Alibaba Cloud CLI

Use Alibaba Cloud CLI

Issue: 20190709

Legal disclaimer

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

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

or trust in this document, even if Alibaba Cloud has been notified of the possibility of such a loss.

5. By law, all the content of the Alibaba Cloud website, including but not limited to works, products, images, archives, information, materials, website architecture, website graphic layout, and webpage design, are intellectual property of Alibaba Cloud and/or its affiliates. This intellectual property includes, but is not limited to, trademark rights, patent rights, copyrights, and trade secrets. No part of the Alibaba Cloud website, product programs, or content shall be used, modified , reproduced, publicly transmitted, changed, disseminated, distributed, or published without the prior written consent of Alibaba Cloud and/or its affiliates . The names owned by Alibaba Cloud shall not be used, published, or reproduced for marketing, advertising, promotion, or other purposes without the prior written consent of Alibaba Cloud. The names owned by Alibaba Cloud include, but are not limited to, "Alibaba Cloud", "Aliyun", "HiChina", and other brands of Alibaba Cloud and/or its affiliates, which appear separately or in combination, as well as the auxiliary signs and patterns of the preceding brands, or anything similar to the company names, trade names, trademarks, product or service names, domain names, patterns, logos, marks, signs, or special descriptions that third parties identify as Alibaba Cloud and/or its affiliates).
6. Please contact Alibaba Cloud directly if you discover any errors in this document.

Generic conventions

Table -1: Style conventions

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

Style	Description	Example
{} or {a|b}	It indicates that it is a required value, and only one item can be selected.	`swich {stand | slave}`

Contents

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 `PathPatter n` 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 `ApiNotFoun d` 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   DescribeDB  Instances  -- PageSize   50
```

```
aliyun   ecs   DescribeRe  gions
```

```
aliyun   rds   DescribeDB  InstanceAt  tribute  -- DBInstance  Id
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   productcod  e  [ GET | PUT | POST | DELETE ] < PathPatter
n > -- body  "$( cat   input . json )"
```

- GET request

  Request structure:

  ```
  aliyun   productcod  e   GET  / resource
  ```

  Example:

  ```
  aliyun   cs   GET  / clusters
  ```

- POST request

  Request structure:

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

  Example:

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

- DELETE request

Request structure:

```
aliyun productcod e DELETE / resource
```

Example:

```
aliyun cs DELETE / clusters / ce2cdc2622 7e09c864d0 ca0b2d5
*****
```

2 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 JMESPath path where the filter field is located.	The jmespath 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_20  G_alibase_  20171227 .
 vhd ",
        " InstanceTy  peFamily ": " ecs . xn4 ",
        " VlanId ": "",
        " InstanceId ": " i - 1234567891  2345678123 ",
        " Status ": " Stopped ",
        // omit   some   fields
      },
       Instance ": [
      {
        " ImageId ": " ubuntu1404  _64_20G_al  iaegis_201  50325 . vhd
 ",
        " InstanceTy  peFamilyId ":" ecs . s3 ",
        " VlanId ": "",
        " InstanceId ": " I - abcdefghij  klmnopqrst  ",
        " Status ": " Running ",
        // omit   some   fields
      },
    ]
  }
}
```

From the preceding example, you can see that it can be difficult to extract informatio n 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   DescribeIn  stances  -- output   cols = RequestId
  ```

  The system displays output similar to the following:

  ```
   RequestId
  ---------
   2B76ECBD - A296 - 407E - BE17 - 7E668A609D  DA
  ```

- 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 DescribeIn stances -- output cols = InstanceId ,
Status rows = Instances . Instance []
```

The system displays output similar to the following:

```
 InstanceId              |  Status
----------             | ------
 i - 1234567891  2345678123  |  Stopped
 i - abcdefghij  klmnopqrst  |  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 - 1234567891  2345678123  |  Stopped
 1    |  i - abcdefghij  klmnopqrst  |  Running
```

3 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. Note: By default, the `-- pager` option automatically recognizes the array type data in the result.

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 - E021D8A57F
 07 ",
        " Instances ": {
                " Instance ": [
                        {
                                " ImageId ": " win2012r2_  64_dtc_960
 0_zh - cn_40G_ali  base_20190  318 . vhd ",
                                " SerialNumb  er ": " f06857e8 - 7f3c
 - 443a - 9f88 - 8e84eb5163  c7 ",
                                " Cpu ":  1 ,
                                " Memory ":  2048 ,
                                " DeviceAvai  lable ":  true ,
                                " SecurityGr  oupIds ": {
                                        " SecurityGr  oupId ": [
                                                " sg - bp1fgviwol
 82z8ap348n "
                                        ]
                                }
                        }
                ]
        }
}
```

Solution

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

```
aliyun  ecs  DescribeIn  stances  -- 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  DescribeIn  stances  -- pager  PagerNumbe  r =
PagerNumbe  r  PageSize = PageSize  TotalCount = TotalCount  path
= Instances . Instance
```

The following aggregation result (partially truncated) is displayed:

```
{
        " Instances ": {
                " Instance ": [
                        {
                                " ImageId ": " win2012r2_  64_dtc_960
 0_zh - cn_40G_ali  base_20190  318 . vhd ",
                                " SerialNumb  er ": " f06857e8 - 7f3c
 - 443a - 9f88 - 8e84eb5163  c7 ",
                                " Cpu ":  1 ,
                                " Memory ":  2048 ,
                                " DeviceAvai  lable ":  true ,
                                " SecurityGr  oupIds ": {
                                        " SecurityGr  oupId ": [
                                                " sg - bp1fgviwol
 82z8ap348n "
                                        ]
                                }
```

```
                        }
                ]
        }
}
```

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.

4 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   QueryMetri  cList  [ api   parameters ] -- force  --
version   2017 - 03 - 01
```

5 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 jmespath 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 DescribeIn stances -- InstanceId s '[" i -
1234567891 2345678123 "]' -- waiter expr =' Instances . Instance
[ 0 ]. Status ' to = Running
```

6 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  DescribeIn  stances  -- dryrun
```

The system displays an output similar to the following output:

```
Skip  invoke  in  dry - run  mode ,  request  is :
-------------------------------------
POST  /?  AccessKeyI  d = AccessKeyI  d & Action = DescribeIn
stances & Format = JSON & RegionId = cn - hangzhou & Signature =
MoLDYgpNzi  kuFXe % 2BY16LXcic  Pks % 3D & SignatureM  ethod = HMAC
- SHA1 & SignatureN  once = e473d1c890  604d7a9174  09459fc74c  e8 &
SignatureT  ype =& SignatureV  ersion = 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 :  applicatio  n / x - www - form - urlencoded
x - sdk - client :  golang / 1 . 0 . 0
x - sdk - core - version :  0 . 0 . 1
x - sdk - invoke - type :  common
```

7 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   DescribeIm  ages  -- ImageName   WindowsTes  t
```

- With special characters:

  ■ Windows:

```
aliyun   ecs   DescribeIm  ages  -- ImageName  " CustomImag
e_1 - 10 . 11 . 161 . 1 "
```

  ■ Linux and MacOS:

```
aliyun   ecs   DescribeIm  ages  -- ImageName  ' Blue_scree  n
  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   DescribeIm  ages  -- ImageName   WindowsTes  t  --
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   DescribeIm  ages  -- ImageId    " m - 23e0oxmbv ,
m - 23waejuy9 "
```

- Linux and MacOS:

```
aliyun   ecs   DescribeIm  ages  -- 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   DescribeDi  sks  -- DiskIds    "[' d - 23rssg24f
',' d - 23vsih26x ',' d - 23sfqfbfa ']"
```

- Linux and MacOS:

```
aliyun   ecs   DescribeDi  sks  -- DiskIds    '[" d - 23rssg24f
"," 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   AddBackend  Servers  -- LoadBalanc  erId
15157b19f1  8 - cn - hangzhou - dg - a01  -- BackendSer  vers
"[{' ServerId ':' i - 23g8aact0 '},{' ServerId ':' i - 23bb03yh9
'}]"
```

- Linux and MacOS:

```
aliyun   slb   AddBackend  Servers  -- LoadBalanc  erId
15157b19f1  8 - cn - hangzhou - dg - a01  -- BackendSer  vers
'[{" 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   DescribeIn  stanceMoni  torData  -- InstanceId
i - 94ola4btx  -- StartTime   2015 - 11 - 28T15 : 00 : 00Z    --
EndTime     2015 - 11 - 28T18 : 00 : 00Z
```