API, you must grant the RAM user account the permission to call the API by creating an authorization policy and attaching the policy to the RAM user account.

When you create the authorization policy, you can specify the resource by its Alibaba Resource Name (ARN). An ARN is used to identify the resource for authorization.

The ARN format is described as follows:

```
acs:service-name:region:account-id:resource-relative-id
```

where:

- **acs:** the abbreviation for Alibaba Cloud Service.
- **service-name:** the name of an Alibaba Cloud service, such as `ecs`, `oss`, and `slb`.
- **region:** the region where the service resides. If this option is not supported, use the asterisk (*) wildcard instead.
- **account-id:** the ID of the user account, such as `1234567890123456`.
- **resource-relative-id:** the specific description of a resource. The description varies by service. For more information, see the documentation of each service.

For example, `acs:oss:1234567890123456:sample_bucket/file1.txt` indicates a resource named `sample_bucket/file1.txt` in Alibaba Cloud Object Storage Service (OSS) and `1234567890123456` indicates the ID of the user that the resource belongs to.

Resource types

Resource type	ARN format
Single cluster	<pre>"Resource": ["acs:cs:*:*:cluster/The ID of the cluster."]</pre>

Resource type	ARN format
Multiple clusters	<pre>"Resource": ["acs:cs:*:*:cluster/The ID of the cluster.", "acs:cs:*:*:cluster/The ID of the cluster."]</pre>
All clusters	<pre>"Resource": ["*"]</pre>

API operations

The following table lists the operations that users can be authorized to call.

RAM actions

Action	Description
CreateCluster	Create clusters.
ScaleOutCluster	Expand clusters.
AttachInstances	Add existing ECS instances to clusters.
DescribeClusterAttachScripts	Query scripts for manually adding nodes to clusters.
DescribeClusterUserKubeconfig	Query cluster kubeconfig.
ModifyClusterTags	Modify cluster tags.
DescribeClusterDetail	Query cluster details.
DescribeClusters	Query all clusters.
DeleteClusterNodes	Delete cluster nodes.
DeleteCluster	Delete clusters.
DescribeClusterAddonUpgradeStatus	Query upgrade status of cluster addons.
UnInstallClusterAddons	Uninstall cluster addons.
DescribeClusterAddonsVersion	Query cluster addon details.
ListTagResources	List tag resources.

Action	Description
CancelClusterUpgrade	Cancel cluster upgrade.
CreateTemplate	Create deployment templates.
DeleteTemplate	Delete deployment templates.
CreateTriggerHook	Create triggers for applications.
DeleteTriggerHook	Delete triggers for applications.
DescribeClusterLogs	Query cluster logs.
DescribeExternalAgent	Query external agents.
DescribeTemplates	Query deployment templates.
DescribeUserQuota	Query user quota.
GetUpgradeStatus	Query upgrade status of clusters.
InstallClusterAddons	Install cluster addons.
ModifyCluster	Modify clusters.
PauseClusterUpgrade	Pause cluster upgrade
RemoveClusterNodes	Remove cluster nodes.
ResumeUpgradeCluster	Resume upgrade clusters.
UpdateTemplate	Update deployment templates.
UpgradeCluster	Upgrade clusters.
DescribeClusterNodes	Query cluster nodes.
UpgradeClusterAddons	Upgrade cluster addons.

6.Common parameters

This topic lists the common request header and common response header in a request on the Container Service for Kubernetes API.

Common request header

Common request parameters must be included in all Container Service for Kubernetes API requests.

Parameter	Example	Required	Description
Authorization	acs <yourAccessKeyId>: <yourSignature>	Yes	The authentication information that is used to check the authenticity of the request. The string must follow the <code>AccessKeyId:Signature</code> format.
Content-Length	0	Yes	The content length of the HTTP request defined in RFC 2616.
Content-Type	application/json	Yes	The content type of the HTTP request defined in RFC 2616.
Content-MD5	0e30656xxxxxxxxx x0bc6f70bbdfe	Yes	The Base64-encoded 128-bit MD5 hash value of the HTTP message body. We recommend that you set this parameter for all requests to prevent the requests from being tampered with.
Date	Wed, 16 Dec 2015 11:18:47 GMT	Yes	The time when a request was created. Currently, only the GMT format is supported. If the deviation between the construction time and the MNS server time exceeds 15 minutes, an invalid request is returned.
Host	cs.aliyuncs.com	Yes	The domain name of the Container Service for Kubernetes API, for example, <i>cs.aliyuncs.com</i> .
Accept	application/json	Yes	The type of the response required by the client. Valid values: <i>application/json</i> and <i>application/xml</i> .
x-acis-version	1.0	Yes	The version number of the API. The current version is <i>2015-12-15</i> .
x-acis-region-id	cn-beijing	Yes	The ID of the region.
x-acis-signature-nonce	f63659d4-10ac- 483b-99da- ea8fde61eae3	Yes	A unique number that is randomly generated to prevent network replay attacks. You must use different numbers for different requests.

Parameter	Example	Required	Description
x-acis-signature-method	HMAC-SHA1	Yes	The signature algorithm. Set the value to <i>HMAC-SHA1</i> .

Examples

```
GET /clusters HTTP/1.1
Host: cs.aliyuncs.com
Accept: application/json
User-Agent: cs-sdk-python/0.0.1 (Darwin/15.2.0/x86_64;2.7.10)
x-acis-signature-nonce: f63659d4-10ac-483b-99da-ea8fde61eae3
Authorization: acs <yourAccessKeyId>:<yourSignature>
x-acis-signature-version: 1.0
Date: Wed, 16 Dec 2015 11:18:47 GMT
x-acis-signature-method: HMAC-SHA1
Content-Type: application/json;charset=utf-8
X-Acs-Region-Id: cn-beijing
Content-Length: 0
```

Common response header

Every response returns a unique request ID regardless of whether the call is successful. API responses use the HTTP response format where a `2xx` status code indicates a successful call and a `4xx` or `5xx` status code indicates a failed call.

XML format

```
<? xml version="1.0" encoding="UTF-8"? >
<!--Result Root Node-->
<Interface Name+Response>
| <!--Return Request Tag-->
| <RequestId>4C467B38-3910-447D-87BC-AC049166F216</RequestId>
| <!--Return Result Data-->
</Interface Name+Response>
```

JSON format

```
{
  "RequestId": "4C467B38-3910-447D-87BC-AC049166F216"
  /* Return Result Data */
}
```

7.Clusters

7.1. Create a cluster

7.1.1. Create a dedicated cluster

You can call `CreateCluster` to create a dedicated cluster and add a specified number of nodes to the cluster.

Notes: You must set parameters correctly. Otherwise, you may fail to create a cluster. When you create a cluster in the Container Service console, you can click **Generate API Request Parameters** on the Create Kubernetes Cluster page to view all parameters. For more information, see [Generate API request parameters](#).

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see [Common parameters](#).

Request syntax

```
POST /clusters HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
<code>region_id</code>	String	Yes	cn-beijing	The ID of the region where the cluster is deployed.
<code>name</code>	String	No	test-cluster	The name of the cluster. The name can contain uppercase letters, lowercase letters, Chinese characters, digits, and hyphens (-).
<code>key_pair</code>	String	Yes	key_pair-xxxxxx	The name of the key pair. You must set <code>key_pair</code> or <code>login_password</code> .

Parameter	Type	Required	Example	Description
snat_entry	Boolean	Yes	true	<p>Specifies whether to enable Source Network Address Translation (SNAT).</p> <ul style="list-style-type: none"> • If the VPC has Internet access, set this parameter to false. • If the VPC has no Internet access, valid values include: <ul style="list-style-type: none"> ◦ true: configures SNAT. This enables the cluster to access the Internet. ◦ false: does not configure SNAT. This prevents the cluster from accessing the Internet.
login_password	String	Yes	Yourpasswd1234	<p>The SSH login password. The password must be 8 to 30 characters in length and contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters. You must set login_password or key_pair.</p>
master_system_disk_category	String	Yes	cloud_ssd	<p>The system disk type of master nodes. Valid values:</p> <ul style="list-style-type: none"> • cloud_efficiency: ultra disks. • cloud_ssd: SSDs.
master_system_disk_size	Integer	Yes	120	<p>The system disk size of a master node. Unit: GiB.</p>
num_of_nodes	Integer	Yes	3	<p>The number of worker nodes. Valid values: 0 to 100.</p>
worker_system_disk_category	String	Yes	cloud_efficiency	<p>The system disk type of worker nodes.</p>

Parameter	Type	Required	Example	Description
worker_instance_types	List<String>	Yes	["ecs.i1.2xlarge"]	The ECS instance types of worker nodes. For more information, see Instance families .
master_instance_types	List<String>	Yes	["ecs.n4.xlarge", "ecs.n4.xlarge", "ecs.n4.xlarge"]	The ECS instance types of master nodes. For more information, see Instance families .
master_vswitch_ids	List<String>	Yes	["vsw-2ze4jvvvade1yk899****", "vsw-2ze4jvvvade1yk899****", "vsw-2ze4jvvvade1yk899****"]	The VSwitch IDs of master nodes. Specify one to three VSwitch IDs. We recommend that you specify three VSwitches in different zones to ensure high availability.
worker_system_disk_size	Integer	Yes	120	The system disk size of a worker node. Unit: GiB.
worker_vswitch_ids	List<String>	Yes	["vsw-2ze4jvvvade1yk899****"]	The VSwitch IDs of worker nodes.
cluster_type	String	Yes	Kubernetes	The type of the cluster. Cluster types include managed Kubernetes clusters, dedicated Kubernetes clusters, serverless Kubernetes clusters, and edge clusters.
tags	Array	No	[{"key": "tier", "value": "backend"}]	The tags of the cluster. <ul style="list-style-type: none"> key: the name of the tag. value: the value of the tag.
endpoint_public_access	Boolean	No	true	Specifies whether to enable Internet access to the API server. Valid values: <ul style="list-style-type: none"> true: enables Internet access to the API server. Default value: true. false: disables Internet access to the API server. The API server only allows internal access.

Parameter	Type	Required	Example	Description
kubernetes_version	String	No	1.16.6-aliyun.1	The Kubernetes version. We recommend that you use the latest version.
timeout_mins	Integer	No	60	The timeout period in minutes during which a resource creation operation must be completed. Default value: 60.
disable_rollback	Boolean	No	true	Specifies whether to retain all resources if the operation fails. Valid values: <ul style="list-style-type: none"> true: retains the resources. false: releases the resources. Default value: true. We recommend that you use the default value.
ssh_flags	Boolean	No	true	Specifies whether to enable SSH logon. Valid values: <ul style="list-style-type: none"> true: enables SSH logon. false: disables SSH logon.
cloud_monitor_flags	Boolean	No	true	Specifies whether to install the CloudMonitor agent. Valid values: <ul style="list-style-type: none"> true: installs the CloudMonitor agent. false: does not install the CloudMonitor agent.
deletion_protection	Boolean	No	true	Specifies whether to enable cluster deletion protection. If this option is enabled, the cluster cannot be deleted by operations in the console or API operations.
node_cidr_mask	String	No	26	The prefix length of the node CIDR block.
proxy_mode	String	No	ipvs	The kube-proxy mode. Valid values: iptables and ipvs. Default value: iptables.

Parameter	Type	Required	Example	Description
os_type	String	No	Linux	The operating system of the nodes that run pods. For example, Linux and Windows.
platform	String	No	CentOS	The architecture of the nodes that run pods, for example, x86.
node_port_range	String	No	30000-32767	The service port range of nodes. Valid values: 30000 to 65535.
master_instance_charge_type	String	No	PrePaid	The billing method of master nodes. Valid values: <ul style="list-style-type: none"> PrePaid: subscription. PostPaid: pay-as-you-go. Default value: PostPaid.
worker_instance_charge_type	String	No	PrePaid	The billing method of worker nodes. Valid values: <ul style="list-style-type: none"> PrePaid: subscription. PostPaid: pay-as-you-go. Default value: PostPaid.
master_period	Integer	No	1	The subscription duration of master nodes. This parameter takes effect and is required only if master_instance_charge_type is set to PrePaid. If master_period_unit is set to Month, valid values of master_period include 1, 2, 3, 6, and 12.
worker_period	Integer	No	1	The subscription duration of worker nodes. This parameter takes effect and is required only if worker_instance_charge_type is set to PrePaid. If worker_period_unit is set to Month, valid values of worker_period include 1, 2, 3, 6, and 12.

Parameter	Type	Required	Example	Description
<code>cpu_policy</code>	String	No	none	The CPU policy. For Kubernetes 1.12.6 and later, valid values of <code>cpu_policy</code> include static and none. Default value: none.
<code>worker_period_unit</code>	String	No	Month	The unit of the subscription duration. This parameter is required if <code>worker_instance_charge_type</code> is set to PrePaid. A value of Month indicates that the subscription duration is measured in months.
<code>master_auto_renew</code>	Boolean	No	true	Specifies whether to enable auto renewal for master nodes. This parameter takes effect only if <code>master_instance_charge_type</code> is set to PrePaid. Valid values: <ul style="list-style-type: none"> • true: enables auto renewal for master nodes. • false: disables auto renewal for master nodes.
<code>master_auto_renew_period</code>	Integer	No	6	The auto renewal period for master nodes. This parameter takes effect and is required only if <code>master_instance_charge_type</code> is set to PrePaid and <code>master_auto_renew</code> is set to true. If <code>master_period_unit</code> is set to Month, valid values of <code>master_auto_renew_period</code> include 1, 2, 3, 6, and 12.
<code>worker_auto_renew</code>	Boolean	No	true	Specifies whether to enable auto renewal for worker nodes. Valid values: <ul style="list-style-type: none"> • true: enables auto renewal for worker nodes. • false: disables auto renewal for worker nodes.

Parameter	Type	Required	Example	Description
worker_auto_renew_period	Integer	No	6	The auto renewal period for worker nodes. This parameter takes effect and is required only if worker_instance_charge_type is set to PrePaid and worker_auto_renew is set to true. If worker_period_unit is set to Month, valid values of worker_auto_renew_period include 1, 2, 3, 6, and 12.
master_period_unit	String	No	Month	The unit of the subscription duration. This parameter is required if worker_instance_charge_type is set to PrePaid. A value of Month indicates that the subscription duration is measured in months.
master_count	Integer	No	3	The number of master nodes. Valid values: 3 and 5. Default value: 3.
runtime	Json	No	<code>{"name":"docker","version":"19.03.5"}</code>	The runtime of containers. Default value: docker. Specify the runtime name and version.
worker_data_disk	Boolean	No	true	Specifies whether to mount data disks to worker nodes. Valid values: <ul style="list-style-type: none"> true: mounts data disks to worker nodes. false: does not mount data disks to worker nodes.
vpcid	String	No	vpc-2ze8b1o12tx3ocbzx****	Optional. The ID of the VPC. If this parameter is not specified, the system automatically creates a VPC that uses CIDR block 192.168.0.0/16. Notes: You must specify both the vpcid and vswitch_ids parameters or leave both parameters empty.
security_group_id	String	No	sg-2ze6ess9kho6fdn9****	The ID of the security group to which the ECS instances in the cluster belong.

Parameter	Type	Required	Example	Description
container_cidr	String	No	172.20.0.0/16	The CIDR block of containers. This CIDR block cannot overlap with that of the VPC. If the VPC is automatically created by the system, the CIDR block of containers is set to 172.16.0.0/16.
service_cidr	String	No	172.21.0.0/20	The CIDR block of services. This CIDR block cannot overlap with that of the VPC or containers. If the VPC is automatically created by the system, the CIDR block of services is set to 172.19.0.0/20.
addons	Array	No	<pre>[{"name": "flannel"}, {"name": "flexvolume"}, {"name": "alicloud-disk-controller"}, {"name": "logtail-ds", "config": {"IngressDashboardEnabled": "true"}}, {"name": "nginx-ingress-controller", "config": {"IngressSslbNetworkType": "internet"}}]</pre>	<p>The add-ons to be installed for the cluster.</p> <ul style="list-style-type: none"> • Configure the parameters of add-ons as follows: <ul style="list-style-type: none"> ◦ name: Required. The name of the add-on. ◦ version: Optional. The default value is the latest version. ◦ config: Optional. • Network plug-in: Select Flannel or Terway. • Log Service: Optional. If Log Service is disabled, the cluster audit feature is unavailable. • Ingress: The nginx-ingress-controller component is installed by default.

Parameter	Type	Required	Example	Description
worker_data_disks	Array	No	<pre>[{"category": "cloud", "size": "40", "encrypted": "false"}]</pre>	<p>The data disk configurations of worker nodes, such as the disk type and disk size. This parameter takes effect only if worker_data_disk is set to true.</p> <ul style="list-style-type: none"> category: the type of the data disks. Valid values: <ul style="list-style-type: none"> cloud: basic disks. cloud_efficiency: ultra disks. cloud_ssd: SSDs. size: the size of a data disk. Unit: GiB. encrypted: specifies whether to encrypt data disks. Valid values: true and false.
taints	Array	No		<p>The taints that are added to nodes to ensure appropriate scheduling of pods. If a pod has a toleration that matches the taint on a node, this pod can be scheduled to the node.</p>

Response parameters

Parameter	Type	Example	Description
cluster_id	String	cb95aa626a47740afb6aa099b650****	The ID of the cluster.
request_id	String	687C5BAA-D103-4993-884B-C35E4314A1E1	The ID of the request.
task_id	String	T-5a54309c80282e39ea00002f	The ID of the task. The task ID is automatically assigned by the system and can be used to query task status.

Examples

Sample requests

POST /clusters HTTP/1.1

Common request header

```
{
  "cluster_type": "Kubernetes",
  "name": "test-cluster",
  "region_id": "cn-beijing",
  "snat_entry": "true",
  "key_pair": "key_pair-xxxxxx",
  "login_password": "Yourpasswd1234",
  "master_system_disk_category": "cloud_ssd",
  "master_system_disk_size": "120",
  "num_of_nodes": "3",
  "worker_system_disk_category": "cloud_efficiency",
  "worker_system_disk_size": "120",
  "master_instance_types": ["ecs.n4.xlarge","ecs.n4.xlarge","ecs.n4.xlarge"],
  "master_vswitch_ids": ["vsw-2ze4jvvvade1yk899****","vsw-2ze4jvvvade1yk899****","vsw-2ze4jvvvade1yk899****"],
  "tags": [{"key":"tier","value":"backend"}],
  "worker_instance_types": ["ecs.i1.2xlarge"],
  "worker_vswitch_ids": ["vsw-2ze4jvvvade1yk899****"]
}
```

Sample success responses

XML format

```
<cluster_id>cb95aa626a47740afbf6aa099b650****</cluster_id>
<request_id>687C5BAA-D103-4993-884B-C35E4314A1E1</request_id>
<task_id>T-5a54309c80282e39ea00002f</task_id>
```

JSON format

```
{
  "cluster_id": "cb95aa626a47740afbf6aa099b650****",
  "request_id": "687C5BAA-D103-4993-884B-C35E4314A1E1",
  "task_id": "T-5a54309c80282e39ea00002f"
}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

7.1.2. Create a managed Kubernetes cluster

You can call `CreateCluster` to create a managed Kubernetes cluster that contains a specified number of nodes.

Request information


Request line

```
POST /clusters HTTP/1.1
```

Custom request headers

No custom request headers are used. For more information, see [Common parameters](#) .

Request body

 **Note** You must set parameters correctly. Otherwise, you may fail to create the cluster. When you create a cluster in the Container Service console, you can click **Generate API Request Parameters** on the Create Kubernetes Cluster page to view all parameters. For more information, see [Generate API parameters](#).

```
{
  "disable_rollback": "Specifies whether to retain all resources if the operation fails.",
  "name": "The name of the cluster.",
  "timeout_mins": "The timeout interval for creating a cluster.",
  "cluster_type": "The type of the cluster. Set this parameter to ManagedKubernetes.",
  "region_id": "The ID of the region.",
  "vpcid": "VPC ID",
  "worker_vswitch_ids": "The IDs of VSwitches. Specify one to three VSwitch IDs.",
  "container_cidr": "The CIDR block of pods.",
  "service_cidr": "The service CIDR block.", R",
  "cloud_monitor_flags": "Specifies whether to install the CloudMonitor agent.",
  "login_password": "The SSH logon password. Set login_password or key_pair.",
  "key_pair": "The name of the key pair. You must set key_pair or login_password.",
  "worker_instance_charge_type": "The billing method of worker nodes. Valid values: PrePaid and PostPaid.",
  "worker_period_unit": "The unit of the subscription duration of worker nodes. Valid values: Month and Year. This parameter takes effect only if worker_instance_charge_type is set to PrePaid.",
  "worker_period": "The subscription duration of worker nodes. This parameter takes effect only if worker_instance_charge_type is set to PrePaid.",
  "worker_auto_renew": "Specifies whether to enable auto renewal for worker nodes. Valid values: true and false.",
  "worker_auto_renew_period": "The auto renewal period for worker nodes.",
  "worker_instance_types": "The ECS instance types of worker nodes.", ", "
```

```

"worker_system_disk_category": "The system disk type of worker nodes.",
"worker_system_disk_size": "The system disk size of a worker node.",
"worker_data_disk": "Specifies whether to mount data disks to worker nodes. Valid values: true and false.",
"worker_data_disks": "The data disk configurations of worker nodes.",
"num_of_nodes": "The number of worker nodes.",
"snat_entry": "Specifies whether to enable Source Network Address Translation (SNAT).",
"endpoint_public_access": "Specifies whether to enable Internet access to the endpoint of the cluster."
,
"proxy_mode": "The kube-proxy mode. Valid values: iptables and ipvs.",
"addons": "The add-ons to be installed for the cluster. This parameter must be an array.",
"tags": "The tags of the cluster. This parameter must be an array.",
"security_group_id": "The ID of the security group to which the ECS instances in the cluster belong.",
"taints": "The taints to be added to nodes in the cluster. This parameter must be an array.",
"cpu_policy": "The CPU policy. Valid values: static and none.",
"runtime": "The container runtime. Default value: docker.",
"platform": "The architecture of the nodes that run pods.",
"os_type": "The operating system of the nodes that run pods. For example, Linux and Windows.",
"node_cidr_mask": "The prefix length of the node IP address.",
"kubernetes_version": "The version of the cluster. The default value is the latest version.",
"deletion_protection": "Specifies whether to enable cluster deletion protection. After this option is enabled, the cluster cannot be deleted by operations in the console or API operations."
}

```



Request body parameters

Parameter	Type	Required	Description
cluster_type	string	Yes	The type of the cluster.
key_pair	string	Yes	The name of the key pair. You must specify login_password or key_pair.
login_password	string	Yes	The SSH logon password. The password must be 8 to 30 characters in length and contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters. You must specify login_password or key_pair.

Parameter	Type	Required	Description
name	string	Yes	The name of the cluster. The name can contain uppercase letters, lowercase letters, Chinese characters, digits, and hyphens (-).
num_of_nodes	int	Yes	The number of worker nodes. Valid values: 0 to 100.
region_id	string	Yes	The ID of the region where the cluster is deployed.
snat_entry	bool	Yes	Specifies whether to enable SNAT. If the VPC is automatically created, set the value to true. If an existing VPC is specified, set the value based on whether the VPC has Internet access.
vswitch_ids	list	Yes	The IDs of VSwitches. Specify one to three VSwitch IDs.
worker_system_disk_category	string	Yes	The system disk type of worker nodes.
worker_system_disk_size	int	Yes	The system disk size of a worker node.
addons	list	No	<p>The add-ons to be installed for the cluster.</p> <ul style="list-style-type: none"> • Add-ons parameters: <ul style="list-style-type: none"> ◦ name: Required. The name of the add-on. ◦ version: Optional. If you do not specify this parameter, the latest version is used. ◦ config: Optional. • Network plug-in: Select Flannel or Terway. • Log Service: Optional. If Log Service is disabled, the cluster audit feature is unavailable. • Ingress: The nginx-ingress-controller component is installed by default.
container_cidr	string	No	The CIDR block of containers. This CIDR block cannot overlap with that of the VPC. If the VPC is automatically created by the system, the CIDR block of containers is set to 172.16.0.0/16.

Parameter	Type	Required	Description
cloud_monitor_flags	bool	No	Specifies whether to install the CloudMonitor agent.
disable_rollback	bool	No	Specifies whether to retain all resources if the operation fails. Valid values: <ul style="list-style-type: none"> <i>true</i>: retains the resources. <i>false</i>: releases the resources. We recommend that you use the default value.
public_slb	bool	No	Specifies whether to enable Internet access to the API server. Valid values: <ul style="list-style-type: none"> <i>true</i>: enables Internet access to the API server. Default value: <i>true</i>. <i>false</i>: disables Internet access to the API server. The API server allows requests from the internal network only. <div style="background-color: #e0f2f1; padding: 5px; border: 1px solid #ccc;"> <p> Note The parameter is obsolete and replaced by the <code>endpoint_public_access</code> parameter.</p> </div>
proxy_mode	string	No	The kube-proxy mode. Valid values: <code>iptables</code> and <code>ipvs</code> . Default value: <code>iptables</code> .
endpoint_public_access	bool	No	Specifies whether to enable Internet access to the API server. Valid values: <ul style="list-style-type: none"> <i>true</i>: enables Internet access to the API server. Default value: <i>true</i>. <i>false</i>: disables Internet access to the API server. The API server allows requests from the internal network only.
security_group_id	string	No	The ID of the security group to which the ECS instances in the cluster belong.
service_cidr	string	No	The CIDR block of services. This CIDR block cannot overlap with that of the VPC or containers. If the VPC is automatically created by the system, the CIDR block of services is set to <code>172.19.0.0/20</code> .

Parameter	Type	Required	Description
tags	list	No	The tags of the cluster. <ul style="list-style-type: none"> key: the name of the tag. value: the value of the tag.
taints	list	No	The taints that are added to nodes to ensure appropriate scheduling of pods. If a pod has a toleration that matches the taint on a node, this pod can be scheduled to the node.
timeout_mins	int	No	The timeout period in minutes during which a resource creation operation must be completed. Default value: 60.
vpcid	string	Yes	You must specify the VPC ID. <div style="border: 1px solid #add8e6; padding: 5px; margin-top: 10px;"> <p> Note You can specify both the vpcid and vswitchid parameters.</p> </div>
worker_auto_renew	bool	No	Specifies whether to enable auto renewal for worker nodes. Valid values: <ul style="list-style-type: none"> true: enables auto renewal. false: disables auto renewal.
worker_auto_renew_period	int	No	The auto renewal period for worker nodes. This parameter takes effect and is required only if worker_instance_charge_type is set to PrePaid. If worker_period_unit is set to Month, valid values of worker_auto_renew_period include 1, 2, 3, 6, and 12.
worker_data_disk	string	No	Specifies whether to mount data disks to worker nodes. <ul style="list-style-type: none"> true: mounts data disks to worker nodes. false: does not mount data disks to worker nodes.

Parameter	Type	Required	Description
<code>worker_data_disks</code>	list	No	<p>The data disk configurations of worker nodes, such as the disk type and disk size. This parameter takes effect only if <code>worker_data_disk</code> is set to true.</p> <ul style="list-style-type: none"> <code>category</code>: the type of data disks. Valid values: <ul style="list-style-type: none"> <code>cloud</code>: basic disks. <code>cloud_efficiency</code>: ultra disks. <code>cloud_ssd</code>: SSDs. <code>size</code>: the size of a data disk. Unit: GiB.
<code>worker_data_disk_category</code>	int	No	<p>The type of data disks.</p> <p> Note This parameter is obsolete and replaced by the <code>category</code> parameter in <code>worker_data_disks</code>.</p>
<code>worker_data_disk_size</code>	string	No	<p>The size of a data disk.</p> <p> Note This parameter is obsolete and replaced by the <code>size</code> parameter in <code>worker_data_disks</code>.</p>
<code>worker_instance_charge_type</code>	string	No	<p>The billing method of worker nodes. Valid values:</p> <ul style="list-style-type: none"> <code>PrePaid</code>: subscription. <code>PostPaid</code>: pay-as-you-go.
<code>worker_period</code>	int	No	<p>The subscription duration of worker nodes. This parameter takes effect and is required only if <code>worker_instance_charge_type</code> is set to <code>PrePaid</code>. If <code>worker_period_unit</code> is set to <code>Month</code>, valid values of <code>worker_period</code> include 1, 2, 3, 6, and 12.</p>

Parameter	Type	Required	Description
worker_period_unit	string	No	<p>The unit of the subscription duration. This parameter is required if worker_instance_charge_type is set to PrePaid.</p> <div style="border: 1px solid #add8e6; padding: 5px; margin-top: 10px;"> <p> Note A value of Month indicates that the subscription duration is measured in months.</p> </div>
worker_instance_types	list	Yes	<p>The ECS instance types of worker nodes. For more information, see Instance families.</p>
cpu_policy	string	No	<p>The CPU policy. For Kubernetes 1.12.6 and later, valid values of cpu_policy include static and none. Default value: none.</p>
runtime	json	No	<p>The runtime of containers. Default value: docker. Specify the name and version.</p> <ul style="list-style-type: none"> • name: The name of the container runtime. • version: The version of the container runtime.
platform	string	No	<p>The architecture of the nodes that run pods.</p>
os_type	string	No	<p>The operating system of the nodes that run pods. For example, Linux and Windows.</p>
node_cidr_mask	int	No	<p>The prefix length of the node CIDR block. This parameter specifies the maximum number of pods that can run containers. If you set this parameter to 24, each node can run a maximum of 256 pods. If you set this parameter to 25, each pod can run a maximum of 128 nodes. The formula is described as follows: Maximum number of pods on each node = 2^(32 - node_cidr_mask)</p>
kubernetes_version	string	No	<p>The version of Kubernetes. The default value is the latest version.</p>

Parameter	Type	Required	Description
deletion_protection	bool	No	Specifies whether to enable cluster deletion protection. After this option is enabled, the cluster cannot be deleted by operations in the console or API operations.

Response information

Response line

```
HTTP/1.1 202 Accepted
```

Custom response headers

No custom response headers are used. For more information, see [Common parameters](#) .

Response body

```
{
  "cluster_id": "string",
  "request_id": "string",
  "task_id": "string"
}
```

Examples

Sample requests

```
POST /clusters HTTP/1.1
<Common request headers>
{
  "name": "test",
  "cluster_type": "my-test-Kubernetes-cluster",
  "disable_rollback": true,
  "timeout_mins": 60,
  "kubernetes_version": "1.12.6-aliyun.1",
  "region_id": "cn-beijing",
  "snat_entry": true,
  "cloud_monitor_flags": false,
  "endpoint_public_access": false,
  "node_cidr_mask": "25",
  "proxy_mode": "ipvs",
  "tags": [],
  "addons": [{"name": "flannel"}, {"name": "aliyun-log-controller", "config": "{\"sls_project_name\": \"k8s-log-c64f6eab6a1764d3db9e3dc2b9e41****\"}"}, {"name": "nginx-ingress-controller", "config": "{\"IngressSlsNetworkType\": \"internet\"}"}],
  "worker_instance_types": ["ecs.hfc5.xlarge"],
  "num_of_nodes": 3,
  "worker_system_disk_category": "cloud_efficiency",
  "worker_system_disk_size": 120,
  "worker_instance_charge_type": "PostPaid",
  "vpcid": "vpc-2zegv15etah5requ09nec",
  "container_cidr": "172.20.0.0/16",
  "service_cidr": "172.21.0.0/20",
  "vswitch_ids": ["vsw-2ze48rkq464rsdts1****"],
  "worker_data_disks": [{"category": "cloud_ssd", "size": 500}],
  "login_password": "test@19****",
  "taint": [{"key": "special", "value": "true", "effect": "NoSchedule"}]
}
```

Sample responses

```

HTTP/1.1 202 Accepted
<Common response headers>
{
  "cluster_id": "cb95aa626a47740afbf6aa099b65****",
  "request_id": "687C5BAA-D103-4993-884B-C35E4314A1E1",
  "task_id": "T-5a54309c80282e39ea00002f"
}

```

7.1.3. Create a serverless Kubernetes cluster

You can call `CreateCluster` to describe how to create a serverless Kubernetes cluster.

Request information

Request line

```
POST /clusters HTTP/1.1
```

Custom request headers

None. For more information, see [Common parameters](#).

Request body


```

{
  "cluster_type": "Ask",
  "name": "cluster name",
  "region_id": "region",
  "zoneid": "zone",
  "nat_gateway": "true", //whether to create a NAT gateway
  "private_zone": "true", //whether to enable privateZone for service discovery
  "vpc_id": "VPC ID", //If this parameter is not specified, a VPC network is automatically created.
  "tags": "an array of tags",
  "vswitchid": "VSwitch ID",
}

```

Request body parameters

Name	Type	Required	Description
cluster_type	string	Yes	The type of the cluster.
name	string	Yes	The name of the cluster. The name can contain uppercase and lowercase letters, digits, and hyphens (-).

Name	Type	Required	Description
private_zone	bool	Yes	Whether to enable PrivateZone for service discovery. Valid values: true and false. For more information, see Serverless clusters support the service discovery based on Alibaba Cloud DNS PrivateZone .
region_id	string	Yes	The ID of the region where the cluster is deployed.
zoneid	string	Yes	The zone of the region.
vswitch_ids	string	No	The IDs of the VSwitches. Optional. If this parameter is not specified, the system automatically creates a VSwitch with CIDR block 192.168.0.0/16.
tags	list	No	The tags of the cluster. <ul style="list-style-type: none"> key: The name of the tag. value: The value of the tag.
nat_gateway	bool	No	Whether to create a NAT Gateway. Valid values: true and false. Default is false.
vpc_id	string	No	The ID of the VPC network where the cluster is deployed. Optional. If this parameter is not specified, the system automatically creates a VPC network with CIDR block 192.168.0.0/16. <div style="border: 1px solid #ccc; background-color: #e6f2ff; padding: 5px; margin-top: 10px;"> <p> Note The vpc_id and vswitch_id parameters must be used together.</p> </div>

Response information

Response line

HTTP/1.1 202 Accepted

Custom response headers

None. For more information, see [Common parameters](#).

Response body

Name	Type	Description
cluster_id	string	The ID of the cluster.
request_id	string	The ID of the request.
task_id	string	The ID of the task. The task ID is automatically assigned by the system and used to query task status.

Examples

Sample request

```
POST /clusters HTTP/1.1
<Common request headers>
{
  "cluster_type": "ASK",
  "name": "my-test-Kubernetes-cluster",
  "region_id": "cn-beijing",
  "tags": [],
  "vpcid": "vpc-2zegvl5etah5requ0****",
  "vswitch_ids": ["vsw-2ze48rkq464rsdts1****"]
}
```

Sample response

```
HTTP/1.1 202 Accepted
<Common response headers>
{
  "cluster_id": "cb95aa626a47740afbf6aa099b650****",
  "request_id": "687C5BAA-D103-4993-884B-C35E4314A1E1",
  "task_id": "T-5a54309c80282e39ea00002f"
}
```

7.1.4. Create a managed edge Kubernetes cluster

You can call `CreateCluster` to create a managed edge Kubernetes cluster instance.

Request

Request format

```
POST /clusters HTTP/1.1
```

Custom request headers

None. See [Public request headers](#).


Request body

```
{
  "disable_rollback": "whether to roll back when the operation fails",
  "name": "cluster name",
  "timeout_mins": "cluster creation timeout",
  "cluster_type": "cluster type. ManagedKubernetes",
  "profile": "profile of the edge cluster. Edge",
  "region_id": "region",
  "vpcid": "VPC ID",
  "worker_vswitch_ids": "one or multiple VSwitch IDs. The number of VSwitch IDs can be 1, 2, 3, 4, or 5",
  "container_cidr": "POD CIDR Block",
  "service_cidr": "Service CIDR Block",
  "cloud_monitor_flags": "whether to install the CloudMonitor agent",
  "login_password": "SSH logon password. Select one between SSH authentication and key pair authentication",
  "key_pair": "key pair name. Select one between SSH authentication and key pair authentication",
  "worker_instance_types": "multiple instance types from which Worker instances are to be created",
  "worker_system_disk_category": "system disk type of Worker nodes",
  "worker_system_disk_size": "system disk size of Worker nodes",
  "worker_data_disk": "whether data disks are attached to Worker nodes. Valid values: true or false",
  "worker_data_disk_category": "type of the data disks",
  "worker_data_disk_size": "size of the data disks",
  "num_of_nodes": "number of Worker nodes",
  "snat_entry": "whether to configure SNAT entries",
  "endpoint_public_access": "whether the public network exposes the cluster endpoint",
  "tags": "cluster tags in an array object"
}
```

Request body parameters

Parameter	Type	Required	Description
cluster_type	string	Yse	The type of the cluster.
key_pair	string	Yse	The keypair name. Select one between login_password and key_pair.

Parameter	Type	Required	Description
login_password	string	Yse	The SSH logon password. The password must be 8 to 30 characters in length and contain letters, numbers, and special characters. Select one between login_password and key_pair.
name	string	Yse	The cluster name. The name can contain uppercase and lowercase letters, Chinese characters, digits, and hyphens (-).
num_of_nodes	Integer	Yes	The number of Worker nodes. Valid values: [0, 300]
profile	string	Yse	The profile of the edge cluster. Default value: Edge.
region_id	string	Yse	The ID of the region where the cluster is located.
snat_entry	bool	Yes	Whether to configure SNAT. If the VPC network is automatically created, this parameter must be set to true. If an existing VPC network is used, configure this parameter as follows:
vswitch_ids	list	Yes	The IDs of the VSwitch. The list can contain 1 to 3 list elements.
worker_system_disk_category	string	Yse	The system disk type of Worker nodes.
worker_system_disk_size	Integer	Yes	The system disk size of Worker nodes.

Parameter	Type	Required	Description
container_cidr	string	No	The CIDR block associated with the container. This CIDR block must not overlap with that of the VPC network. If the VPC network is automatically created by the system, the container is associated with CIDR block 172.16.0.0/16 by default.
cloud_monitor_flags	bool	No	Whether to install the CloudMonitor agent. <div style="border: 1px solid #ccc; background-color: #e6f2ff; padding: 5px; margin-top: 10px;"> <p> Note If you choose to use the log service or monitoring service, a cloud ECS node is automatically purchased to deploy the corresponding services. In this case, you must configure the logon information and resource specifications of the Worker node.</p> </div>
disable_rollback	bool	No	Whether to roll back when the operation fails. <ul style="list-style-type: none"> • <i>true</i>: A value of true indicates no. • <i>false</i>: A value of false indicates yes. <p>If you choose to roll back when the operation fails, resources created during the operation are released. We recommend that you choose <i>true</i></p>

Parameter	Type	Required	Description
proxy_mode	string	No	The kube-proxy mode. The iptables and IPVS modes are supported. The default mode is iptables.
endpoint_public_access	bool	No	<p>Whether to allow public access to the API Server.</p> <ul style="list-style-type: none"> A value of true indicates that public access to the API Server is allowed. Default value: true. A value of false indicates that public access to the API Server is denied. <div style="background-color: #e0f2f1; padding: 5px; border: 1px solid #ccc;"> <p> Note In the edge cluster scenario, the edge nodes interact with the cloud through the public network. Therefore, the edge cluster must enable the public network access.</p> </div>
service_cidr	string	No	The service CIDR block. This CIDR block must not overlap with that of the VPC network or container. If the VPC network is automatically created by the system, the service CIDR block is set to 172.19.0.0/20 by default.
tags	list	No	<p>Tag the cluster:</p> <ul style="list-style-type: none"> key: The name of the tag. value: The value of the tag.

Parameter	Type	Required	Description
timeout_mins	int	No	The maximum time in minutes during which the cluster creation operation must be completed. Default: 60.
vpcid	string	No	The ID of the VPC network where the cluster is deployed. Optional. If this parameter is not specified, the system automatically creates a VPC network with CIDR block 192.168.0.0/16. Parameter vpcid and vswitchid must be used together.
worker_data_disk	string	No	Whether data disks are attached to Worker nodes. Valid values: <ul style="list-style-type: none"> A value of true indicates yes. A value of false indicates no.
worker_data_disk_category	int	No	The type of the data disk.
worker_data_disk_size	string	No	The size of the data disk.

Response

Response format

```
HTTP/1.1 202 Accepted
```

Custom response headers

None. See [Public response headers](#).

Response body

```
{
  "cluster_id": "string",
  "request_id": "string",
  "task_id": "string"
}
```

Samples

Sample requests

```
POST /clusters HTTP/1.1
<Common request header>
{
  "name": "test",
  "cluster_type": "ManagedKubernetes",
  "profile": "Edge",
  "disable_rollback": true,
  "timeout_mins": 60,
  "region_id": "cn-beijing",
  "snat_entry": true,
  "cloud_monitor_flags": true,
  "endpoint_public_access": true,
  "tags": [],
  "worker_instance_types": ["ecs.hfc5.xlarge"],
  "num_of_nodes": 1,
  "worker_system_disk_category": "cloud_efficiency",
  "vpcid": "vpc-2zegvl5eta*****",
  "container_cidr": "172.20.0.0/16",
  "service_cidr": "172.21.0.0/20",
  "vswitch_ids": ["vsw-2ze48rkq464rsdts1*****"],
  "login_password": "test@19*****"
}
```

Sample responses

```
HTTP/1.1 202 Accepted
<Common response header>
{
  "cluster_id": "cb95aa626a47740afbf6aa099b65****",
  "request_id": "687C5BAA-D103-4993-884B-C35E4314****",
  "task_id": "T-5a54309c80282e39ea00****"
}
```

7.1.5. Create an ACK cluster that supports sandboxed containers

You can call `CreateCluster` to create an Alibaba Cloud Container Service for Kubernetes (ACK) cluster that supports sandboxed containers.

Request information

Request line

```
POST /clusters HTTP/1.1
```

Custom request headers


None. For more information, see [Public request headers](#).

Request body

```
{
  "name": "The cluster name.",
  "cluster_type": "The cluster type. Set the value to ManagedKubernetes.",
  "disable_rollback": "true",
  "timeout_mins": "60",
  "region_id": "The region where the cluster is deployed.",
  "snat_entry": "Specify whether to configure SNAT entries.",
  "cloud_monitor_flags": "Specify whether to install the CloudMonitor agent.",
  "public_slb": "Specify whether to make the cluster endpoint accessible over the Internet.",
  "worker_instance_type": "The instance type of worker nodes.",
  "num_of_nodes": "The number of worker nodes.",
  "vpcid": "vpc id",
  "vswitch_ids": "VSwitch IDs of worker nodes.",
  "service_cidr": "The service CIDR block.",
  "login_password": "The password for logging on to nodes. Set login_password or key_pair for authentication.",
  "key_pair": "The name of the SSH key pair. Set key_pair or login_password for authentication.",
  "worker_system_disk_category": "The system disk type of worker nodes.",
  "worker_system_disk_size": "The system disk size of worker nodes.",
  "worker_data_disk_category": "The data disk type of worker nodes.",
  "worker_data_disk_size": "The data disk size of worker nodes.",
  "worker_data_disk": "Specify whether to mount data disks. Valid values: true and false.",
  "worker_instance_charge_type": "The billing method of worker nodes. Valid values: PrePaid and PostPaid.",
  "worker_period_unit": "The unit of the subscription duration of worker nodes. Valid values: Month and Year. This parameter takes effect only when the worker_instance_charge_type parameter is set to PrePaid.",
  "worker_period": "The subscription duration of worker nodes. This parameter takes effect only when the worker_instance_charge_type parameter is set to PrePaid.",
  "worker_auto_renew": "Specify whether to automatically renew the subscription of worker nodes. Valid values: true and false.",
  "worker_auto_renew_period": "The renewal period of worker nodes.",
  "kubernetes_version": "The Kubernetes version.",
  "addons": [{"name": "terway-eniip"}],
  "runtime": {"name": "Sandboxed-Container.runv", "version": "1.0.0"},
  "pod_vswitch_ids": "The VSwitch ID of pods. For each VSwitch that is assigned to a node, you must set at least one VSwitch for pods in the same zone."
}
```

Request body parameters

Parameter	Type	Required	Description
addons	list	Yes	<p>The add-ons to the Kubernetes cluster.</p> <ul style="list-style-type: none"> • Add-ons parameters: <ul style="list-style-type: none"> ◦ name: required. The name of the add-on. ◦ version: optional. If you do not specify this parameter, the latest version is used. ◦ config: optional. If you do not specify this parameter, it indicates that this parameter is not required. • Network plug-in: select Flannel or Terway. • Log Service: optional. <ul style="list-style-type: none"> ◦ If Log Service is not enabled, you cannot use the cluster auditing feature. ◦ To enable Log Service, add <code>{"name": "aliyun-log-controller"}</code> to the add-on array.
cluster_type	string	Yes	<p>The cluster type.</p> <p>Set the value to <i>ManagedKubernetes</i>. Sandboxed containers support only managed ACK clusters.</p>
key_pair	string	Yes	<p>The name of the SSH key pair. Select <code>key_pair</code> or <code>login_password</code> for authentication.</p>
kubernetes_version	string	Yes	<p>Sandboxed-containers support only ACK <code>1.14.6-aliyun.1</code> and later.</p>
login_password	string	Yes	<p>The password for logging on to nodes. The password must be 8 to 30 characters in length and contain three of the following four character types: uppercase letters, lowercase letters, digits, and special characters. Select <code>login_password</code> or <code>key_pair</code> for authentication.</p>
name	string	Yes	<p>The cluster name. The name can contain letters, digits, and hyphens (-).</p>

Parameter	Type	Required	Description
num_of_nodes	int	Yes	The number of worker nodes. Valid values: 0 to 100.
pod_vswitch_ids	list	Yes	The ID of the VSwitch used by the pods.
region_id	string	Yes	The ID of the region where the cluster is deployed.
runtime	json	Yes	<ul style="list-style-type: none"> name: the container runtime. Set the value to Sandboxed-Container.runv. version: the runtime version. Set the value to 1.0.0.
snat_entry	bool	Yes	<p>Specify whether to configure SNAT entries for the Virtual Private Cloud (VPC) network.</p> <ul style="list-style-type: none"> If the VPC network has Internet access, set the value to false. If the VPC network does not have Internet access: <ul style="list-style-type: none"> Set the value to true to configure SNAT entries. This enables the cluster to access the Internet. Set the value to false. This indicates that no SNAT entries are configured and therefore the cluster cannot access the Internet.
vpcid	string	Yes	<p>The ID of the VPC network. If this parameter is not specified, the system automatically creates a VPC network with CIDR block 192.168.0.0/16.</p> <div style="border: 1px solid #ccc; background-color: #e6f2ff; padding: 5px; margin-top: 10px;"> <p> Note The vpc_id and vswitch_id parameters must be used together.</p> </div>
vswitch_ids	list	Yes	The VSwitch IDs. The list can contain 1 to 3 VSwitch IDs.
worker_data_disk	bool	Yes	Specify whether to mount data disks. For an ACK cluster that supports sandboxed containers, you must set the value to true.

Parameter	Type	Required	Description
worker_data_disk_size	string	Yes	The data disk size. Unit: GiB. For an ACK cluster that supports sandboxed containers, you must specify a data disk of 200 GiB or larger.
worker_instance_type	string	Yes	The type of instance that supports sandboxed containers. The <i>ecs.ebmg5s.24xlarge</i> and <i>ecs.ebmc5s.24xlarge</i> instance types are supported.
worker_system_disk_category	string	Yes	The system disk type of worker nodes.
worker_system_disk_size	int	Yes	The system disk size of worker nodes. Unit: GiB.
cloud_monitor_flags	bool	No	Specify whether to install the CloudMonitor agent. <ul style="list-style-type: none"> • A value of true indicates yes. • A value of false indicates no.
disable_rollback	bool	No	Specify whether to roll back when the operation fails. <ul style="list-style-type: none"> • A value of true indicates no. • A value of false indicates yes. Default value: true. We recommend that you use the default value. If you set the value to false, the rollback releases resources created during the operation.
endpoint_public_access	bool	No	Specify whether to allow public access to the API Server. <ul style="list-style-type: none"> • A value of true indicates that public access to the API Server is allowed. Default value: true. • A value of false indicates that public access to the API Server is forbidden. Only internal access to the API server is allowed.
service_cidr	string	No	The Service CIDR block. This CIDR block must not overlap with that of the VPC network or containers. If the VPC network is automatically created by the system, the default Service CIDR block is 172.19.0.0/20.

Parameter	Type	Required	Description
tags	list	No	The tags of the cluster. <ul style="list-style-type: none"> key: the name of the tag. value: the value of the tag.
timeout_mins	int	No	The timeout period of resource stack creation. Unit: minutes. Default: 60.
worker_auto_renew	bool	No	Specify whether to enable auto renewal for worker nodes. <ul style="list-style-type: none"> A value of true indicates yes. A value of false indicates no.
worker_auto_renew_period	int	No	The renewal period. This parameter is required when the <code>worker_instance_charge_type</code> parameter is set to PrePaid and the <code>worker_auto_renew</code> parameter is set to true. <ul style="list-style-type: none"> When you specify <code>PeriodUnit=Week</code>, valid values are 1, 2, and 3. When you specify <code>PeriodUnit=Month</code>, valid values are 1, 2, 3, 6, and 12.
worker_data_disk_category	string	No	The data disk type of worker nodes. This parameter takes effect only when the <code>worker_data_disk</code> parameter is set to true. Valid values: <ul style="list-style-type: none"> cloud: basic disk. cloud_efficiency: ultra disk. cloud_ssd: SSD.
worker_instance_charge_type	string	No	The billing method of worker nodes. Valid values: <ul style="list-style-type: none"> PrePaid: the subscription billing method. PostPaid: the pay-as-you-go billing method. Default value: PostPaid.

Parameter	Type	Required	Description
worker_period	int	No	<p>The duration of the subscription. This parameter is required when the <code>worker_instance_charge_type</code> parameter is set to PrePaid.</p> <ul style="list-style-type: none"> When you specify <code>PeriodUnit=Week</code>, valid values are 1, 2, 3, and 4. When you specify <code>PeriodUnit=Month</code>, valid values are 1, 2, 3, 4, 5, 6, 7, 8, 9, 12, 24, 36, 48, and 60.
worker_period_unit	string	No	<p>The unit of the subscription duration. This parameter is required when the <code>worker_instance_charge_type</code> parameter is set to PrePaid. Valid values:</p> <ul style="list-style-type: none"> Week. A value of Week indicates that the subscription duration is measured in weeks. Month. A value of Month indicates that the subscription duration is measured in months.

Response information

Response line

HTTP/1.1 202 Accepted

Custom response headers

None. For more information, see [Public response headers](#).

Response body

Parameter	Type	Description
cluster_id	string	The ID of the cluster instance.
request_id	string	The ID of the request.
task_id	string	The ID of the task. The ID is system-assigned and can be used to query the task status.

Examples

Sample requests

POST /clusters HTTP/1.1

<Common request headers>

```
{
  "name": "test-sandbox",
  "cluster_type": "ManagedKubernetes",
  "disable_rollback": true,
  "timeout_mins": 60,
  "region_id": "cn-hangzhou",
  "snat_entry": true,
  "cloud_monitor_flags": false,
  "endpoint_public_access": true,
  "worker_instance_type": "ecs.ebmg5s.24xlarge",
  "num_of_nodes": 2,
  "vpcid": "vpc-bp1iybm49v9jgb50xxxxx",
  "vswitch_ids": ["vsw-bp1ue9z93i9zpcblxxxxx"],
  "service_cidr": "192.168.0.0/16",
  "login_password": "xxxxxxx",
  "worker_system_disk_category": "cloud_efficiency",
  "worker_system_disk_size": 200,
  "worker_data_disk_category": "cloud_efficiency",
  "worker_data_disk_size": 200,
  "worker_data_disk": true,
  "worker_instance_charge_type": "PostPaid",
  "kubernetes_version": "1.14.6-aliyun.1",
  "addons": [{"name": "terway-eniip"}],
  "runtime": {"name": "Sandboxed-Container.runv", "version": "1.0.0"},
  "pod_vswitch_ids": ["vsw-bp18nj6xxfoc2ci2xxxxx"]
}
```

Response example

HTTP/1.1 202 Accepted

<Common response headers>

```
{
  "cluster_id": "cb95aa626a47740afbf6aa099b65****",
  "request_id": "687C5BAA-D103-4993-884B-C35E4314A1E1",
  "task_id": "T-5a54309c80282e39ea00002f"
}
```

7.2. Expand a cluster

7.2.1. Add worker nodes to a cluster

You can call `ScaleOutCluster` to add worker nodes to a cluster. Worker nodes in a cluster can be deployed in multiple zones.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see [Common parameters](#).

Request syntax

```
POST /api/v2/clusters/{ClusterId} HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
ClusterId	String	Yes	c82e6987e2961451182edacd74faf****	The ID of the cluster.
count	Integer	Yes	1	The number of worker nodes that you want to add.
key_pair	String	Yes	key-pair-xxxxx	The name of the key pair. You must set <code>key_pair</code> or <code>login_password</code> .
login_password	String	Yes	Hello1234	The SSH logon password. The password must be 8 to 30 characters in length and contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters. You must set <code>login_password</code> or <code>key_pair</code> .

Parameter	Type	Required	Example	Description
<code>worker_data_disk</code>	Boolean	Yes	<code>true</code>	Specifies whether to mount data disks to worker nodes. Valid values: <ul style="list-style-type: none"> <code>true</code>: mounts data disks to worker nodes. <code>false</code>: does not mount data disks to worker nodes.
<code>worker_instance_types</code>	List<String>	Yes	<code>["ecs.i1.2xlarge"]</code>	The ECS instance types of worker nodes. For more information, see Instance families .
<code>worker_instance_charge_type</code>	String	No	<code>PrePaid</code>	The billing method of worker nodes. Valid values: <ul style="list-style-type: none"> <code>PrePaid</code>: subscription. <code>PostPaid</code>: pay-as-you-go. Default value: <code>PostPaid</code> .
<code>worker_period</code>	Integer	No	<code>1</code>	The subscription duration of worker nodes. This parameter takes effect and is required only if <code>worker_instance_charge_type</code> is set to <code>PrePaid</code> . If <code>worker_period_unit</code> is set to <code>Month</code> , valid values of <code>worker_period</code> include 1, 2, 3, 6, and 12.
<code>worker_period_unit</code>	String	No	<code>Month</code>	The unit of the subscription duration. This parameter is required if <code>worker_instance_charge_type</code> is set to <code>PrePaid</code> . A value of <code>Month</code> indicates that the subscription duration is measured in months.
<code>worker_auto_renew</code>	Boolean	No	<code>true</code>	Specifies whether to enable auto renewal for worker nodes. Valid values: <ul style="list-style-type: none"> <code>true</code>: enables auto renewal. <code>false</code>: disables auto renewal.

Parameter	Type	Required	Example	Description
worker_auto_renew_period	Integer	No	6	The auto renewal period for worker nodes. This parameter takes effect and is required only if worker_instance_charge_type is set to PrePaid and worker_auto_renew is set to true. If worker_period_unit is set to Month, valid values of worker_auto_renew_period include 1, 2, 3, 6, and 12.
worker_system_disk_category	String	No	cloud_efficiency	The system disk type of worker nodes.
worker_system_disk_size	Integer	No	120	The system disk size of a worker node. Unit: GiB.
cloud_monitor_flags	Boolean	No	true	Specifies whether to install the CloudMonitor agent. Valid values: <ul style="list-style-type: none"> true: installs the CloudMonitor agent. false: does not install the CloudMonitor agent.
cpu_policy	String	No	none	The CPU policy. For Kubernetes 1.12.6 and later, valid values of cpu_policy include static and none. Default value: none.
disable_rollback	Boolean	No	true	Specifies whether to retain all resources if the operation fails. Valid values: <ul style="list-style-type: none"> true: retains the resources. false: releases the resources. Default value: true. We recommend that you use the default value.
vswitch_ids	List<String>	No	["vsw-2ze4jvvvade1yk899****"]	The VSwitch IDs of worker nodes. Specify one to three VSwitch IDs. We recommend that you specify three VSwitches in different zones to ensure high availability.

Parameter	Type	Required	Example	Description
worker_data_disks	Array	No	<pre>[{"category":"cloud","size":"40","encrypted":"false"}]</pre>	<p>The data disk configurations of worker nodes, such as the disk type and disk size. This parameter takes effect only if <code>worker_data_disk</code> is set to true.</p> <ul style="list-style-type: none"> category: the type of the data disks. Valid values: <ul style="list-style-type: none"> cloud: basic disks. cloud_efficiency: ultra disks. cloud_ssd: SSDs. size: the size of a data disk. Unit: GiB. encrypted: specifies whether to encrypt data disks. Valid values: true and false.
tags	Array	No	<pre>[{"key":"tier","value":"backend"}]</pre>	<p>The tags of the cluster.</p> <ul style="list-style-type: none"> key: the name of the tag. value: the value of the tag.
taints	Array	No	<pre>[]</pre>	<p>The taints that are added to nodes to ensure appropriate scheduling of pods. If a pod has a toleration that matches the taint on a node, this pod can be scheduled to the node.</p>

Response parameters

Parameter	Type	Example	Description
cluster_id	String	<code>c82e6987e2961451182edacd74faf****</code>	The ID of the cluster.
instanceId	String	<code>Cccfd68c474454665ace07efce924****</code>	The ID of the worker node.
request_id	String	<code>687C5BAA-D103-4993-884B-C35E4314A1E1</code>	The ID of the request.
task_id	String	<code>T-5a54309c80282e39ea00002f</code>	The ID of the task. The task ID is automatically assigned by the system and can be used to query task status.

Examples

Sample requests

```
POST /api/v2/clusters/[ClusterId] HTTP/1.1
Common request header
{
  "ClusterId": "c82e6987e2961451182edacd74faf",
  "key_pair": "common",
  "vswitch_ids": ["vsw-uf684tfrpwup8gcsw****"],
  "worker_instance_types": ["ecs.c5.xlarge"],
  "worker_system_disk_category": "cloud_efficiency",
  "worker_system_disk_size": 120,
  "worker_data_disk": false,
  "worker_data_disks": [{"category": "cloud_ssd", "size": 500}],
  "tags": [],
  "count": 1
}
```

Sample request description

```
{
  "key_pair": "The name of the key pair. You must set key_pair or login_password.",
  "worker_vswitch_ids": "The IDs of VSwitches. Specify one to three VSwitch IDs.",
  "worker_instance_types": "The ECS instance types of worker nodes.",
  "worker_system_disk_category": "The system disk type of worker nodes.",
  "worker_system_disk_size": "The system disk size of a worker node.",
  "worker_data_disk": "Specifies whether to mount data disks to worker nodes. Valid values: true and false.",
  "tags": "The tags of the cluster. The value must be an array.",
  "count": "The number of worker nodes that you want to add."
  "worker_data_disks": "The data disk configurations of worker nodes.",
}
```

Sample success responses

XML format

```
<cluster_id>c82e6987e2961451182edacd74faf****</cluster_id>
<instanceId>Cccfd68c474454665ace07efce924****</instanceId>
<task_id>T-5a54309c80282e39ea00002f</task_id>
<request_id>687C5BAA-D103-4993-884B-C35E4314A1E1</request_id>
```

JSON format

```
{
  "cluster_id": "c82e6987e2961451182edacd74faf****",
  "instanceId": "Cccfd68c474454665ace07efce924****",
  "task_id": "T-5a54309c80282e39ea00002f",
  "request_id": "687C5BAA-D103-4993-884B-C35E4314A1E1"
}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

7.2.2. Scale out a managed edge cluster

You can call the ScaleOutCluster operation to add worker nodes to an edge cluster. Currently, you can only add Edge Node Service (ENS) instances to edge clusters.

Request information**Request line**

```
POST /api/v2/clusters/{cluster_id} HTTP/1.1
```

Request parameters

Parameter	Type	Required	Description
cluster_id	string	Yes	The ID of the cluster that you want to scale out.

Custom request headers

None. For more information, see [Common parameters](#).

Request body

```
{ "timeout_mins": cluster creation timeout,
  "worker_instance_type": ENS instance type,
  "ens_region_id": ENS region ID, "worker_image_id": operating system image used by worker nodes,
  "ens_internet_charge_type": billing method of worker nodes, "worker_period": subscription duration o
f worker nodes, "worker_auto_renew": whether to automatically renew worker nodes, "worker_auto_
renew_period": subscription duration when worker nodes are renewed, "login_password": worker no
de logon password,
  "count": "number of worker nodes to be added" "worker_system_disk_size": system disk size of worke
r nodes, "worker_data_disk_size": "data disk size of worker nodes", "is_edge_worker": whether the w
orker nodes are edge nodes }
```

Request body parameters

Parameter	Type	Required	Description
count	int	Yes	The number of worker nodes to be added.
worker_instance_type	string	Yes	The ENS instance type.
ens_region_id	string	Yes	The region ID of ENS instances.
worker_image_id	string	Yes	The operating system image used by worker nodes.
ens_internet_charge_type	string	Yes	This parameter is required at first purchase. If you have existing ENS instances, the current billing method is used. <ul style="list-style-type: none"> BandwidthByDay: Daily Peak 95BandwidthByMonth: Monthly 95th Percentile
worker_period	int	Yes	The subscription duration of worker nodes. Unit: months. Valid values: 1, 2, 3, 4, 5, 6, 7, 8, 9, and 12.
login_password	string	Yes	The password of worker nodes.

Parameter	Type	Required	Description
worker_system_disk_size	int	Yes	The system disk size of worker nodes. Unit: GiB. Valid values: 20 to 100. The value must be a multiple of 10. The system disk size must be greater than that of the operating system image.
is_edge_worker	bool	Yes	Set the value to true.
worker_data_disk_size	int	No	The data disk size of worker nodes. A value of 0 indicates that no data disk is required. Otherwise, specify a value that is a multiple of 10 in the range of 20 to 200.
worker_auto_renew	bool	No	Whether to automatically renew worker nodes. Valid values: <ul style="list-style-type: none"> A value of True indicates yes. A value of False indicates no. Default value: False.
worker_auto_renew_period	int	No	The subscription duration when worker nodes are renewed. This parameter is required when parameter worker_auto_renew is set to True. Valid values: Valid values: 1 to 12.
timeout_mins	int	No	The timeout period.

Response information

Response line

```
HTTP/1.1 202 Accepted
```

Custom response headers

None. For more information, see [Common parameters](#).

Response body

```
{
  "cluster_id": "string",
  "request_id": "string",
  "task_id": "string"
}
```

Examples

Sample requests

```
POST /api/v2/clusters/Cccfd68c474454665ace07efce924**** HTTP/1.1
<Common request headers> { "timeout_mins": 60,
  "worker_instance_type": "ens.sn1.tiny",
  "ens_region_id": "cn-beijing-telecom",
  "worker_image_id": "m-2QVLO2T8NYgm8CNQVg15gF",
  "ens_internet_charge_type": "BandwidthByDay",
  "worker_period": 1,
  "worker_auto_renew": true,
  "worker_auto_renew_period": 1,
  "login_password": "Hello1234!",
  "count": 1,
  "worker_system_disk_size": 20,
  "worker_data_disk_size": 0,
  "is_edge_worker": true
}
```

Sample responses

```
HTTP/1.1 202 Accepted
<Common response headers> { "cluster_id": "Cccfd68c474454665ace07efce924****",
  "request_id": "687C5BAA-D103-4993-884B-C35E4314A1E1",
  "task_id": "T-5a54309c80282e39ea00002f"
}
```

7.2.3. Expand a Kubernetes cluster that supports sandboxed-containers

You can call `ScaleOutCluster` to describe how to add worker nodes to a Kubernetes cluster that supports sandboxed-containers. The cluster can be deployed across multiple zones.

Request information

Request line

```
POST /api/v2/clusters/{cluster_id} HTTP/1.1
```

Request parameters

Parameter	Type	Required	Description
cluster_id	string	Yes	The ID of the cluster.

Custom request headers

None. For more information, see [Public request headers](#).

Request body

```
{
  "login_password": "logon password. Select one between password authentication and key pair authentication",
  "worker_instance_charge_type": "PostPaid",
  "worker_vswitch_ids": "VSwitch IDs. Specify one to three VSwitches",
  "worker_instance_types": "instance type of worker nodes",
  "worker_system_disk_category": "system disk type of worker nodes",
  "worker_system_disk_size": "system disk size of worker nodes",
  "worker_data_disk": "whether to mount data disks. true|false",
  "worker_data_disk_category": "data disk type of worker nodes",
  "worker_data_disk_size": "data disk size of worker nodes",
  "tags": "an array of labels",
  "count": "number of worker nodes to be added"
}
```

Request body parameters

Parameter	Type	Required	Description
count	int	Yes	The number of worker nodes to be added to the cluster.

Parameter	Type	Required	Description
login_password	string	Yes	The passwords of the worker nodes to be added. The password must be 8 to 30 characters in length and contain three of the following four types of characters: uppercase letters, lowercase letters, digits, and special characters. Select one between login_password and key_pair.
key_pair	string	Yes	The keypair name. Select one between login_password and key_pair.
vswitch_ids	list	Yes	The VSwitch IDs of the worker nodes.
worker_data_disk	bool	Yes	Whether to mount data disk to worker nodes. <ul style="list-style-type: none"> A value of true indicates yes. A value of false indicates no. To enable sandboxed-containers, you must set the value to <i>true</i> .
worker_data_disk_size	string	Yes	The data disk size in GiB. To enable sandboxed-containers, you must mount a data disk of 200 GiB at least.

Parameter	Type	Required	Description
worker_instance_types	list	Yes	The type of instance that supports sandboxed-containers. Valid values: <ul style="list-style-type: none"> ecs.ebmg5s.24xlarge ecs.ebmc5s.24xlarge ecs.ebmgn6i.24xlarge
worker_data_disk_category	string	No	The data disk type of worker nodes.
worker_system_disk_category	string	No	The system disk type of worker nodes.
worker_system_disk_size	int	No	The system disk size of worker nodes. Unit: GiB.

Return information

Response line

```
HTTP/1.1 202 Accepted
```

Custom response headers

None. For more information, see [Public response headers](#).

Response body

```
{
  "cluster_id": "string",
  "request_id": "string",
  "task_id": "string"
}
```

Example

Sample request

```
POST /api/v2/clusters/Cccfd68c474454665ace07efce924**** HTTP/1.1
<Common request headers>
{
  "login_password":"xxxxxxx",
  "worker_instance_charge_type":"PostPaid",
  "vswitch_ids":["vsw-2zes3rfz7bmk0nxxxxxxx"],
  "worker_instance_types":["ecs.ebmg5s.24xlarge"],
  "worker_system_disk_category":"cloud_efficiency",
  "worker_system_disk_size":120,
  "worker_data_disk":true,
  "worker_data_disk_category":"cloud_efficiency",
  "worker_data_disk_size":200,
  "tags":[],
  "count":1,
  "disable_rollback":false
}
```

Sample response

```
HTTP/1.1 202 Accepted
<Common response headers>
{
  "cluster_id": "Cccfd68c474454665ace07efce924****",
  "request_id": "687C5BAA-D103-4993-884B-C35E4314A1E1",
  "task_id": "T-5a54309c80282e39ea00002f"
}
```

7.3. Modify a cluster

You can call `ModifyCluster` to modify the configurations of a cluster.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameter types

This operation uses common request parameters only. For more information, see [Common parameters](#).

Request syntax

PUT /api/v2/clusters/[ClusterId] HTTPS|HTTP

Request parameters

Parameter	Type	Required	Example	Description
ClusterId	String	Yes	cb95aa626a47740afb6aa099b65****	The ID of the cluster.
deletion_protection	Boolean	No	true	Specifies whether to enable deletion protection for the cluster.
ingress_loadbalancer_id	String	No	lb-wz97kes8tnndkpodw****	The ID of the Server Load Balancer (SLB) instance associated with the ingresses of the cluster.
api_server_eip	Boolean	No	true	Specifies whether to assign an elastic IP address to the API server of the cluster.
api_server_eip_id	String	No	eip-wz9fnasl6dsfhmvcj****	The ID of the elastic IP address that is assigned to the API server of the cluster.
resource_group_id	String	No	""	The ID of the resource group to which the cluster belongs.
ingress_domain_rebinding	String	No	true	Specifies whether to rebind the default domain name of the cluster to the public IP address of the SLB instance associated with the ingresses of the cluster.

Response parameters

Parameter	Type	Example	Description
RequestId	String	687C5BAA-D103-4993-884B-C35E4314****	The ID of the request.
cluster_id	String	cb95aa626a47740afb6aa099b65****	The ID of the cluster.

Parameter	Type	Example	Description
task_id	String	T-5a54309c80282e39ea00****	The ID of the task.

Examples

Sample requests

```
PUT /api/v2/clusters/[ClusterId] HTTP/1.1
Common request parameters
{
  "api_server_eip": "true",
  "api_server_eip_id": "eip-wz9fnasl6dsfhmvc****",
  "ClusterId": "cb95aa626a47740afbf6aa099b65****",
  "deletion_protection": "true",
  "ingress_loadbalancer_id": "lb-wz97kes8tnndkpodw****",
  "resource_group_id": ""
}
```

Sample success responses

XML format

```
<cluster_id>cb95aa626a47740afbf6aa099b65****</cluster_id>
<RequestId>687C5BAA-D103-4993-884B-C35E4314****</RequestId>
<task_id>T-5a54309c80282e39ea00****</task_id>
```

JSON format

```
{"cluster_id":"cb95aa626a47740afbf6aa099b65****","RequestId":"687C5BAA-D103-4993-884B-C35E4314****",
"task_id":"T-5a54309c80282e39ea00****"}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

7.4. Delete a cluster

You can call DeleteCluster to delete the cluster of a specified ID and release all nodes in the cluster.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see [Common parameters](#).

Request syntax

```
DELETE /clusters/{ClusterId} HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
ClusterId	String	Yes	Cccfd68c474454665ace07efce924***	The ID of the cluster.

Response parameters

Parameter	Type	Example	Description
RequestId	String	687C5BAA-D103-4993-884B-C35E4314A1E1	The ID of the request.

Examples

Sample requests

```
DELETE /clusters/{ClusterId} HTTP/1.1
Common request header
{
  "ClusterId": "Cccfd68c474454665ace07efce924****"
}
```

Sample success responses

XML format

```
<RequestId>687C5BAA-D103-4993-884B-C35E4314A1E1</RequestId>
```

JSON format

```
{"RequestId": "687C5BAA-D103-4993-884B-C35E4314A1E1"}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

7.5. Query resources in a cluster

You can call DescribeClusterResources to query all resources in a cluster.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see Common parameters.

Request syntax

```
GET /clusters/[ClusterId]/resources HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
ClusterId	String	Yes	cb95aa626a47740afbf6aa099b65****	The ID of the cluster.

Response parameters

Parameter	Type	Example	Description
resources	Array		A list of resources in the cluster.
instance_id	String	lb-wz9poz4r0ymh8u0ufehzt	The ID of the resource.

Parameter	Type	Example	Description
resource_info	String	<pre>{ "Id": "k8s_master_slb", "Name": "k8s_master_slb", "Type": "ALIYUN::SLB::LoadBalancer", "Status": "CREATE_COMPLETE", "StatusReason": "state changed", "Updated": "2020-05-21T13:25:02", "PhysicalId": "lb-wz9poz4r0ymh8u0ufehzt" }</pre>	The details of the resource. For more information, see Resource details .
resource_type	String	ALIYUN::SLB::LoadBalancer	The type of the resource.
state	String	CREATE_COMPLETE	The status of the resource. Valid values: CREATE_COMPLETE, CREATE_FAILED, CREATE_IN_PROGRESS, DELETE_FAILED, DELETE_IN_PROGRESS, ROLLBACK_COMPLETE, ROLLBACK_FAILED, and ROLLBACK_IN_PROGRESS.

Examples

Sample requests

```
GET /clusters/[ClusterId]/resources HTTP/1.1
Common request header
{
  "ClusterId": "cb95aa626a47740afbf6aa099b65****"
}
```

Sample success responses

`XML` format

```
<0>
  <instance_id>i-wz9aixnfbjo1txoq****</instance_id>
  <resource_type>ALIYUN::ECS::InstanceGroup</resource_type>
  <resource_info>{"Id":"k8s_master_2","Name":"k8s_master_2","Type":"ALIYUN::ECS::InstanceGroup","
Status":"CREATE_COMPLETE","StatusReason":"state changed","Updated":"2020-05-21T13:26:04","Physi
calId":"i-wz9aixnfbjo1txoqp339"}</resource_info>
  <created>2020-05-21T21:39:19+08:00</created>
  <auto_create>1</auto_create>
  <state>CREATE_COMPLETE</state>
</0>
<1>
  <instance_id>i-wz976s1is8lo28ue****</instance_id>
  <resource_type>ALIYUN::ECS::InstanceGroup</resource_type>
  <resource_info>{"Id":"k8s_master_3","Name":"k8s_master_3","Type":"ALIYUN::ECS::InstanceGroup","
Status":"CREATE_COMPLETE","StatusReason":"state changed","Updated":"2020-05-21T13:26:43","Physi
calId":"i-wz976s1is8lo28uenodp"}</resource_info>
  <created>2020-05-21T21:39:19+08:00</created>
  <auto_create>1</auto_create>
  <state>CREATE_COMPLETE</state>
</1>
```

JSON format


```
[
  {
    "instance_id": "i-wz9aixnfbjo1txoq****",
    "resource_type": "ALIYUN::ECS::InstanceGroup",
    "resource_info": "{\"Id\":\"k8s_master_2\",\"Name\":\"k8s_master_2\",\"Type\":\"ALIYUN::ECS::InstanceGroup\",\"Status\":\"CREATE_COMPLETE\",\"StatusReason\":\"state changed\",\"Updated\":\"2020-05-21T13:26:04\",\"PhysicalId\":\"i-wz9aixnfbjo1txoqp339\"}",
    "created": "2020-05-21T21:39:19+08:00",
    "auto_create": 1,
    "state": "CREATE_COMPLETE",
    "dependencies": []
  },
  {
    "instance_id": "i-wz976s1is8lo28ue****",
    "resource_type": "ALIYUN::ECS::InstanceGroup",
    "resource_info": "{\"Id\":\"k8s_master_3\",\"Name\":\"k8s_master_3\",\"Type\":\"ALIYUN::ECS::InstanceGroup\",\"Status\":\"CREATE_COMPLETE\",\"StatusReason\":\"state changed\",\"Updated\":\"2020-05-21T13:26:43\",\"PhysicalId\":\"i-wz976s1is8lo28uenodp\"}",
    "created": "2020-05-21T21:39:19+08:00",
    "auto_create": 1,
    "state": "CREATE_COMPLETE",
    "dependencies": []
  }
]
```

Error codes

For a list of error codes, visit the [API Error Center](#).

7.6. Query a cluster

You can call DescribeClusterDetail to view the details of a cluster based on the cluster ID.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see Common parameters.

Request syntax

GET /clusters/[ClusterId] HTTPS|HTTP

Request parameters

Parameter	Type	Required	Example	Description
ClusterId	String	Yes	cdde1f21ae22e483ebcb068a6eb7f****	The ID of the cluster.

Response parameters

Parameter	Type	Example	Description
cluster_id	String	c82e6987e2961451182edacd74faf****	The ID of the cluster.
cluster_type	String	Kubernetes	The type of the cluster.
current_version	String	1.14.8-aliyun.1	The version of the cluster.
data_disk_category	String	cloud	The type of the data disks.
data_disk_size	Integer	0	The size of a data disk.
deletion_protection	Boolean	true	Indicates whether deletion protection is enabled for the cluster. If this feature is enabled, the cluster cannot be deleted by operations in the console or API operations.
docker_version	String	18.09.2	The version of Docker.
instance_type	String	""	The ECS instance type.
meta_data	String	****	The metadata of the cluster.
name	String	test-k8s	The name of the cluster.
network_mode	String	vpc	The network type of the cluster. vpc indicates Virtual Private Cloud (VPC).

Parameter	Type	Example	Description
region_id	String	cn-beijing	The ID of the region where the cluster is deployed.
resource_group_id	String	rg-acfmyvw3wjm****	The ID of the resource group to which the cluster belongs.
security_group_id	String	sg-25yq****	The ID of the security group to which the ECS instances in the cluster belong.
state	String	running	The status of the cluster. Valid values: running and stopped.
tags	Array		The tags of the cluster.
key	String	type	The name of the tag.
value	String	web	The value of the tag.
vpc_id	String	vpc-2zecuu62b9zw7a7qn****	The ID of the VPC to which the cluster is connected.
vswitch_cidr	String	""	The prefix length of the CIDR block that is assigned to VSwitches.
vswitch_id	String	"vsw-2zete8s4qocqg0mf6****,vsw-2zete8s4qocqg0mf6****,vsw-2zete8s4qocqg0mf6****,vsw-2zete8s4qocqg0mf6****"	The IDs of VSwitches.
zone_id	String	cn-beijing-a	The ID of the zone where the cluster is deployed.

Examples

Sample requests

```
GET /clusters/[ClusterId] HTTP/1.1
Common request header
{
  "ClusterId": "cdde1f21ae22e483ebcb068a6eb7f****"
}
```

Sample success responses

XML format

```
<resource_group_id>rg-acfmyvw3wjm****</resource_group_id>
<vpc_id>vpc-2zecuu62b9zw7a7q****v</vpc_id>
<deletion_protection>>true</deletion_protection>
<network_mode>vpc</network_mode>
<region_id>cn-beijing</region_id>
<current_version>1.14.8-aliyun.1</current_version>
<security_group_id>sg-25yqj***</security_group_id>
<cluster_type>Kubernetes</cluster_type>
<docker_version>18.09.2</docker_version>
<vswitch_cidr>""</vswitch_cidr>
<data_disk_category>cloud</data_disk_category>
<tags>
  <value>web</value>
  <key>type</key>
</tags>
<zone_id>cn-beijing-a</zone_id>
<cluster_id>c82e6987e2961451182edacd74faf****</cluster_id>
<data_disk_size>0</data_disk_size>
<name>test-k8s</name>
<meta_data>****</meta_data>
<vswitch_id>"vsw-2zete8s4qocqg0mf6****,vsw-2zete8s4qocqg0mf6****,vsw-2zete8s4qocqg0mf6****,vs
w-2zete8s4qocqg0mf6****"</vswitch_id>
<state>running</state>
<instance_type>""</instance_type>
```

JSON format

```
{
  "resource_group_id": "rg-acfmyvw3wjm****",
  "vpc_id": "vpc-2zecuu62b9zw7a7qn****",
  "deletion_protection": "true",
  "network_mode": "vpc",
  "region_id": "cn-beijing",
  "current_version": "1.14.8-aliyun.1",
  "security_group_id": "sg-25yqj****",
  "cluster_type": "Kubernetes",
  "docker_version": "18.09.2",
  "vswitch_cidr": "\\\"",
  "data_disk_category": "cloud",
  "tags": [{"value": "web", "key": "type"}],
  "zone_id": "cn-beijing-a",
  "cluster_id": "c82e6987e2961451182edacd74fa76e",
  "data_disk_size": "0",
  "name": "test-k8s",
  "meta_data": "****",
  "vswitch_id": "\\\"vs-w-2zete8s4qocqg0mf6xd76,vs-w-2zete8s4qocqg0mf6xd76,vs-w-2zete8s4qocqg0mf6****,vs-w-2zete8s4qocqg0mf6****\\\"",
  "state": "running",
  "instance_type": "\\\"\\\""}
}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

7.7. Obtain an agent to access the API server

You can call DescribeExternalAgent to obtain an agent to access the API server.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see Common parameters.

Request syntax

```
GET /k8s/[ClusterId]/external/agent/deployment HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
ClusterId	String	Yes	c106f377e16f34eb1808d6b9362c9cb**	The ID of the cluster.

Response parameters

Parameter	Type	Example	Description
config	String	""	The information about the agent.

Examples

Sample requests

```
GET /k8s/[ClusterId]/external/agent/deployment HTTP/1.1
```

Common request header

```
{  
  "ClusterId": ""  
}
```

Sample success responses

XML format

```
<config>""</config>
```

JSON format

```
{"config": ""}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

7.8. Query resource quotas

You can call DescribeUserQuota to query resource quotas.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see Common parameters.

Request syntax

```
GET /quota HTTPS|HTTP
```

Request parameters

Response parameters

Parameter	Type	Example	Description
amk_cluster_quota	Integer	2	The quota of managed clusters.
ask_cluster_quota	Integer	0	The quota of serverless clusters.
cluster_quota	Integer	50	The quota of dedicated clusters.
node_quota	Integer	40	The quota of nodes.

Examples

Sample requests

```
GET /quota HTTP/1.1
Common request header
```

Sample success responses

XML format

```
<amk_cluster_quota>2</amk_cluster_quota>
<cluster_quota>50</cluster_quota>
<node_quota>40</node_quota>
<ask_cluster_quota>0</ask_cluster_quota>
```

JSON format

```
{"amk_cluster_quota": "2", "cluster_quota": "50", "node_quota": "40", "ask_cluster_quota": "0"}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

7.9. Query the logs of a cluster

You can call DescribeClusterLogs to query the logs of a cluster.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see [Common parameters](#).

Request syntax

```
GET /clusters/{ClusterId}/logs HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
ClusterId	String	Yes	c106f377e16f34eb1808d6b9362c9****	The ID of the cluster.

Response parameters

Parameter	Type	Example	Description
cluster_id	String	c106f377e16f34eb1808d6b9362c9****	The ID of the cluster.
cluster_log	String	""	A log of the cluster.
created	String	""	The time when the log was created.
log_level	String	INFO	The level of the log.

Examples

Sample requests

```
GET /clusters/{ClusterId}/logs HTTP/1.1
Common request header
{
  "ClusterId": "c106f377e16f34eb1808d6b9362c9****"
}
```

Sample success responses

XML format


```
<cluster_id>c106f377e16f34eb1808d6b9362c9****</cluster_id>
<cluster_log>""</cluster_log>
<created>""</created>
<log_level>INFO</log_level>
```

JSON format

```
{"cluster_id":"c106f377e16f34eb1808d6b9362c9****","cluster_log":"","created":"","log_level":"INFO"}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

7.10. Query tags of resources

You can call ListTagResources to query tags that are attached to resources.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see Common parameters.

Request syntax

```
GET /tags HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
resource_type	String	Yes	CLUSTER	The type of the resource.
next_token	String	No	1d2db86sca4384811e0b5e8707e* ****	The token of the first page to query.
resource_ids	String	No	["xxxxx","xxxxxx"]	The IDs of the resources to query.

Parameter	Type	Required	Example	Description
tags	String	No	[{"key": "env", "value": "dev"}, {"key": "dev", "value": "IT"}]	The list of tags to query. This list is a JSON string that contains up to 20 key-value pairs.

Description

- You must specify resource_ids or tags. Otherwise, an error message appears.
- Only information of visible tags are returned.

Response parameters

Parameter	Type	Example	Description
request_id	String	F99407AB-2FA9-489E-A259-40CF6D*****	The ID of the request.
tag_resources	Struct		A list of resources that have tags.
tag_resource	Array		The details of a resource.
resource_id	String	xxxxxx	The ID of the resource.
resource_type	String	ALIYUN::CS::CLUSTER	The type of the resource.
tag_key	String	env	The key of the returned tag.
tag_value	String	dev	The value of the returned tag.

Examples

Sample requests

```
GET /tags HTTP/1.1
Common request header
{
  "resource_type": "CLUSTER",
  "resource_ids": ["xxx", "yyy"],
  "tags": [{"key": "env", "value": "dev"}, {"key": "dep", "value": "IT"}]
}
```

Request body

```
GET /tags? resource_ids=["xxx","yyy"]&resource_type=CLUSTER&tags=[{"key":"env","value":"dev"},{"key":"dep","value":"IT"}]
```

Sample success responses

XML format

```
<request_id>3D8795D9-8FF5-46B2-86E6-E3B4073169BE</request_id>
<tag_resources>
  <tag_resource>
    <resource_type>ALIYUN::CS::CLUSTER</resource_type>
    <resource_id>xxxx****</resource_id>
    <tag_key>env</tag_key>
    <tag_value>dev</tag_value>
  </tag_resource>
</tag_resources>
```

JSON format

```
{
  "request_id": "3D8795D9-8FF5-46B2-86E6-E3B4073169BE",
  "tag_resources": {
    "tag_resource": [
      {
        "resource_type": "ALIYUN::CS::CLUSTER",
        "resource_id": "xxxx****",
        "tag_key": "env",
        "tag_value": "dev"
      }
    ]
  }
}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

7.11. Modify the tags of a cluster

You can call `ModifyClusterTags` to modify the tags of a cluster.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see [Common parameters](#).

Request syntax

```
POST /clusters/{ClusterId}/tags HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
ClusterId	String	Yes	c106f377e16f34e b1808d6b9362c9 ****	The ID of the cluster.
key	String	Yes	type	The name of the tag to be modified.
value	String	Yes	web	The value of the tag to be modified.

Response parameters

Parameter	Type	Example	Description
requestId	String	687C5BAA-D103- 4993-884B- C35E4314A1E1	The ID of the request.

Examples

Sample requests

```
POST /clusters/{ClusterId}/tags HTTP/1.1
```

Common request header

```
[
  {
    "key": "xxxxxxx",
    "value": "xxxxxxx"
  }
]
```

Sample success responses

XML format

```
<cluster_id>cb95aa626a47740afbf6aa099b650****</cluster_id>
<request_id>687C5BAA-D103-4993-884B-C35E4314A1E1</request_id>
<task_id>T-5a54309c80282e39ea00002f</task_id>
```

JSON format

```
{
  "cluster_id": "cb95aa626a47740afbf6aa099b650****",
  "request_id": "687C5BAA-D103-4993-884B-C35E4314A1E1",
  "task_id": "T-5a54309c80282e39ea00002f"
}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

8.Nodes

8.1. Query nodes in a cluster

You can call DescribeClusterNodes to query nodes in a cluster.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see Common parameters.

Request syntax

```
GET /clusters/[ClusterId]/nodes HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
ClusterId	String	Yes	c82e6987e2961451182edacd74faf****	The ID of the cluster.
pageSize	String	No	30	The number of entries to return on each page.
pageNumber	String	No	15	The total number of pages to return.
nodepool_id	String	No	""	The ID of the node pool.
state	String	No	""	The status of the cluster.

Response parameters

Parameter	Type	Example	Description
nodes	Array		A list of nodes in the cluster.

Parameter	Type	Example	Description
creation_time	String	2020-03-11T11:09:00+08:00	The time when the node was created.
error_message	String	""	The error message about exceptions on the node.
expired_time	String	2025-12-31T23:59:00+08:00	The time when the node expires.
host_name	String	i22ze3ig3sqoxhr67s5a0xZ	The name of the host.
image_id	String	centos_7_7_x64_20G_alibase_20191225.vhd	The ID of the operating system image used by the node.
instance_charge_type	String	PostPaid	The billing method of the node.
instance_id	String	i-2ze13ykcubmcxhnhqh54	The ID of the node.
instance_name	String	master-01-k8s-for-cs-c264e854539f843298989ea8d6a9cff8a	The instance name assigned by the cluster.
instance_role	String	Master	The role of the node. Valid values: <ul style="list-style-type: none"> Master Worker
instance_status	String	Running	The running status of the node.
instance_type	String	ecs.c5.xlarge	The ECS instance type of the node.
instance_type_family	String	ecs.c5	The ECS instance family of the node.
ip_address	List	[]	The IP address of the node.
is_aliyun_node	Boolean	true	Indicates whether the node is provided by Alibaba Cloud.

Parameter	Type	Example	Description
node_name	String	cn-hangzhou.172.16.1.62	The name of the node.
node_status	String	Ready	Indicates whether the node is ready.
nodepool_id	String	npcaf85bf809754dfa91cd63e80460****	The ID of the node pool.
source	String	ros	The source of the node. Default value: ros.
state	String	running	The running status of the node.
page	Struct		The pagination details.
page_number	Integer	137	The total number of pages returned.
page_size	Integer	1	The number of entries returned per page.
total_count	Integer	6	The total number of entries returned.

Examples

Sample requests

```
GET /clusters/[ClusterId]/nodes HTTP/1.1
Common request header
{
  "ClusterId": "c82e6987e2961451182edacd74faf****"
}
```

Sample success responses

XML format


```

<nodes>
  <error_message>""</error_message>
  <creation_time>2020-03-11T11:09:00+08:00</creation_time>
  <instance_name>master-01-k8s-for-cs-c264e854539f843298989ea8d6a9c****</instance_name>
  <node_status>Ready</node_status>
  <is_aliyun_node>true</is_aliyun_node>
  <node_name>cn-hangzhou.172.16.1.62</node_name>
  <expired_time>2025-12-31T23:59:00+08:00</expired_time>
  <source>ros</source>
  <instance_type_family>ecs.c5</instance_type_family>
  <instance_id>i-2ze13ykubmcxhnh****</instance_id>
  <instance_charge_type>PostPaid</instance_charge_type>
  <instance_role>Master</instance_role>
  <state>running</state>
  <instance_status>Running</instance_status>
  <image_id>centos_7_7_x64_20G_alibase_20191225.vhd</image_id>
  <instance_type>ecs.c5.xlarge</instance_type>
  <nodepool_id>npcf85bf809754dfa91cd63e80460****</nodepool_id>
  <host_name>iZ2ze3ig3sqoxhr67s5****</host_name>
</nodes>
<nodes>
  <ip_address>[]</ip_address>
</nodes>
<page>
  <page_number>137</page_number>
  <total_count>6</total_count>
  <page_size>1</page_size>
</page>

```

JSON format

```

{"nodes":[{"error_message":"","creation_time":"2020-03-11T11:09:00+08:00","instance_name":"master-01-k8s-for-cs-c264e854539f843298989ea8d6a9c****","node_status":"Ready","is_aliyun_node":"true","node_name":"cn-hangzhou.172.16.1.62","expired_time":"2025-12-31T23:59:00+08:00","source":"ros","instance_type_family":"ecs.c5","instance_id":"i-2ze13ykubmcxhnh****","instance_charge_type":"PostPaid","instance_role":"Master","state":"running","instance_status":"Running","image_id":"centos_7_7_x64_20G_alibase_20191225.vhd","instance_type":"ecs.c5.xlarge","nodepool_id":"npcf85bf809754dfa91cd63e80460****","host_name":"iZ2ze3ig3sqoxhr67s5a0xZ"},{"ip_address":[]}],"page":{"page_number":"137","total_count":"6","page_size":"1"}}

```

Error codes

For a list of error codes, visit the [API Error Center](#).

8.2. Remove nodes from a cluster

You can call `RemoveClusterNodes` to remove nodes from a cluster.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see [Common parameters](#).

Request syntax

```
POST /api/v2/clusters/[ClusterId]/nodes/remove HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
ClusterId	String	Yes	c82e6987e2961451182edacd74fa ff7**	The ID of the cluster.
release_node	Boolean	No	false	Specifies whether to release the Elastic Compute Service (ECS) instances when they are removed from the cluster.
drain_node	Boolean	No	true	Specifies whether to remove all pods from the nodes that you want to remove.
nodes	Array	No	[]	A list of the nodes that you want to remove.

Examples

Sample requests

```
POST /api/v2/clusters/[ClusterId]/nodes/remove HTTP/1.1
```

Common request header

```
{
  "ClusterId": "c82e6987e2961451182edacd74faff7**"
}
```

Sample success responses

JSON format

```
{}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

8.3. Add existing ECS instances to a cluster

You can call AttachInstances to add existing Elastic Compute Service (ECS) instances to a cluster.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameter types

This operation uses common request parameters only. For more information, see [Common parameters](#).

Request syntax

```
POST /clusters/[ClusterId]/attach HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
ClusterId	String	Yes	c106f377e16f34eb1808d6b9362c9****	The ID of the cluster.
key_pair	String	Yes	key-***	The name of the key pair. You must set key_pair or password.

Parameter	Type	Required	Example	Description
password	String	Yes	Hello1234	The password of the worker nodes to be added. The password must be 8 to 30 characters in length and contain three of the following character types: uppercase letters, lowercase letters, digits, and special characters. You must set <code>key_pair</code> or <code>password</code> .
format_disk	Boolean	No	false	Specifies whether to format the data disks of the ECS instances.
keep_instance_name	Boolean	No	true	Specifies whether to retain the names of the ECS instances.
cpu_policy	String	No	none	The CPU policy. For Kubernetes 1.12.6 and later, valid values of <code>cpu_policy</code> include <code>static</code> and <code>none</code> . Default value: <code>none</code> .
instances	List<String>	No	["i-0xi187lghfcy5t2d****"]	A list of the ECS instances.
tags	Array	No	[]	The tags of the ECS instances.

Response parameters

Parameter	Type	Example	Description
list	Array		The details of the ECS instance.
code	String	200	The returned status code.
instanceId	String	i-2zee3oiwcyoz7kwd****	The ID of the ECS instance.
message	String	successful	Indicates whether the ECS instance is added to the cluster.

Parameter	Type	Example	Description
task_id	String	T-5a544aff80282e39ea000039	The ID of the task.

Examples

Sample requests

POST /clusters/[ClusterId]/attach HTTP/1.1

Common request parameters

```
{
  "ClusterId": "Cccfd68c474454665ace07efce924****",
  "password": "Hello1234",
  "format_disk": false,
  "keep_instance_name": true,
  "tags": [],
  "instances": ["i-xxxx", "i-yyyy"]
}
```

Sample success responses

XML format

```
<list>
  <code>200</code>
  <instanceId>i-2zee3oiwcyoz7kwd****</instanceId>
  <message>successful</message>
</list>
<list>
  <code>200</code>
  <instanceId>i-2ze0lgm3y6iylcbt****</instanceId>
  <message>successful</message>
</list>
<task_id>T-5a544aff80282e39ea000039</task_id>
```

JSON format

```
{
  "list": [
    {
      "code": "200",
      "instanceId": "i-2zee3oiwcyoz7kwd****",
      "message": "successful"
    },
    {
      "code": "200",
      "instanceId": "i-2ze0lgm3y6iyxcbt****",
      "message": "successful"
    }
  ],
  "task_id": "T-5a544aff80282e39ea000039"
}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

8.4. Add existing ENS instances to a managed edge cluster

You can call `AttachInstances` to add existing Edge Node Service (ENS) instances to a managed edge cluster.

Request information

POST `/clusters/{cluster_id}/attach` HTTP/1.1

Request line parameters

Parameter	Type	Required	Description
<code>cluster_id</code>	string	Yes	The ID of the cluster.

Custom request headers

No custom request headers are used. For more information, see [Common parameters](#).

Request body

```
{
  "instances": "A list of the ENS instances that you want to add.",
  "is_edge_worker": "Specifies whether to configure the worker node as an edge node.",
}
```

Request body parameters

Parameter	Type	Required	Description
instances	Array	Yes	A list of the ENS instances that you want to add.
is_edge_worker	bool	Yes	Specifies whether to configure the worker node as an edge node. Set the value to true.

Response information

Response line

```
HTTP/1.1 202 OK
```

Custom response headers

No custom response headers are used. For more information, see [Common parameters](#) .

Response body

```
{
  "list": [
    {
      "code": "200",
      "instanceId": "i-5j2zjis****",
      "message": "successful"
    },
    {
      "code": "200",
      "instanceId": "i-5j443uf****",
      "message": "successful"
    }
  ],
  "task_id": "T-5d6f733d9e408ec74f000002"
}
```

Examples

Sample requests

```
POST /clusters/Cccfd68c474454665ace07efce924****/attach HTTP/1.1
<Common request header>
{
  "is_edge_worker": true
  "instances": [
    "i-xxxx",
    "i-yyyy"
  ]
}
```

Sample success responses

```
HTTP/1.1 202 Accepted
<Common response header>
{
  "list": [
    {
      "code": "200",
      "instanceId": "i-xxxx",
      "message": "successful"
    },
    {
      "code": "200",
      "instanceId": "i-yyyy",
      "message": "successful"
    }
  ],
  "task_id": "T-5d6f733d9e408ec74f000002"
}
```


9. Upgrade

9.1. Query the upgrade status of a cluster

You can call `GetUpgradeStatus` to query the upgrade status of a cluster.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see [Common parameters](#).

Request syntax

```
GET /api/v2/clusters/[ClusterId]/upgrade/status HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
ClusterId	String	Yes	c106f377e16f34e b1808d6b9362c9 ****	The ID of the cluster.

Response parameters

Parameter	Type	Example	Description
error_message	String	""	The error message that is returned during the upgrade.
precheck_report_id	String	""	The ID of the precheck report.
status	String	""	The upgrade status of the cluster.
upgrade_step	String	not_start	The current phase of the upgrade.

Examples

Sample requests

```
GET /api/v2/clusters/[ClusterId]/upgrade/status HTTP/1.1
```

Common request header

```
{
  "ClusterId": "c106f377e16f34eb1808d6b9362c9****"
}
```

Sample success responses

XML format

```
<error_message>""</error_message>
<precheck_report_id>""</precheck_report_id>
<status>""</status>
<upgrade_step>not_start</upgrade_step>
```

JSON format

```
{"error_message":"","precheck_report_id":"","status":"","upgrade_step":"not_start"}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

9.2. Upgrade a cluster

You can call UpgradeCluster to upgrade a cluster.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameter types

This operation uses common request parameters only. For more information, see [Common parameters](#).

Request syntax

```
POST /api/v2/clusters/[ClusterId]/upgrade HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
ClusterId	String	Yes	c82e6987e2961451182edacd74faf****	The ID of the cluster.
version	String	No	1.14.8-aliyun.1	The target version of the upgrade.

Examples

Sample requests

```
POST /api/v2/clusters/[ClusterId]/upgrade HTTP/1.1
```

Common request parameters

```
{
  "ClusterId": "c82e6987e2961451182edacd74faf****"
}
```

Sample success responses

JSON format

```
{}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

9.3. Suspend the upgrade of a cluster

You can call `PauseClusterUpgrade` to suspend the upgrade of a cluster.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see [Common parameters](#).

Request syntax

```
POST /api/v2/clusters/[ClusterId]/upgrade/pause HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
ClusterId	String	Yes	c82e6987e2961451182edacd74faf****	The ID of the cluster.

Examples

Sample requests

```
POST /api/v2/clusters/[ClusterId]/upgrade/pause HTTP/1.1
```

Common request header

```
{
  "ClusterId": "c82e6987e2961451182edacd74faf****"
}
```

Sample success responses

JSON format

```
{}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

9.4. Cancel the upgrade of a cluster

You can call `CancelClusterUpgrade` to cancel the upgrade of a cluster.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see [Common parameters](#).

Request syntax

```
POST /api/v2/clusters/[ClusterId]/upgrade/cancel HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
ClusterId	String	Yes	c106f377e16f34eb1808d6b9362c9****	The ID of the cluster.

Response parameters

Parameter	Type	Example	Description
RequestId	String	4aecca2-ae8e-41b1-b5c6-56c937f80a68	The ID of the request.

Examples

Sample requests

```
POST /api/v2/clusters/[ClusterId]/upgrade/cancel HTTP/1.1
```

Common request header

```
{
  "ClusterId": "c106f377e16f34eb1808d6b9362c9****"
}
```

Sample success responses

XML format

```
<RequestId>4aecca2-ae8e-41b1-b5c6-56c937f80a68</RequestId>
```

JSON format

```
{"RequestId": "4aecca2-ae8e-41b1-b5c6-56c937f80a68"}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

9.5. Resume the upgrade of a cluster

You can call `ResumeUpgradeCluster` to resume the upgrade of a cluster.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see [Common parameters](#).

Request syntax

```
POST /api/v2/clusters/[ClusterId]/upgrade/resume HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
ClusterId	String	Yes	c82e6987e2961451182edacd74faf****	The ID of the cluster.

Examples

Sample requests

```
POST /api/v2/clusters/[ClusterId]/upgrade/resume HTTP/1.1
Common request header
{
  "ClusterId": "c82e6987e2961451182edacd74faf****"
}
```

Sample success responses

JSON format

```
{}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

10.Applications

10.1. Create an application deployment template

You can call `CreateTemplate` to create an application deployment template.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see [Common parameters](#).

Request syntax

```
POST|PUT /templates HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
name	String	Yes	nginx	The name of the template.

Parameter	Type	Required	Example	Description
template	String	Yes	<pre> apiVersion: apps/v1\kind: Deployment\name: nginx- deployment- basic\n labels:\n app: nginx\nspec:\n replicas: 2\n selector:\n matchLabels:\n app: nginx\n template:\n metadata:\n labels:\n app: nginx\n spec:\n containers:\n - name: nginx\n image: busybox:latest\n ports:\n - containerPort: 80 </pre>	The content of the template.
tags	String	No	common	The type of the tags. Valid values: private and common.
template_type	String	No	kubernetes	The type of the template.

Response parameters

Parameter	Type	Example	Description
template_id	String	20663627-81ee-4cfe-9b69-c96fcb84a674	The ID of the template.

Examples

Sample requests


```
POST /templates HTTP/1.1
```

Common request header

```
{
  "name": "nginx",
  "template": "apiVersion: apps/v1\nkind: Deployment\nmetadata:\n  name: nginx-deployment-basic\n  labels:\n    app: nginx\nspec:\n  replicas: 2\n  selector:\n    matchLabels:\n      app: nginx\n  template:\n    metadata:\n      labels:\n        app: nginx\n    spec:\n      containers:\n        - name: nginx\n          image: busybox:latest\n          ports:\n            - containerPort: 80"
}
```

Sample success responses

XML format

```
<template_id>20663627-81ee-4cfe-9b69-c96fcb84a674</template_id>
```

JSON format

```
{"template_id":"20663627-81ee-4cfe-9b69-c96fcb84a674"}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

10.2. Query application deployment templates

You can call DescribeTemplates to query application deployment templates.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see Common parameters.

Request syntax

```
GET /templates HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
template_type	String	No	kubernetes	The type of the template. Valid values: kubernetes and compose. Default value: kubernetes.

Response parameters

Parameter	Type	Example	Description
acl	String	private	Indicates whether the template is private, public, or shared by specified users. Valid values: <ul style="list-style-type: none"> private public shared Default value: private.
description	String	a template of nginx	The description of the template.
name	String	nginx-app	The name of the template.
tags	String	kubernetes	The tags of the template. The default value is the name of the template.

Parameter	Type	Example	Description
template	String	<pre>"apiVersion: apps/v1 # for versions before 1.8.0 use apps/v1beta1\nkin d: Deployment\nmeta data:\n name: nginx-deployment- basic\n labels:\n app: nginx\nspec:\n replicas: 2\n selector:\n matchLabels:\n app: nginx\n template:\n metadata:\n labels:\n app: nginx\n spec:\n # nodeSelector:\n # env: test-team\n containers:\n - name: nginx\n image: nginx:1.7.9 # replace it with your exactly <image_name:tags >\n ports:\n - containerPort: 80"</pre>	The content of the template.
template_type	String	kubernetes	<p>The type of the template. Valid values:</p> <ul style="list-style-type: none"> kubernetes: the standard template provided by Kubernetes. compose: the standard template provided by Docker Compose.

Examples

Sample requests

```
GET /templates HTTP/1.1
Common request header
```

Sample success responses

XML format

```
<template>"apiVersion: apps/v1 # for versions before 1.8.0 use apps/v1beta1\nkind: Deployment\nmetadata:\n  name: nginx-deployment-basic\n  labels:\n    app: nginx\nspec:\n  replicas: 2\n  selector:\n    matchLabels:\n      app: nginx\n  template:\n    metadata:\n      labels:\n        app: nginx\n    spec:\n      # nodeSelector\n      # env: test-team\n    containers:\n      - name: nginx\n        image: nginx:1.7.9 # replace it with your exactly  
&lt;image_name:tags>\n        ports:\n          - containerPort: 80"</template>\n\n<name>nginx-app</name>\n\n<description>a template of nginx</description>\n\n<template_type>kubernetes</template_type>\n\n<acl>private</acl>\n\n<tags>kubernetes</tags>
```

JSON format

```
{"template": "\"apiVersion: apps/v1 # for versions before 1.8.0 use apps/v1beta1\nkind: Deployment\n\nmetadata:\n  name: nginx-deployment-basic\n  labels:\n    app: nginx\nspec:\n  replicas: 2\n  selector:\n    matchLabels:\n      app: nginx\n  template:\n    metadata:\n      labels:\n        app: nginx\n    spec:\n      # nodeSelector:\n      # env: test-team\n    containers:\n      - name: nginx\n        image: nginx:1.7.9 # replac  
e it with your exactly <image_name:tags>\n        ports:\n          - containerPort: 80\n\n\n","name": "nginx-app", "des  
cription": "a template of nginx", "template_type": "kubernetes", "acl": "private", "tags": "kubernetes"}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

10.3. Update an application deployment template

You can call UpdateTemplate to update an application deployment template.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see Common parameters.

Request syntax

```
PUT /templates/[TemplateId] HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
TemplateId	String	Yes	nginx-app	The ID of the template.

Examples

Sample requests

```
PUT /templates/[TemplateId] HTTP/1.1
```

Common request header

```
{
  "TemplateId": "nginx-app"
}
```

Sample success responses

JSON format

```
{}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

10.4. Delete an application deployment template

You can call DeleteTemplate to delete an application deployment template.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see Common parameters.

Request syntax

```
DELETE /templates/[TemplateId] HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
TemplateId	String	Yes	20663627-81ee-4cfe-9b69-c96fcb84a674	The ID of the template.

Examples

Sample requests

```
DELETE /templates/[TemplateId] HTTP/1.1
Common request header
{
  "TemplateId": "20663627-81ee-4cfe-9b69-c96fcb84a674"
}
```

Sample success responses

JSON format

```
{}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

11.Add-ons

11.1. Install an add-on for a cluster

You can call `InstallClusterAddons` to install an add-on for a cluster.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see [Common parameters](#).

Request syntax

```
POST /clusters/[ClusterId]/components/install HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
ClusterId	String	Yes	c82e6987e2961451182edacd74faf****	The ID of the cluster.
name	String	No	ags-metrics-collector	The name of the add-on.
version	String	No	v1.0.0.2-cc3b2d6-aliyun	The version of the add-on.
disabled	Boolean	No	true	Specifies whether to disable automatic installation of the add-on.
required	String	No	"false"	Specifies whether to enable automatic installation of the add-on.
config	String	No	""	The configurations of the add-on.

Examples

Sample requests

```
POST /clusters/[ClusterId]/components/install HTTP/1.1
```

Common request header

```
{
  "ClusterId": "c82e6987e2961451182edacd74faf****"
}
```

Sample success responses

JSON format

```
{}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

11.2. Query supported add-ons

You can call DescribeAddons to query details about the add-ons that are supported by a specified cluster type.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see Common parameters.

Request syntax

```
GET /clusters/components/metadata HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
region	String	No	cn-beijing	The ID of the region to query.
cluster_type	String	No	kubernetes	The type of the cluster. Default value: kubernetes.

Response parameters

Parameter	Type	Example	Description
ComponentGroups	Array		A list of add-on groups.
default	List	["flexvolume", "alicloud-disk-controller"]	The default add-ons in the group.
group_name	String	storage	The name of the add-on group.
items	Array		The details about the add-ons in the group.
config	String	""	The add-on configurations.
disabled	Boolean	false	Indicates whether the add-on is disabled.
name	String	csi-plugin	The name of the add-on.
required	String	""	Indicates whether the add-on is required.
version	String	""	The version of the add-on.
StandardComponents	Struct		A list of standard add-ons.
addon_name	Struct		The name of the standard add-on.
config	String	""	The configurations of the add-on.
disabled	Boolean	false	Indicates whether the add-on is disabled.
name	String	sandboxed-container-controller	The name of the add-on.
required	String	"false"	Indicates whether the add-on is required.
version	String	v1.14.8.44-c23b62c5-aliyun	The version of the add-on.

Examples

Sample requests

```
GET /clusters/components/metadata HTTP/1.1
```

Common request header

Sample success responses

XML format

```
<ComponentGroups>
  <group_name>storage</group_name>
  <default>flexvolume</default>
  <default>alicloud-disk-controller</default>
  <items>
    <name>flexvolume</name>
    <disabled>>false</disabled>
    <version>1.1</version>
    <description>flexvolume</description>
  </items>
</ComponentGroups>
<StandardComponents>
  <sandboxed-container-controller>
    <description>alicloud-disk-controller</description>
    <name>alicloud-disk-controller</name>
    <required>>false</required>
    <disabled>>false</disabled>
    <version>v1.14.8.44-c23b62c5-aliyun</version>
  </sandboxed-container-controller>
</StandardComponents>
```

JSON format

```
{
  "ComponentGroups": [
    {
      "group_name": "storage",
      "default": ["flexvolume", "alicloud-disk-controller"],
      "items": [{"name": "flexvolume", "disabled": false, "version": "1.1", "description": "flexvolume"}]
    }
  ],
  "StandardComponents": {
    "sandboxed-container-controller": {
      "description": "alicloud-disk-controller",
      "name": "alicloud-disk-controller",
      "required": "false",
      "disabled": false,
      "version": "v1.14.8.44-c23b62c5-aliyun"
    }
  }
}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

11.3. Query the version of a cluster add-on

You can call `DescribeClusterAddonsVersion` to query the details of all add-ons that are installed for a cluster.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see [Common parameters](#).

Request syntax

```
GET /clusters/[ClusterId]/components/version HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
ClusterId	String	Yes	c82e6987e2961451182edacd74faf****	The ID of the cluster.

Response parameters

Parameter	Type	Example	Description
can_upgrade	Boolean	false	Indicates whether the add-on can be upgraded.
changed	String	""	Indicates whether the add-on is updated by the user.
component_name	String	alicloud-disk-controller	The name of the add-on.
message	String	ok to upgrade	The additional message that indicates whether the add-on can be upgraded.
next_version	String	""	The target version to which the add-on can be upgraded.
required	Boolean	true	Indicates whether the add-on is required.
template	String	****	The latest template.
version	String	v1.14.8.37-bd3fd891-aliyun	The current version of the add-on.

Examples

Sample requests

```
GET /clusters/{ClusterId}/components/version HTTP/1.1
```

Common request header

```
{
  "ClusterId": "c82e6987e2961451182edacd74faf****"
}
```

Sample success responses

XML format

```
<template>****</template>
<component_name>alicloud-disk-controller</component_name>
<can_upgrade>>false</can_upgrade>
<message>ok to upgrade</message>
<version>v1.14.8.37-bd3fd891-aliyun</version>
<required>>true</required>
<next_version>""</next_version>
<changed>""</changed>
```

JSON format

```
{"template":"****","component_name":"alicloud-disk-controller","can_upgrade":"false","message":"ok to upgrade","version":"v1.14.8.37-bd3fd891-aliyun","required":"true","next_version":"","changed":""}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

11.4. Query the upgrade status of a cluster add-on

You can call DescribeClusterAddonUpgradeStatus to query the upgrade status of a cluster add-on.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request parameter types

This operation uses common request parameters only. For more information, see Common parameters.

Request syntax

```
GET /clusters/[ClusterId]/components/[ComponentId]/upgradestatus HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
-----------	------	----------	---------	-------------

Parameter	Type	Required	Example	Description
ClusterId	String	Yes	c106f377e16f34eb1808d6b9362c9****	The ID of the cluster.
ComponentId	String	Yes	csi-plugin	The ID of the add-on. For example, nginx-ingress-controller, flexvolume, and metrics-server.

Response parameters

Parameter	Type	Example	Description
addon_info	Struct		The details of the add-on.
category	String	""	The type of the add-on.
component_name	String	alicloud-disk-controller	The name of the add-on.
message	String	ok to upgrade	The additional message that indicates whether the add-on can be upgraded.
version	String	v1.14.8.37-bd3fd891-aliyun	The current version of the add-on.
yaml	String	****	The metadata of the add-on.
can_upgrade	Boolean	true	Indicates whether the add-on can be upgraded.
template	String	****	The latest template of the add-on.

Examples

Sample requests

```
GET /clusters/[ClusterId]/components/[ComponentId]/upgradestatus HTTP/1.1
```

Common request parameters

```
{
  "ClusterId": "c106f377e16f34eb1808d6b9362c9****",
  "ComponentId": "csi-plugin"
}
```

Sample success responses

XML format

```
<template>****</template>
<addon_info>
  <component_name>alicloud-disk-controller</component_name>
  <message>ok to upgrade</message>
  <category>""</category>
  <version>v1.14.8.37-bd3fd891-aliyun</version>
  <yaml>****</yaml>
</addon_info>
<can_upgrade>true</can_upgrade>
```

JSON format

```
{"template": "****", "addon_info": {"component_name": "alicloud-disk-controller", "message": "ok to upgrade", "category": "\\\"", "version": "v1.14.8.37-bd3fd891-aliyun", "yaml": "****"}, "can_upgrade": "true"}
```

Error codes

For a list of error codes, visit the [API Error Center](#).

11.5. Uninstall an add-on from a cluster

You can call `UninstallClusterAddons` to uninstall an add-on from a cluster.

Debugging

OpenAPI Explorer automatically calculates the signature value. For your convenience, we recommend that you call this operation in OpenAPI Explorer. OpenAPI Explorer dynamically generates the sample code of the operation for different SDKs.

Request headers

This operation uses the common request header only. For more information, see [Common parameters](#).

Request syntax

```
POST /clusters/[ClusterId]/components/uninstall HTTPS|HTTP
```

Request parameters

Parameter	Type	Required	Example	Description
ClusterId	String	Yes	c82e6987e2961451182edacd74faf7**	The ID of the cluster.
name	String	Yes	test-k8s	The name of the cluster.

Response parameters

Parameter	Type	Example	Description
RequestId	String	2ffb6f7c-237f-491c-90fc-bb6599f23d7f	The ID of the request.

Examples

Sample requests

```
POST /clusters/[ClusterId]/components/uninstall HTTP/1.1
```

Common request header

```
{
  "ClusterId": "c82e6987e2961451182edacd74faf****",
  "name": "test-k8s"
}
```

Sample success responses

XML format

```
<RequestId>2ffb6f7c-237f-491c-90fc-bb6599f23d7f</RequestId>
```

JSON format

```
{"RequestId": "2ffb6f7c-237f-491c-90fc-bb6599f23d7f"}
```

Error codes

For a list of error codes, visit the [API Error Center](#).