

Alibaba Cloud CLI

Use Alibaba Cloud CLI

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Document conventions

Style	Description	Example
	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.
	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.
	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.
	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 Instance_ID</code>
[] or [a b]	This format is used for an optional value, where only one item can be selected.	<code>ipconfig [-all -t]</code>

Style	Description	Example
{} or {a b}	This format is used for a required value, where only one item can be selected.	switch { <i>active</i> <i>stand</i> }

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1 Call RPC API and RESTful API

The Alibaba Cloud product APIs are divided into RPC API and RESTful API. Most products use RPC style. When you use Alibaba Cloud CLI to call the interface, APIs of different styles have different calling methods.

In Alibaba Cloud CLI, the command line structure is as follows:

```
aliyun <command> <subcommand> [options and parameters]
```

- **aliyuncli:** Alibaba Cloud tool name.
- **command:** Specify a top-level command.
 1. Typically, it represents the Alibaba Cloud basic services supported in the command line tool, such as `ecs` and `rds`.
 2. It also indicates the functional commands of the command line tool. such as `help`, `configure`.
- **subcommand:** Specify an additional subcommand to perform an action.
- **options and parameters:** Specify the options or API parameter options for controlling the behavior of Alibaba Cloud CLI. The option values can be Number, String, and json structure character string.

When calling the product interface, you must first determine the API style and select the standard command structure to initiate the call. You can determine the API style by the checking the following characteristics:

- The API parameter contains the `Action` field which is the RPC API, and the `PathPattern` parameter is the RESTful API.
- In general, the calling style of all APIs is uniform within each product.
- Each API only supports a specific style. Passing in the wrong identifier may call other APIs or cause an `ApiNotFound` error to occur.

Call an RPC API

The basic structure of calling an RPC API by using Alibaba Cloud CLI is as follows:

```
aliyun <product> <ApiName> [--parameter1 value1 --parameter2 value2 ...]
```

Example:

```
aliyun rds DescribeDBInstances --PageSize 50
```

```
aliyun ecs DescribeRegions
```

```
aliyun rds DescribeDBInstanceAttribute --DBInstanceId xxxxxx
```

Call a RESTful API

Some Alibaba Cloud products such as Container Service are RESTful API. The basic structure of calling a RESTful API by using Alibaba Cloud CLI is as follows:

```
aliyun productcode [GET|PUT|POST|DELETE] <PathPattern> --body "$(cat input.json)"
```

- **GET request**

Request structure:

```
aliyun productcode GET /resource
```

Example:

```
aliyun cs GET /clusters
```

- **POST request**

Request structure:

```
aliyun productcode POST /resource --body "$(cat input.json)"
```

Example:

```
aliyun cs POST /clusters/<cluster_id>/attach --header "Content-Type=application/json" --body "$(cat attach.json)"
```

- **DELETE request**

Request structure:

```
aliyun productcode DELETE /resource
```

Example:

```
aliyun cs DELETE /clusters/ce2cdc26227e09c864d0ca0b2d5*****
```

2 Use the help command

This topic describes how to use the `help` command to learn about the usage of Alibaba Cloud CLI.

- Obtain a list of options and products supported by Alibaba Cloud CLI:

```
aliyun help
```

- Obtain the API information of a product:

```
aliyun <product> help
```

For example, to obtain the API information of ECS:

```
aliyun ecs help
```

- Obtain the parameters required by a product API:

```
aliyun <product> <apiName> help
```

For example, obtain information about `DescribeInstances` of ECS services, including the parameter name, parameter type, and whether the parameter is required.

```
aliyun ecs DescribeRegions help
```



Note:

If the information about an API is not included in the output, and you are sure that the API exists and are aware of its usage, you can call the API by force. For more information, see [Force Call APIs](#).

3 Filter results and tabulate output

This topic describe how to filter results by using Alibaba Cloud CLI. The filter function of Alibaba Cloud CLI obtains the information that you want in a tabular output. Specifically, this function allows you to quickly obtain the information you want from the JSON structure data that is returned from the query interface of Alibaba Cloud.

--output overview

To make a more intuitive command output result, Alibaba Cloud CLI provides --output option to extract the fields that you want from the results, and the default tabular output. The --output option contains the following fields:

field Name	Description	Additional instructions
cols	The column name of the table. It must correspond to fields in json data.	For example, the ECS DescribeInstances interface returns the fields InstanceId and Status.
rows	Specifies the <i>JMESPath</i> path where the filter field is located.	The <i>jmespath</i> query statement specifies the data source of the table row in the json result.
num	Specifies num=true to enable the row number column, starting with the number 0.	The default is num=false.

Scenario

Often it can be difficult to find the information you want in the JSON structured data that is returned by the query interface of Alibaba Cloud. As an example, consider the following scenario. Assume that you run the following command to query information about all ECS instances.

```
aliyun ecs DescribeInstances
```

The system returns an output similar to the following script:

```
{
  "PageNumber": 1,
  "TotalCount": 2,
  "Pagesize": 10,
  "RequestId": "2B76ECBD-A296-407E-BE17-7E668A609DDA",
```

```

"Instances": {
  "Instance": [
    {
      "ImageId": "ubuntu_16_0402_64_20G_alibase_20171227.vhd",
      "InstanceTypeFamily": "ecs.xn4",
      "VlanId": "",
      "InstanceId": "i-12345678912345678123",
      "Status": "Stopped",
      //omit some fields
    },
    Instance": [
    {
      "ImageId": "ubuntu1404_64_20G_aliaegis_20150325.vhd",
      "InstanceTypeFamilyId": "ecs.s3",
      "VlanId": "",
      "InstanceId": "I-abcdefghijklmnoqrst ",
      "Status": "Running",
      //omit some fields
    },
  ],
}
}
}

```

From the preceding example, you can see that it can be difficult to extract information from the returned output.

Solution

- **Run the following command to filter the field `RequestId` returned in the preceding scenario.**



Note:

Because this field is the root element, you do not need to specify the `rows` field.

```
aliyun ecs DescribeInstances --output cols=RequestId
```

The system displays output similar to the following:

```

RequestId
-----
2B76ECBD-A296-407E-BE17-7E668A609DDA

```

- **Run the following command to filter the fields `InstanceId` and `Status` returned in the preceding scenario. The JMESPath path of the two fields is `Instances.Instance[]`. For details about how to write JMESPath, see [JMESPath Tutorial](#).**

```
aliyun ecs DescribeInstances --output cols=InstanceId,Status rows=Instances.Instance[]
```

The system displays output similar to the following:

```

InstanceId           | Status
-----

```

```
i-12345678912345678123 | Stopped
i-abcdefghijklmnopqrst | Running
```

If you want to output the row number, specify `num=true`. The output result is similar to the following:


```
Num | InstanceId | Status
--- | - | -
0 | i-12345678912345678123 | Stopped
1 | i-abcdefghijklmnopqrst | Running
```

4 Aggregation of paging interface results

By default, only the results on the first page are returned when calling the paging interface of each cloud product using Alibaba Cloud CLI. If you require all the results, you can use the Alibaba Cloud CLI to aggregate the results.

--pager overview

You can use --pager option to aggregate the results of the array class of the paging interface. This option contains the following four fields:

Field Name	Description
PageNumber	Corresponds to the field that describes the current page number in the returned results of the API. Default value: PageNumber.
PageSize	Corresponds to the field that describes the maximum number of results returned per page in the API return results. Default value: PageSize.
TotalCount	Corresponds to the field that describes the total number of rows in the returned results of the API. Default value: TotalCount.
path	Because of the diversity of returned results by the API, you can manually specify the JMESPath path of the array type to be aggregated. <div style="border: 1px solid #ccc; background-color: #f9f9f9; padding: 5px;">  Note: By default, the --pager option automatically recognizes the array type data in the result. </div>

Scenario

The DescribeInstances interface of ECS products is a paging interface. Run the following command. By default, this interface only returns the first page of the instance information list.

```
aliyun ecs DescribeInstances
```

The system displays output similar to the following (partially truncated):

```
{undefined "PageNumber": 1,
  "TotalCount": 4,
  "PageSize": 10,
```



```

    "RequestId": "6EA82E70-9750-4A97-A738-E021D8A57F07",
    "Instances": {
      "Instance": [
        {
          "ImageId": "win2012r2_64_dtc_9600_zh-cn_40G_alibase_20190318.vhd",
          "SerialNumber": "f06857e8-7f3c-443a-9f88-8e84eb5163c7",
          "Cpu": 1,
          "Memory": 2048,
          "DeviceAvailable": true,
          "SecurityGroupIds": {
            "SecurityGroupId": [
              "sg-bp1fgviwo182z8ap348n"
            ]
          }
        }
      ]
    }
  }
}

```

Solution

Run the following command to get the instance information on all pages of the list:

```
aliyun ecs DescribeInstances --pager
```



Note:

Because the values returned by this interface comply with the default values of the sub-fields, all the sub-fields are omitted in the preceding command. The complete command format is as follows:

```
aliyun ecs DescribeInstances --pager PagerNumber=PagerNumber PageSize=PageSize TotalCount=TotalCount path=Instances.Instance
```

The following aggregation result (partially truncated) is displayed:

```

{
  "Instances": {
    "Instance": [
      {
        "ImageId": "win2012r2_64_dtc_9600_zh-cn_40G_alibase_20190318.vhd",
        "SerialNumber": "f06857e8-7f3c-443a-9f88-8e84eb5163c7",
        "Cpu": 1,
        "Memory": 2048,
        "DeviceAvailable": true,
        "SecurityGroupIds": {
          "SecurityGroupId": [
            "sg-bp1fgviwo182z8ap348n"
          ]
        }
      }
    ]
  }
}

```

```
}  
}
```

**Note:**

The aggregated output only contains aggregated fields. If you use the filtering function to get the fields you need to know, the path of the filtering field is the *JMESPath* path after the aggregation. For more information, see [Filter results and tabulate output](#).

5 Force Call APIs

This topic describes the force function of Alibaba Cloud CLI.

--force overview

The metadata of APIs and parameters for several of the products and services of Alibaba Cloud are integrated into Alibaba Cloud CLI. When you call an API, Alibaba Cloud CLI automatically checks the validity of that API and related parameters. However, the metadata related to products and APIs may be incomplete or limited. If you use an API or a parameter that is not found in the metadata integrated in Alibaba Cloud CLI, an error message of `unknown api` or `unknown parameter` is returned. In such situation, you can use the `--force` to skip API and parameter checking process, and force APIs or parameters outside the metadata list to be called. Before you force call an API, we recommend that you confirm the accuracy of the following information:

- Alibaba Cloud Product code
- API name and parameters
- API version
- Endpoint information

When using the `--force`, you must specify the `--version` to specify the API version. For example, the ECS version is 2014-05-26. You can also specify `--endpoint` to specify the product access address. If it is not specified, it is obtained from the built-in data of Alibaba Cloud CLI.

Sample

- Scenario:

With the CMS product, there is an API is used to describe MetricList. In the Alibaba Cloud CLI version 3.0.16, the API version of the CMS is 2019-01-01, and the interface name is `DescribeMetricList`. However, In the Alibaba Cloud CLI version 2017-03-01, the interface name is `QueryMetricList`.

- **Solution:**

Run the following command, force to call the 2017-03-01 version of the QueryMetricList interface.

```
aliyun cms QueryMetricList [api parameters] --force --version 2017-03-01
```

6 Results polling

With the APIs of Alibaba Cloud, the results returned by some APIs will change over time. You can poll the results until a value with a specific status is found, at which time polling is stopped and data is returned.

--waiter overview

You can use `--waiter` to poll results. This option contains the following two sub-field:

Field Name	Description
expr	Indicates the polled field in the JSON result specified by the <i>jmespath</i> query statement.
to	Indicates the target value of the polled field.

Sample

- **Scenario**

After running the command to create an ECS instance, call `DescribeInstances` API action to query the details of one or more instances. Given that an instance takes some time to be created, the API will continuously query if the instance is in the running status until the instance is in `Running` status, at which time the `DescribeInstances` API action returns the result.

- **Solution**

For Alibaba Cloud CLI poll the instance status, run the following command:

```
aliyun ecs DescribeInstances --InstanceIds '["i-12345678912345678123"]' --waiter expr='Instances.Instance[0].Status' to=Running
```

7 Simulate a call

This topic describes how to use the simulation call function of Alibaba Cloud CLI. You can use this function to simulate a call when you need to check if a request to the server is valid but you do not want to perform any action that will affect your resources on the cloud.

You can simulate call by printing and checking a request by using `--dryrun`.

For example, to check the format of a request generated when the DescribeInstances API of ECS is called, run the following command:

```
aliyun ecs DescribeInstances --dryrun
```

The system displays an output similar to the following output:

```
Skip invoke in dry-run mode, request is:
-----
POST /? AccessKeyId=AccessKeyId&Action=DescribeInstances&Format=
JSON&RegionId=cn-hangzhou&Signature=MoLDYgpNzikuFXe%2BY16LXcicPks
%3D&SignatureMethod=HMAC-SHA1&SignatureNonce=e473d1c890604d7a9174
09459fc74ce8&SignatureType=&SignatureVersion=1.0&Timestamp=2019-05-
29T09%3A05%3A17Z&Version=2014-05-26 HTTP/1.1
Host: ecs-cn-hangzhou.aliyuncs.com
Accept-Encoding: identity
Content-Type: application/x-www-form-urlencoded
x-sdk-client: golang/1.0.0
x-sdk-core-version: 0.0.1
x-sdk-invoke-type: common
```

8 Parameter format overview

This topic describes the format requirements of different data types in API documentation for the commands entered into the Alibaba Cloud CLI.

For the fields of different data types in API documentation, commands in Alibaba Cloud CLI must follow the following format requirements:

- **Parameter case:** Because API parameters are case sensitive, the parameters entered in Alibaba Cloud CLI must also be case sensitive.
- **Parameter value case:** Some parameter values are not case sensitive. However, we recommend that you make all parameter values case sensitive so to maintain a uniform style.
- **Entering String-type parameter values:** For parameters marked as String in API documentation, the parameter can be entered directly if it does not contain any special characters. Otherwise, you need to place these strings in single or double

quotes when you enter them. In Linux, macOS, or Unix PowerShell, use single quotes (' '), and in Windows Shell, use double quotes (" ").

For example:

- Without special characters:

```
aliyun ecs DescribeImages --ImageName WindowsTest
```

- With special characters:

- Windows:

```
aliyun ecs DescribeImages --ImageName "CustomImage_1-10.11.161.1"
```

- Linux and MacOS:

```
aliyun ecs DescribeImages --ImageName 'Blue_screen windows-DB-business-10.173.161.26'
```

- **Entering Integer-type parameter values: Parameters marked as Integer in API documentation can be entered directly.**

For example:

```
aliyun ecs DescribeImages --ImageName WindowsTest --Pagesize 10
```

- **Entering String-type string list values: For parameters marked as String in API documentation, if a list of multiple values is supported (such as ImageId list), separate each value by using a comma(.). Next, for each value, enclose the value with single quotes(' ') or double quotes(" ").**

For example:

- Windows:

```
aliyun ecs DescribeImages --ImageId "m-23e0oxmbv,m-23waejuy9"
```

- Linux and MacOS:

```
aliyun ecs DescribeImages --ImageId 'm-23e0oxmbv,m-23waejuy9'
```

- **Entering String-type JSON array parameter values: For parameters marked as String in API documentation, if the parameter value must be formatted as a Json Array, enclose each value in single quotes (' '), then square brackets ([]), and last**

double quotes (" "). Separate each value by using a comma (.). Single and double quotes in the above usage can also be interchanged.

For example:

- **Windows:**

```
aliyun ecs DescribeDisks --DiskIds    '['d-23rsg24f','d-23vsih26x', 'd-23sfqfbfa']"
```

- **Linux and MacOS:**

```
aliyun ecs DescribeDisks --DiskIds    '['d-23rsg24f","d-23vsih26x", "d-23sfqfbfa"]'
```

- **Entering String-type JSON array list parameter values:** For parameters marked as String in API documentation, if the parameter value must be a Json Array List, enclose each value in single quotes (' '), then square brackets ([]), and last double quotes (" "). Separate each value by using a comma (.). Separate keys and values in JSON Array by using colons (:). Single and double quotes in the above usage can also be interchanged.

For example:

- **Windows:**

```
aliyun slb AddBackendServers --LoadBalancerId 15157b19f18-cn-hangzhou-dg-a01 --BackendServers    "[{'ServerId':'i-23g8aact0'},{'ServerId':'i-23bb03yh9'}]"
```

- **Linux and MacOS:**

```
aliyun slb AddBackendServers --LoadBalancerId 15157b19f18-cn-hangzhou-dg-a01 --BackendServers    '['{"ServerId":"i-23g8aact0"}, {"ServerId":"i-23bb03yh9"}]'
```

- **Entering String-type date format parameter value:** For parameters marked as String in API documentation, if parameter value must be a UTC time expressed according to ISO 8601, enter the time in the following format: YYYY-MM-DDThh:mm:ssZ.

For example:

```
aliyun ecs DescribeInstanceMonitorData --InstanceId i-94ola4btx --StartTime 2015-11-28T15:00:00Z --EndTime 2015-11-28T18:00:00Z
```