

(Ansible Integration)

Functional Spec – ASPEN II

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Harshal Wadaskar

Email: Harshal.wadaskar@click2cloud.net

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Version History

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Reviewers

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| Name | Version Approved | Role | Date |
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# Introduction

## Objectives

The objective of this document is to describe technical and functional specification on ASPEN-II deliverable modules and interface. The ASPEN-II will coverers the implementation of modules for Elastic Compute Service (ECS), Server Load Balancer (SLB), Virtual Private Cloud (VPC), Object Storage Service (OSS) and Relational Database Service (RDS).

## Scope

Ansible is an easy configuration management system that can be used to automate and organize system configuration tasks for a large network of computers. So the scope of this project is to automate the instance related task through ansible playbooks. The table below defines the list of task that are covered in this project.

|  |  |
| --- | --- |
| **#** | **Interfaces** |
| **Elastic Compute Service** | |
| **Security Group Related Interfaces** | |
| 1 | Creating a Security Group |
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| 39 | Releasing an RDS instance |
| 40 | Restarting an RDS instance |
| 41 | Changing the RDS instance type |
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| 43 | Switching between the primary and standby databases of an RDS instance |
| 44 | Creating an RDS read-only instance |
| **Database management** | |
| 45 | Creating a database |
| 46 | Deleting a database |
| **Account management** | |
| 47 | Creating an account |
| 48 | Deleting an account |
| 49 | Granting account permissions |
| 50 | Revoking account permissions |
| 51 | Resetting the instance password |
| 52 | Resetting an account |

## Out of Scope

1. Other than interfaces mentioned in [Scope](#_Scope) section, all new items will be treated as out of scope.
2. In ASPEN-II, modules are targeted for Linux systems only. The efforts are not considered for Windows or Mac Operating System.
3. All modules will be tested using Ansible command line utility. Scope does not covers testing modules on Ansible Tower.
4. ASPEN-II, targets running modules for English language only. Other languages such as Chinese is not considered.
5. Scope do not cover development of external inventory script for ansible. Only static inventory is supported.

## Assumptions and Constraints

### Assumptions

1. The technical platform such as Aliyun AK, ansible server and Python SDK is available.
2. Change in any functional requirement documented below shall be treated as CR (Change Request).
3. This document to be freeze and sign-off before implementation start.
4. Addition of new parameter specified in [Interface Definition](#_Interfaces_Definition) for each Interfaces will be treated as CR after FSD sign-off.
5. The merge request shall be shared on GitHub for dropping code by Click2Cloud Team. The review and merging source code should be done by Aliyun Team.
6. All interfaces which need to integrate, are finalized by Aliyun Team under SOW.
7. In ASPEN-2, modules are targeted for Linux systems only.
8. All modules will be tested using Ansible command line utility. Scope does not covers testing modules on Ansible Tower.
9. ASPEN-2, targets running modules for English language only. Other languages such as Chinese is not considered.
10. Any update within REST API or Aliyun SDK for Python should be informed to Click2Cloud Team. Click2Cloud will do required analysis and will identify the impact. If the impact is significant, then it will be communicated to stakeholders for further decision.
11. All the supporting document will be provided in English language only.

### Constraints

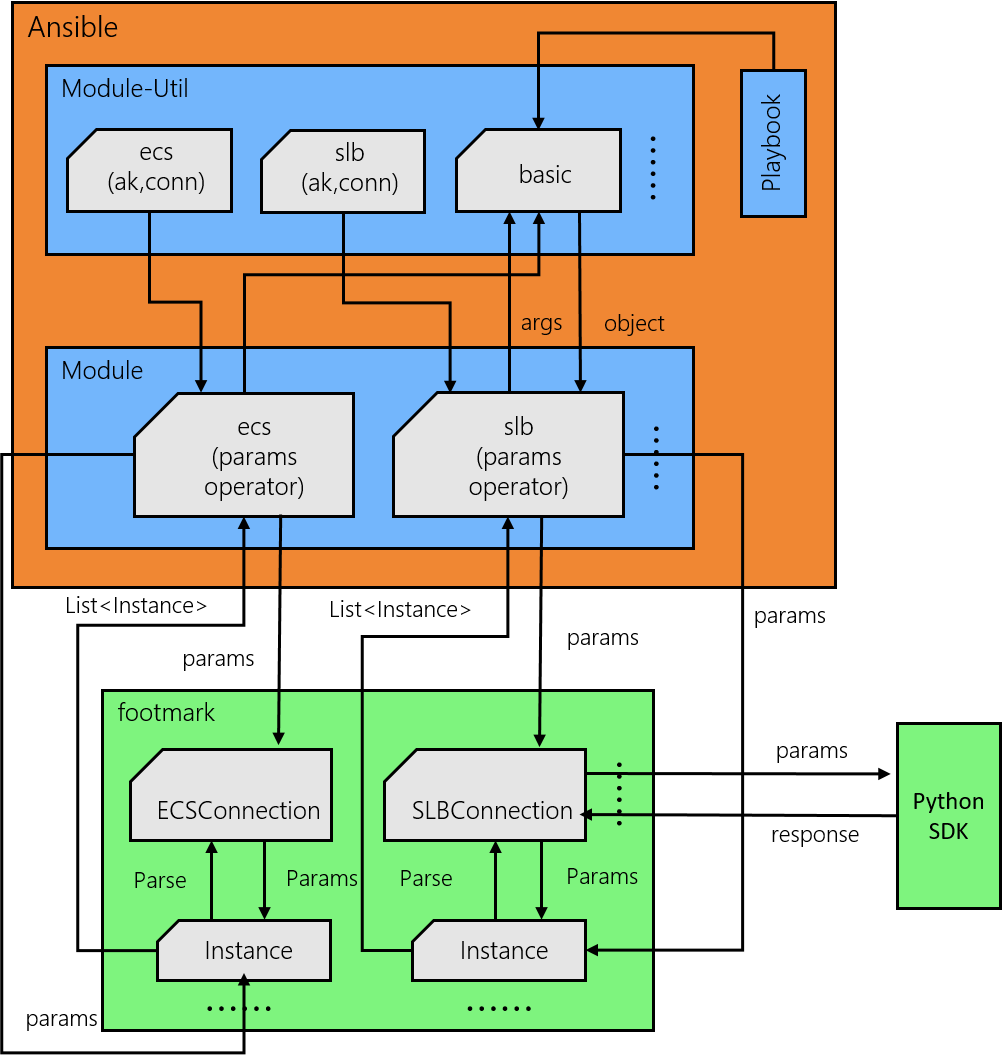
1. As currently Aliyun Web API is not working with Click2Cloud AK, team is going to use Aliyun Team AK for development and testing.

## References

* <https://intl.aliyun.com/help/en/doc-detail/30003.htm>
* <https://intl.aliyun.com/help/doc-detail/25484.htm>
* <https://intl.aliyun.com/help/doc-detail/27565.htm?spm=a3c0i.l27537en.b99.53.977A4U>
* <https://intl.aliyun.com/help/doc-detail/27772.htm?spm=a3c0i.l27706en.b99.63.xRdtsB>
* <https://intl.aliyun.com/help/doc-detail/31948.htm?spm=a3c0i.l31815en.b99.144.Q3ghQy>
* <https://intl.aliyun.com/help/doc-detail/26223.htm?spm=a3c0i.l26090en.a3.61.dego5c>
* https://github.com/aliyun/aliyun-oss-python-sdk

# Architecture

## Architecture Overview



As the image above:

1. The **Python SDK** is AliCloud python sdk, it's available on <https://intl.aliyun.com/help/en/doc-detail/30003.htm>

2. The **footmark** is the **middle layer** between AliCloud SDK and Ansible Module.

3. The **Ansible Modules** (parameter operate) is module of Ansible, that it's invoked by **Ansible Module Util**, this include ECS, SLB, VPC, OSS, RDS operates and this include business logic and condition.

4. The **Module Util** include the connection and access key and security.

5. The **Playbook** is Ansible's playbook.

## Component Structure

Structure of our ansible Project in such a way that it contains three directory

* module
* roles
* utils

**module** directory contains all the python modules such as ecs.py, ecs\_disk.py, ecs\_group.py, ecs\_slb.py, oss.py, rds.py etc. The module files contain information about methods written in module file like method description, parameter list, required parameters and datatype of each parameters which is helpful to understand purpose of that method.

**roles** directory is used to run our python code using ansible playbooks. As ansible playbook requires specific file structure to run our python code, we have to place our python code files in **library** directory inside the **roles** directory and place our **playbooks** (.yml files) outside the **library** directory.

In **utils** directory contains definition of commonly used methods, which includes establish a connection, set region value to perform operation, set access\_key value, set access\_secrete\_key value etc.

# Prerequisites

## System Description

* Supported Operating Systems:
  + Red Hat Enterprise Linux 6 64-bit
  + Red Hat Enterprise Linux 7 64-bit
  + CentOS 6 64-bit
  + CentOS 7 64-bit
  + Ubuntu 12.04 LTS 64-bit
  + Ubuntu 14.04 LTS 64-bit
* 2 GB RAM minimum (4+ GB RAM recommended)
* 20 GB hard disk
* 64-bit support required (kernel and runtime)

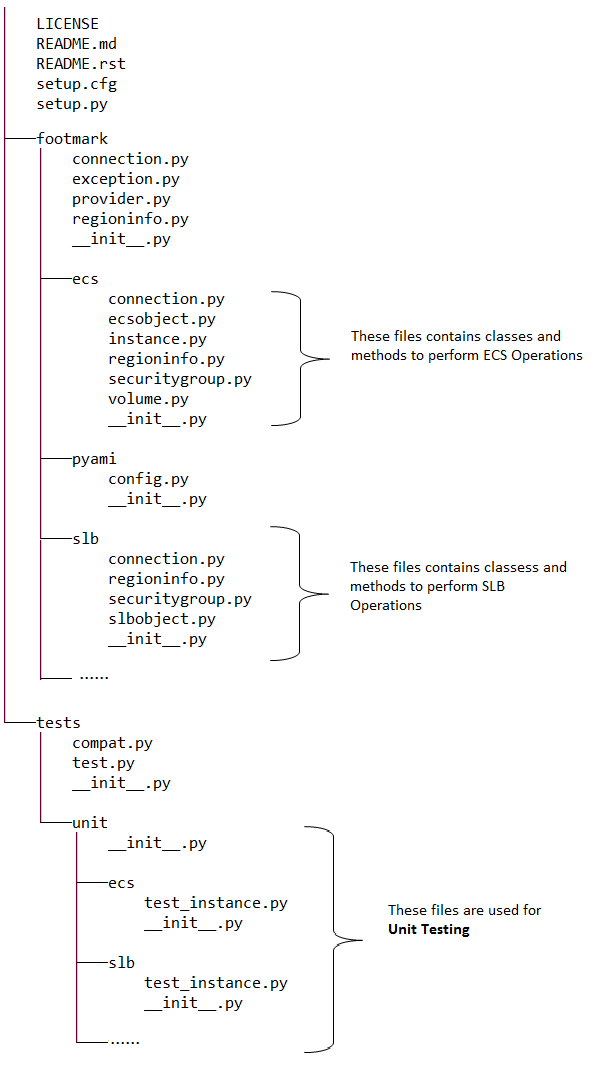
## Software

* Python 2.7.X
* The latest stable release of Ansible
* aliyun-python-sdk-core, aliyun-python-sdk-ecs, oss2, aliyun-python-sdk-slb, ecsutils and footmark Python Packages

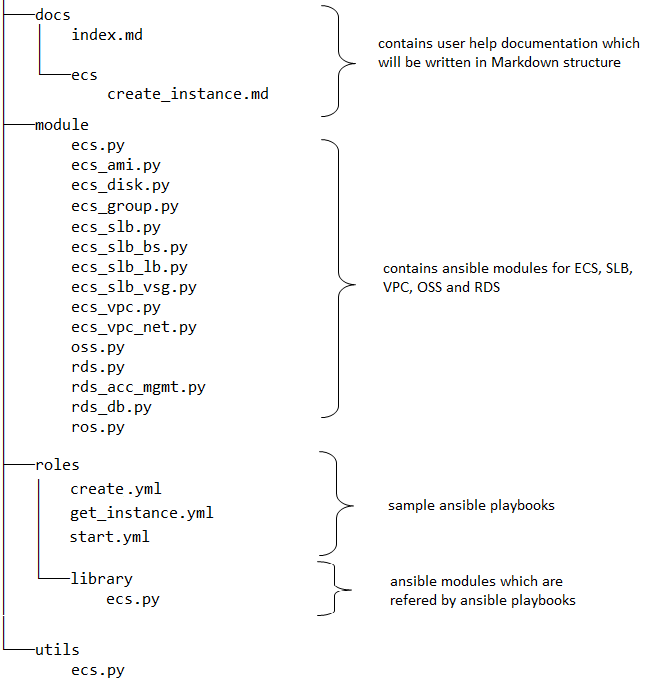
# Code

## File Names and Structure

### Footmark Project File Structure



### Ansible Project File Structure



## Executable File Names and Structure

Ansible Playbooks are used to automate the tasks such as Create Instance, Start Instance, Stop Instance, Reboot Instance etc. so to automate any new task we need to create ansible playbooks.

Here some sample Playbooks are available in **roles** directory in Ansible Project

* start.yml: This playbook is used to start Instance
* get\_instance.yml: This playbook is used to get list of all Instances
* create.yml: This playbook is used to create a new instance

To run ansible playbook, use below command –

|  |
| --- |
| ansible-playbook -i host create.yml |

In above example **ansible-playbook** command is used to run **start.yml** playbook and **-i** optionspecifies **host** inventory file.

## Interfaces Definition

Following are the list of interfaces will be integrated with ansible.

### Elastic Compute Service

The Phase II includes only Security Group Releases interface implementation.

**Security Group Related Interfaces**

**Module Name**: ecs\_group.py

#### Creating Security Group

Create an elastic compute instance according to below input parameters.

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | The state of the group after operating. For creating new security group, provide state as ‘**present’** |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| name | String | Yes | The security group name. [2, 128] English or Chinese characters, must begin with an uppercase/lowercase letter or Chinese character. Can contain numbers, ".", "\_" or "-". It cannot begin with http:// or https://. |
| description | String | No | The description of the security group, which is a string of 2 to 256 characters. It cannot begin with http:// or https://. |
| vpc\_id | String | No | The ID of the VPC to which the security group belongs. If this parameter is not passed, the security group will be created using classic network type. |
| group\_tags\* | List | No | A list of hash/dictionaries of instance tags, '[{tag\_key: "value", tag\_value: "value"}]', tag\_key must be not null when tag\_value isn't null |
| rules | List | No | List of firewall inbound rules to enforce in this group. If none are supplied, a default all-out rule is assumed. If an empty list is supplied, no inbound rules will be enabled.  Each rule contains four attributes as specified in [Security Group Rules](#_Security_Group_Rules) |
| rules\_egress | List | No | List of firewall outbound rules to enforce in this group. If none are supplied, a default all-out rule is assumed. If an empty list is supplied, no outbound rules will be enabled.  Each rule contains four attributes as specified in [Security Group Rules](#_Security_Group_Rules) |

##### Security Group Rules

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| proto | String | Yes | IP protocol, with a values: tcp | udp | icmp | gre | all;  all indicates support for all the four protocols |
| from\_port | String | Yes | Start port |
| to\_port | String | Yes | End port |
| group\_id\* | String | No | The security group ID. Either the group\_id or cidr\_ip parameter must be set. If both are set, then cidr\_ip is authorized by default. If group\_id is specified and cidr\_ip is not specified, nic\_type must be set to intranet |
| cidr\_ip | String | No | The source IP address range (CIDR format is used to specify the IP address range). The default value is 0.0.0.0/0 (which means no restriction will be applied). Other supported formats include 10.159.6.18/12. Only IPv4 is supported. |
| policy\* | String | No | Authorization policy, with parameter values: ‘accept’ and ‘drop’  Default value: accept |
| priority\* | String | No | Authorization policy priority, with parameter values: 1-100  Default value: 1 |
| nic\_type\* | String | No | Network type, with a value  internet  intranet;  The default value is internet  In mutual security group authorization (namely, SourceGroupId is specified, while SourceCidrIp is not specified), you must specify the NicType as intranet |

**NOTE: \* indicated parameters are identified by Click2Cloud Team apart from documentation specified by Aliyun Team in modules. We anticipate these parameters plays import role in interface.**

#### Querying the Security Group List

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | The state of the group after operating. For creating new security group, provide state as ‘**getinfo’** |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| group\_ids | String | Yes | A list of security groups ids. |
| vpc\_id | String | No | The ID of the VPC to which the security group belongs |

#### Deleting a Security Group

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | The state of the group after operating. For creating new security group, provide state as ‘**absent’** |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| group\_ids | String | Yes | A list of security groups ids. |

### **Server Load Balancer**

Server Load Balancer is a service that distributes traffic among multiple ECS instances. It can extend the service capability of an application system by distributing traffic and enhancing availability by eliminating any Single Point of Failure (SPOF).

**Load Balancer Related Interfaces**

#### Create Load Balancer

Create Load Balancer; generate Server Load Balancer instances, and allocate service addresses and LoadBalancerIds according to parameters.

**Module Name**: ecs\_slb\_lb.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | For creating new Server Load Balancer, provide state as ‘**present’** |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| name | String | Yes | The name of Load Balancer |
| address\_type | String | No | The address type of the SLB. It allows ‘internet’ or ‘intranet’  Default：internet |
| vswitch\_id | String | No | The vswitch id of the VPC instance. This option is invalid if address\_type parameter is provided as internet. |
| internet\_charge\_type | String | No | Charging mode for the public network instance  Value：paybybandwidth | paybytraffic  Default：paybytraffic |
| bandwidth | Integer | No | Bandwidth peak of the public network instance charged per fixed bandwidth  Value：1-1000（in Mbps）  Default：1 |
| listeners | List | No | List of ports/protocols for this SLB to listen on (see table [Listeners](#_Listeners) for definition of listeners) |
| purge\_listeners?? | String | No | Purge/remove existing listeners on SLB that are not found in listeners.  Value: no/yes  Default: yes |
| instance\_ids | List | No | List of instance ids to attach to this SLB |
| purge\_instance\_ids | String | No | Purge/remove existing instance ids on SLB that are not found in instance\_ids  Value: no/yes Default: yes |
| zones | List | No | List of availability zones to enable on this SLB |
| purge\_zones?? | String | No | Purge/remove existing availability zones on SLB that are not found in zones  Value: no/yes Default: yes |
| health\_check | List | No | An associative array of health check configuration settings (see [Health Check](#_Health_Check)) |
| scheme?? | String | No | The scheme to use when creating the SLB. For a private VPC-visible SLB use 'internal'.  Values: internal | internet-facing  Default: internet-facing |
| validate\_certs | String | No | When set to "no", SSL certificates will not be validated.  default: "yes"  choices: ["yes", "no"] |
| stickiness?? | Dictionary | No | An associative array of stickiness policy settings. Policy will be applied to all listeners (see example) |
| ids\* | List | No | A list of identifier for this instance or set of instances, so that the module will be idempotent with respect to ECS instances. This identifier should not be reused for another call later on. |

##### Listeners

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| protocol | String | Yes | options are http, https, udp, tcp |
| load\_balancer\_port | Integer | Yes | Port used by the Server Load Balancer instance frontend  Value：1-65535 |
| instance\_protocol?? | String | No | options are http, https, udp, tcp  defaults to value of protocol setting |
| instance\_port | Integer | Yes | Server Load Balancer instance's backend port.  Value:1-65535 |
| proxy\_protocol?? | String | No | Default to False |
| ssl\_certificate\_id | String | No | Security certificate ID. This Parameter is required when protocol is https. |

##### Health Check

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| ping\_protocol | String | Yes | options are http, https, udp, tcp |
| ping\_port | Integer | Yes | URI used for health check.  Value：Its length is limited to 1-80 and it must start with /. Only characters such as letters, digits, ‘-’, ‘/’, ‘.’, ‘%’, ‘?’, #’ and ‘&’ are allowed. |
| ping\_path | String | Yes | URI used for health check.  Value：Its length is limited to 1-80 and it must start with /. Only characters such as letters, digits, ‘-’, ‘/’, ‘.’, ‘%’, ‘?’, #’ and ‘&’ are allowed.  not required for tcp or https |
| response\_timeout | Integer | Yes | Maximum timeout of each health check response.  Value：1-50（in seconds）  Note: If response\_timeout < interval, response\_timeout is invalid, and the timeout is interval. |
| interval | Integer | Yes | Time interval of health checks.  Value：1-5 (in seconds） |
| unhealthy\_threshold | Integer | Yes | Threshold determining the result of the health check is fail. Namely, after how many successive failed health checks, the health check result of the backend server is changed from success to fail.  Value：1-10 |
| healthy\_threshold | Integer | Yes | Threshold determining the result of the health check is success. Namely, after how many successive successful health checks, the health check result of the backend server is changed from fail to success.  Value：1-10 |

##### Stickness

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| type | String | Yes | options are insert, server |
| enabled | String |  |  |
| expiration?? | Integer |  |  |
| cookie | String |  |  |

#### Modify Load balancer Internet Spec

Modify the LoadBalancer specification; modify the charging mode or specification of the Server Load Balancer instance according to parameters.

**Module Name**: ecs\_slb\_lb.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | For modifying server load balancer, provide state as ‘**modify\_spec’** |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| instance\_ids | List | Yes | The List of unique ID of a Server Load Balancer instance. |
| internet\_charge\_type | String | No | Charging mode for the public network instance  Value：paybybandwidth | paybytraffic  Default：paybytraffic |
| bandwidth | Integer | No | Bandwidth peak of the public network instance charged per fixed bandwidth  Value：1-1000（in Mbps）  Default：1 |

#### Delete Load Balancer

Delete LoadBalancer; delete the Server Load Balancer instances and clear the configurations related to the Server Load Balancer instances according to parameters. If there is a Listener on the Server Load Balancer instance, it will also be deleted.

**Module Name**: ecs\_slb\_lb.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | For deleting server load balancer, provide state as ‘**absent’** |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| slb\_ids | List | Yes | The List of unique ID of a Server Load Balancer instance. |

#### Set Load Balancer Status (Enable/Disable)

Configure the LoadBalancer status.

* For the Server Load Balancer instance just created, its status is active by default.
* LoadBalancerStatus is active, indicating to distribute all configurations of Listeners in the Server Load Balancer instance to the system to make it work; ；
* LoadBalancerStatus is inactive, indicating to inactive all configurations of Listeners in the Server Load Balancer instance to make it work;

**Module Name**: ecs\_slb\_lb.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | To set Load Balancer Status, provide state as ‘**modify\_status’** |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| slb\_ids | List | Yes | The List of unique ID of a Server Load Balancer instance. |
| status | String | Yes | Status of a Server Load Balancer instance  Value：inactive | active |

#### **Set Load Balancer Name (Alias)**

Configure the LoadBalancer status.

* For the Server Load Balancer instance just created, its status is active by default.
* LoadBalancerStatus is active, indicating to distribute all configurations of Listeners in the Server Load Balancer instance to the system to make it work;
* LoadBalancerStatus is inactive, indicating to inactive all configurations of Listeners in the Server Load Balancer instance to make it work;

**Module Name**: ecs\_slb\_lb.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | To set Load Balancer Name, provide state as ‘**modify\_name’** |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| attributes | List | Yes | A list of hash/dictionaries of SLB instance attributes  - '[{"key":"value", "key":"value"}]', keys allowed:  - slb\_id (required:true; default: null )  - name (required:true) |

**Backend Server Related Interfaces**

#### **Add backend Server**

Add the backend server; add a group of backend servers to the Server Load Balancer instance (ECS instance) to return the backend server list of the Server Load Balancer instance.

Note: If BackendServers contains ECS instance already added, the ECS instance will be ignored, without any error being reported. If multiple identical ECS instances are to be added in one request, only the first instance will be taken while other identical instances will be ignored.

**Module Name**: ecs\_slb\_bs.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | To add backend servers to SLB, provide state as ‘**present**’ |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| slb\_id | String | Yes | The unique ID of a Server Load Balancer instance |
| backend\_servers | Dictionary | Yes | Backend server list to be added.  See [Backend Servers](#_Backend_Servers) below |

##### Backend Servers

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| instance\_id | String | Yes | Unique id of Instance to add |
| weight | Integer | No | Weight of the backend server, in the range of 1-100  default: 100 |

#### **Remove backend Server**

Delete the backend server; delete a group of backend servers from the Server Load Balancer instance to return the backend server list in the Server Load Balancer instance.

Note: If some backend servers in BackendServers do not exist in the Server Load Balancer instance, they will be ignored directly without any error being reported.

**Module Name**: ecs\_slb\_bs.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | To remove backend servers to SLB, provide state as ‘**absent**’ |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| slb\_id | String | Yes | The unique ID of a Server Load Balancer instance |
| backend\_servers | List | Yes | Backend server list to be removed. The List can only contain 20 elements at most in one request. |

#### **Set backend Server**

Set Backend Servers; set weight for the backend ECSs; return to the backend servers list for the Server Load Balancer instance.

**Module Name**: ecs\_slb\_bs.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | To set backend servers to SLB, provide state as ‘**modify**’ |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| slb\_id | String | Yes | The unique ID of a Server Load Balancer instance |
| backend\_servers | Dictionary | Yes | Backend server list to be added.  See [Backend Servers](#_Backend_Servers) below |

##### Backend Servers

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| instance\_id | String | Yes | Unique id of Instance to add |
| weight | Integer | Yes | Weight of the backend server, in the range of 1-100  default: 100 |

#### Describe Health status of backend server

Health checks on backend servers; perform health checks on backend servers of the Server Load Balancer instance to return the health status of backend servers.

The health status of the backend server consists of normal, abnormal and unavailable. Unavailable indicates the Server Load Balancer instance is not configured with the health check, and the health status of the backend server cannot be obtained.

**Module Name**: ecs\_slb\_bs.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | To get health status of backend servers, provide state as ‘**check**’ |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| slb\_id | String | Yes | The unique ID of a Server Load Balancer instance |
| ports | List | No | Ports used by the Server Load Balancer instance frontend  Value：1-65535.  Default: None.  If the parameter is not set, it means to obtain the health status of every port. |

**VServer Group Related Interfaces**

#### Create VServer Group

Create a virtual server group and add a back-end server.

**Module Name**: ecs\_slb\_vsg.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | To create VServer Group, provide state as ‘**present**’ |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| slb\_id | String | Yes | The unique ID of a Server Load Balancer instance |
| vserver\_group\_name | String | Yes | Virtual server group name |
| backend\_servers | Dictionary | Yes | The list of back-end servers that need to be added.  The maximum number of elements in a List in a single request is 20.  See [Backend Servers](#_Backend_Servers_1) below |

##### Backend Servers

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| instance\_id | String | Yes | Unique id of Instance to add |
| port | Integer | Yes | The back-end server using the port  Range: 1-65535 |
| weight | Integer | Yes | Weight of the backend server, in the range of 1-100  default: 100 |

#### Set VServer Group Attribute

Set a virtual server group, change the name for an existing virtual server group, or change the port + weight of an existing back-end server.

**Module Name**: ecs\_slb\_vsg.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | To modify VServer Group Attributes, provide state as ‘**modify**’ |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| slb\_id | String | Yes | The unique ID of a Server Load Balancer instance |
| vserver\_group\_name | String | No | Virtual server group name, where you can rename it |
| backend\_servers | Dictionary | No | The list of back-end servers within that VServerGroup whose weight needs to be modified. If not set to not set or not change the original settings.  A single request contains up to 20 back-end server instances.  See [Backend Servers](#_Backend_Servers_2) below |

##### Backend Servers

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| instance\_id | String | Yes | Unique id of Instance to add |
| port | Integer | Yes | The back-end server using the port  Range: 1-65535 |
| weight | Integer | Yes | Weight of the backend server, in the range of 1-100  default: 100 |

#### Add VServer Group Backend Servers

Add a back-end server in a virtual server group, add a set of back-end servers to a specific virtual server group in the SLB, and return a list of back-end servers in that virtual server group.

**Module Name**: ecs\_slb\_vsg.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | To create VServer Group Backend Server, provide state as ‘**present\_bs**’ |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| slb\_id | String | Yes | The unique ID of a Server Load Balancer instance |
| backend\_servers | Dictionary | No | The list of back-end servers that need to be added. If not set to not set or not change the original settings.  A single request contains up to 20 back-end server instances. See [Backend Servers](#_Backend_Servers_3) below |

##### Backend Servers

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| instance\_id | String | Yes | Unique id of Instance to add |
| port | Integer | Yes | The back-end server using the port  Range: 1-65535 |
| weight | Integer | Yes | Weight of the backend server, in the range of 1-100  default: 100 |

#### Remove VServer Group Backend Servers

Remove VServer Group Backend Servers from SLB.

**Module Name**: ecs\_slb\_vsg.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | To remove VServer Group, provide state as ‘**absent\_bs**’ |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| slb\_id | String | Yes | The unique ID of a Server Load Balancer instance |
| vserver\_group\_id | String | Yes | Virtual server group ID |
| backend\_servers | Dictionary | Yes | The list of back-end servers that need to be remove.  The maximum number of elements in a List in a single request is 20.  See [Backend Servers](#_Backend_Servers_4) below |

##### Backend Servers

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| instance\_id | String | Yes | Unique id of Instance to add |
| port | Integer | Yes | The back-end server using the port  Range: 1-65535 |

#### Modify VServer Group Backend Servers

Modify VServer Group Backend Servers from SLB.

**Module Name**: ecs\_slb\_vsg.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | To modify VServer Group Backend Servers, provide state as ‘**modify\_bs**’ |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| vserver\_id | String | Yes | The unique ID of a Virtual Server |
| old\_backend\_servers | Dictionary | No | The list of back-end servers to remove from that VServerGroup. If not set to not set or not change the original settings.  A single request contains up to 20 back-end server instances.  See [Old Backend Servers](#_Old_Backend_Servers) below |
| new\_backend\_servers | Dictionary | No | The list of back-end servers to add to the VServerGroup. If not set to not set or not change the original settings.  A single request contains up to 20 back-end server instances.  See [New Backend Servers](#_New_Backend_Servers) below |

##### Old Backend Servers

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| instance\_id | String | Yes | Unique id of Instance to add |
| port | Integer | Yes | The back-end server using the port  Range: 1-65535 |

##### New Backend Servers

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| instance\_id | String | Yes | Unique id of Instance to add |
| port | Integer | Yes | The back-end server using the port  Range: 1-65535 |
| weight | Integer | Yes | Weight of the backend server, in the range of 1-100  default: 100 |

#### Delete VServer Group

Delete VServer Group from SLB

**Module Name**: ecs\_slb\_vsg.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | To delete VServer Group Backend Servers, provide state as ‘**absent**’ |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| slb\_ids | List | Yes | The list of Server Load Balancer IDs to delete. |

### Virtual Private Cloud

An Alibaba Cloud Virtual Private Cloud (VPC) is a virtual private cloud built and customized based on Alibaba Cloud. Full logical isolation is achieved between different VPCs. You can create and manage cloud product instances, such as ECS, Server Load Balancer and RDS, in your own VPC.

**VPC Interfaces**

#### Create a VPC

Create a VPC in a specified region

**Module Name**: ecs\_vpc.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | For creating new Virtual Private Cloud, provide state as ‘**present’** |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| cidr\_block | String | Yes | The cidr block representing the VPC, e.g. 10.0.0.0/8.  Value options: 10.0.0.0/8, 172.16.0.0/12, 192.168.0.0/16.  Default: 172.16.0.0/12 |
| user\_cidr | String | No | User custom cidr in the VPC. |
| vpc\_name | String | No | The VPC name. The default value is blank. [2, 128] English or Chinese characters, must begin with an uppercase/lowercase letter or Chinese character. Can contain numbers, "\_" and "-". The disk description will appear on the console. Cannot begin with http:// or https:// |
| description | String | No | The description. The default value is blank. [2, 256] English or Chinese characters. Cannot begin with http:// or https:// |
| subnets | Dictionary | No | A dictionary array of subnets to add of the form: { cidr: ..., az: ...}. (See [Subnets](#_Subnets)) |
| route\_tables | List | No | A dictionary array of route tables to add of the form: {subnets: [172.22.2.0/24, 172.22.3.0/24,], routes: [{ dest: 0.0.0.0/0, gw: igw, ...},]}. Where the subnets list is those subnets the route table should be associated with, and the routes list is a list of routes to be in the table.  (See [Route Tables](#_Route_Table))  The special keyword for the gw also accepts instance, tunnel, ha\_vip and router\_interface.  - routes key allowed:  - dest (required:true, default:null)  - gw (required:false, default:instance\_id, if gw is a list, the router is ECMP) |

##### Subnets

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| cidr | String | Yes | It must be equal to or belong to the VPC CIDR. The subnet mask must be between 16 and 29.  E.g., 192.168.1.0/24 |
| az | String | Yes | az is the desired availability zone of the subnet. |
| name | String | No | The name should be 2-128 characters. It should start with a letter in either the upper or lower case, or a Chinese character. It can contain digits, "\_" or "-" |
| description | String | Yes | The description can be empty, or contain 2-256 characters. Cannot start with http:// or https:// |

##### Route Table

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| dest | String | Yes | It must be a legal CIDR or IP address, such as: 192.168.0.0/24 or 192.168.0.1 |
| gw | String | No | The special keyword for the gw also accepts instance, tunnel, ha\_vip and router\_interface. if gw is a list, the router is ECMP |

#### Delete a VPC

Delete the specified VPC

Before deleting a VPC, you must first release or remove all resources in the VPC (including VSwitches, ECS Instances, Connections, etc.)

Only VPCs in the Available status can be deleted

**Module Name**: ecs\_vpc.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | For deleting VPC, provide state as ‘**absent’** |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| vpc\_ids | List | Yes | The List of unique ID of a VPC. |

**VSwitch Interface**

#### Creating a VSwitch

Creates a new VSwitch in the specified VPC.

**Module Name**: ecs\_vpc.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | For creating VSwitch, provide state as ‘**present\_vswitch’** |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| zone\_id | String | Yes | ID of the zone |
| cidr | String | Yes | It must be equal to or belong to the VPC CIDR. The subnet mask must be between 16 and 29.  E.g., 192.168.1.0/24 |
| vpc\_id | String | Yes | The VPC of the new VSwitch. |
| vswitch\_name | String | No | The VSwitch name. The default value is blank. [2, 128] English or Chinese characters, must begin with an uppercase/lowercase letter or Chinese character. Can contain numbers, "\_" and "-". This value will appear on the console.It cannot begin with http:// or https://. |
| description | String | No | The VSwitch description. The default value is blank. [2, 256] English or Chinese characters. Cannot begin with http:// or https://. |
| ids | String | No | Used to ensure the idempotence of the request.The value is generated by a client. It must be unique among all requests and contains a maximum of 64 ASCII characters. |

#### Deleting a VSwitch

Deletes the specified VSwitch

* Only VSwitches in the Available status can be deleted
* Before deleting a VSwitch, you must release or remove all resources under the VSwitch, e.g. ECS instances
* If the VPC of the specified RouteTable is creating/deleting a VSwitch or creating/deleting a RouteEntry, you cannot perform the delete VSwitch operation

**Module Name**: ecs\_vpc.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | For deleting VSwitch, provide state as ‘**absent\_vswitch’** |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| vswitch\_ids | List | Yes | The List of unique ID of a VSwicth. |

#### Querying the VSwitch list

Queries the user's VSwitch list. This interface supports querying by page, with 10 lines per page by default.

This interface can only verify the legitimacy of the parameters and cannot verify the dependency between parameters. The returned results are the "intersection" of all criteria.

**Module Name**: ecs\_vpc.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | For getting list of VSwitch, provide state as ‘**describe\_vswitch’** |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| zone\_id | String | No | ID of the zone |
| vpc\_id | String | Yes | The VPC of the new VSwitch. |
| vswitch\_id | String | No | The ID of the VSwitch to be queried |

**VRouter interfaces**

#### Querying the VRouter list

Query the list of virtual routers in the specified region. This interface supports querying by page, with 10 lines per page by default.

**Module Name**: ecs\_vpc.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | For querying VRoutes, provide state as ‘**getinfo\_vroute**’ |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| vrouter\_ids | List | No | The Ids of VRoutes to list. If no values provide, it lists down all the routes available in specified region. |

**RouteEntry interfaces**

#### Creating a custom route

Creates a RouteEntry

**Module Name**: ecs\_vpc.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | For creating route, provide state as ‘**present\_route’** |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| route\_table\_id | String | Yes | RouteTableId |
| destination\_cidr\_block | String | Yes | The RouteEntry's target network segment.  It must be a legal CIDR or IP address, such as: 192.168.0.0/24 or 192.168.0.1 |
| next\_hop\_type | String | No | The next hop type.  options: Instance | Tunnel.  The default value is Instance |
| next\_hop\_id | String | Yes | The route entry's next hop |

#### Deleting a custom route

Deletes the specified RouteEntry

You can only delete a RouteEntry in the 'Available' state

If the VPC of the RouteTable is creating/deleting a VSwitch or creating/deleting a RouteEntry, you cannot perform the delete RouteEntry operation.

**Module Name**: ecs\_vpc.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | For deleting route, provide state as ‘**absent\_route’** |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| route\_table\_id | String | Yes | RouteTableId |
| destination\_cidr\_block | String | Yes | The RouteEntry's target network segment.  It must be a legal CIDR or IP address, such as: 192.168.0.0/24 or 192.168.0.1 |
| next\_hop\_id | String | Yes | The route entry's next hop |

**Network related interfaces**

#### Requesting EIPs

Request an EIP, which is in Available status.

At present, an EIP can be bound only to a VPC ECS instance in the same region.

Upon each request, an EIP is randomly allocated in the specified region.

At present, only ICMP, TCP, and UDP EIPs are supported. Transport layer EIPs, such as IGMP EIP and SCTP EIP, are not supported.

**Module Name**: ecs\_vpc\_net.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | For creating IP, provide state as ‘**present\_eip’** |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| bandwidth | String | No | The rate limit of the EIP. If not specified, it is 5Mbps by default. |
| internet\_charge\_type | String | No | PayByBandwidth and PayByTraffic. The default value is PayByBandwidth. |

#### Binding EIPs

Bind an EIP to an ECS instance in the same region

**Module Name**: ecs\_vpc\_net.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | For binding IP, provide state as ‘**join\_eip’** |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| allocation\_id | String | Yes | The allocation ID of the EIP to be bound. The allocation ID uniquely identifies the EIP. |
| instance\_id | String | Yes | The ID of the ECS instance to be bound |

#### Modifying EIP attributes

Modify the attribute of a specified EIP. At present, this interface is mainly used to modify the bandwidth of the EIP.

The bandwidth limit of an EIP can be modified infinitely, and the new setting takes effect immediately.

**Module Name**: ecs\_vpc\_net.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | For modifying EIP attributes, provide state as ‘**modify\_eip’** |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| allocation\_id | String | Yes | The allocation ID of the EIP to be bound. The allocation ID uniquely identifies the EIP. |
| instance\_id | String | Yes | The ID of the ECS instance to be bound |

#### Unbinding EIPs

Unbind an EIP.

The EIP can be unbound only when the ECS instance is in Running or Stopped status.

**Module Name**: ecs\_vpc\_net.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | For unbind EIP, provide state as ‘**leave\_eip’** |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| allocation\_id | String | Yes | The allocation ID of the EIP to be bound. The allocation ID uniquely identifies the EIP. |
| instance\_id | String | Yes | The ID of the ECS instance to be bound |

#### Releasing EIPs

Release an EIP. The user no longer possesses the released EIP.

Only an EIP in Available status can be released.

**Module Name**: ecs\_vpc\_net.py

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| state | String | Yes | For releasing EIP, provide state as ‘**absent\_eip’** |
| region | String | Yes | The Aliyun region ID to use for the instance. |
| allocation\_ids | List | Yes | The list of allocation ID of the EIP to be bound. The allocation ID uniquely identifies the EIP. |

### Object Storage Service

Alibaba Cloud Object Storage Service (OSS) is network-based data access service. OSS enables you to store and invoke structured and unstructured data including text files, images, audios, and videos via a network connection.

**Module Name**: oss.py

**Bucket Operations**

#### Create Buckets

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| mode | String | Yes | Switches the module behavior between put (upload), get (download), geturl (return download url), getstr (download object as string), list (list keys), create (bucket), delete (bucket), and delobj (delete object).  For creating Bucket, provide value as **create** |
| bucket | String | Yes | Bucket name.  Rules for Bucket Naming：  » Only contain lowercase letter, number or hyphen  » Must begin and end with lowercase letter(s) and number(s)  » Bucket name length should be in [3-63] |
| permission | String/List | Yes | This option lets the user set the canned permissions on the bucket that are created. The permissions that can be set are 'private', 'public-read', 'public-read-write'. Multiple permissions can be specified as a list.  » Private: all accesses to the object require authentication.  » Public Read: authentication is required for writing objects; anonymous read to objects is allowed.  » Public Read/Write: everyone is allowed to read/write the object.  default: private |
| region | String | No | ACS region to create the bucket in. If not set, then the value of the ACS\_REGION and ECS\_REGION environment variables are checked. If none of those are set the region defaults to the OSS Location: oss-cn-hangzhou  default: oss-cn-hangzhou  choices: ['oss-cn-hangzhou', 'oss-cn-qingdao', 'oss-cn-beijing', 'oss-cn-hongkong', 'oss-cn-shenzhen', 'oss-cn-shanghai', 'oss-us-west-1', 'oss-ap-southeast-1'] |

#### Deleting Buckets

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| mode | String | Yes | Switches the module behavior between put (upload), get (download), geturl (return download url), getstr (download object as string), list (list keys), create (bucket), delete (bucket), and delobj (delete object).  For deleting Bucket, provide value as **delete** |
| bucket | String | Yes | Bucket name |

Please note that if the bucket is not empty (i.e., bucket contains objects or multipart upload fragments), it cannot be deleted. You must delete all objects and fragments in a bucket before deleting the bucket.

**Object Operations**

#### Simple Upload

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| mode | String | Yes | Switches the module behavior between put (upload), get (download), geturl (return download url), getstr (download object as string), list (list keys), create (bucket), delete (bucket), and delobj (delete object).  For uploading object in Bucket, provide value as **put** |
| bucket\* | String | Yes | Bucket name |
| expiration | Integer | No | Time limit (in seconds) for the URL generated and returned by OSS/Walrus when performing a mode=put or mode=geturl operation.  Default: 600 |
| headers | Dictionary | No | Custom headers for PUT operation, as a dictionary of 'key=value' and 'key=value,key=value'. |
| encrypt | String | No | When set for PUT mode, asks for server-side encryption  Default: no |
| metadata | Dictionary | No | Metadata for PUT operation, as a dictionary of 'key=value' and 'key=value,key=value'. |
| overwrite | String | No | Force overwrite either locally on the filesystem or remotely with the object/key. Used with PUT and GET operations. Boolean or one of [always, never, different], true is equal to 'always' and false is equal to 'never'.  default: 'always' |
| src | String | No | The source file path when performing a PUT operation. |

**NOTE: \* indicated parameters are identified by Click2Cloud Team apart from documentation specified by Aliyun Team in modules. We anticipate these parameters plays import role in interface.**

#### Create Folders

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| mode | String | Yes | For creating folder in Bucket, provide value as **put\_folder** |
| bucket | String | Yes | Bucket name |
| folder\_name | String | Yes | Folder name |

#### List Bucket Objects

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| mode | String | Yes | For getting list of objects from Bucket, provide value as **list** |
| expiration | Integer | No | Time limit (in seconds) for the URL generated and returned by OSS/Walrus when performing a mode=put or mode=geturl operation.  Default: 600 |
| marker | String | No | Specifies the key to start with when using list mode. Object keys are returned in alphabetical order, starting with key after the marker in order. |
| max\_keys | Integer | No | Max number of results to return in list mode, set this if you want to retrieve fewer than the default 1000 keys.  default: 1000 |

#### Deleting Objects

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| mode | String | Yes | For deleting objects from Bucket, provide value as **delobj** |
| bucket | String | Yes | Bucket name |
| object\_list | List | No | Specify list of objects to delete from a bucket |

**NOTE: Above table includes all the parameters which are in the scope of Project and the remaining parameters which not in the scope of project are not mentioned.**

### Relational Database Service

ApsaraDB Relational Database Service (RDS) is a stable, reliable, and auto-scaling online database service. Based on the Apsara distributed system and high-performance storage, the RDS supports MySQL, SQL Server, and PostgreSQL engines. It provides a complete set of solutions for disaster recovery, backup, recovery, monitoring, migration, and other functions to eliminate troubles of database operation and maintenance.

**Module Name**: rds.py

**RDS instance management**

#### Creating RDS instance

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| command | String | Yes | Specifies the action to take.  For creating RDS instance, provide value as **create** |
| region | String | Yes | The ACS region to use. If not specified then the value of the ECS\_REGION environment variable, if any, is used. |
| zone | String | No | availability zone in which to launch the instance. |
| db\_engine | String | Yes | The type of database.  choices: [ 'MySQL','SQLServer', 'PostgreSQL', 'PPAS'] |
| engine\_version | String | No | Version number of the database engine to use. If not specified, then the current Aliyun RDS default engine version is used. |
| instance\_type | String | No | The instance type of the database. If not specified, then the replica inherits the same instance type as the source instance. |
| size | Integer | Yes | Size in gigabytes of the initial storage for the DB instance. |
| instance\_net\_type | String | Yes | The net type of the DB instance  choices: ['Internet', 'Intranet'] |
| instance\_description | String | No | Instance description or remarks, no more than 256 bytes. NOTE: It cannot begin with http:// , https:// . It must start with a Chinese character or an English letter. It may contain Chinese and English characters/letters, “\_”, “-“, and numbers. The length may be 2-256 characters. |
| security\_ip\_list | List | Yes | List of IP addresses allowed to access all databases of an instance. The IP addresses are separated by commas and cannot be repeated. The list contains up to 1,000 IP addresses. Supported formats include 0.0.0.0/0, 10.23.12.24 (IP), and 10.23.12.24/24 (Classless Inter-Domain Routing (CIDR) mode. /24 represents the length of the prefix in an IP address. The range of the prefix length is [1,32].) 0.0.0.0/0 indicates unrestricted. |
| pay\_type | String | Yes | The pay type of the DB instance.  choices: ['Postpaid', 'Prepaid'] |
| period | String | Depends | This input parameter is required if pay\_type is set to Prepaid. The prepayment consists of two types: Year (yearly) and Month (monthly).  choices: ['Year', 'Month'] |
| user\_time | Integer | Depends | This input parameter is required if PayType is set to Prepaid. This parameter specifies the duration for purchase. You can set this parameter to 1, 2, 3, or other numeric values as required. |
| network\_type | String | No | The network type of the instance.  default: Classic  choices: ['VPC', 'Classic'] |
| vpc\_id | String | Depends | The ID of the VPC. Value depends on network\_type. |
| vswitch\_id | String | Depend | ID of VSwitch |
| public\_connection | String | No | The public connection string. |
| public\_port | Integer | No | The public connection port. |
| private\_connection | String | No | The private connection string. |
| private\_port | Integer | No | The private connection port. |
| db\_name | String | No | Name of a database to create within the instance. If not specified, then no database is created. |
| db\_description | String | No | Description of a database to create within the instance. If not specified, then no database is created. |
| character\_set\_name | String | No | Associate the DB instance with a specified character set. |
| username | String | Yes | Master database username. |
| password | String | Yes | Password for the master database username. |
| maint\_window | String | No | Maintenance window in format of ddd:hh24:mi-ddd:hh24:mi. (Example: Mon:22:00-Mon:23:15) If not specified then a random maintenance window is assigned. |
| backup\_window | String | No | Backup window in format of hh24:mi-hh24:mi. If not specified then a random backup window is assigned. |
| backup\_retention | Integer | No | Number of days backups are retained. Set to 0 to disable backups. Default is 1 day. Valid range: 0-35. |

#### Releasing RDS instance

NOTE: Releases an RDS instance. The following conditions must be met:

* The instance is running
* The instance is not manually locked
* The instance is a primary instance (Pay-As-You-Go type), read-only instance, disaster recovery instance, or temporary instance.

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| command | String | Yes | For releasing RDS instance, provide value as **delete** |
| instance\_ids | List | Yes | Ids of instances to remove |

#### Restarting an RDS instance

Generally, an RDS instance can be restarted within 10s. If a large number of transactions must be submitted or rolled back, the restart may be extended by about one minute. The operation must meet the following conditions or may fail:

* The instance is running.
* The instance is not currently performing a backup task.

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| command | String | Yes | For restarting RDS instance, provide value as **reboot** |
| instance\_ids | List | Yes | Ids of instances to reboot |
| force\_failover | String | No | If enabled, the reboot is done using a MultiAZ failover.  default: "no"  choices: [ "yes", "no”] |

#### Changing the RDS instance type

Changes the instance type or storage space configuration. The following conditions must be met:

* The instance is running.
* The instance is not currently performing a backup task.
* Either the instance type or storage space must be specified.
* When downgrading the disk space configuration, ensure that the input disk space is no less than 1.1 times the actually used space.
* Currently, only regular and read-only instances allow for configuration changes. Configurations cannot be changed for disaster recovery and temporary instances.

#### Modifying RDS instance

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| command | String | Yes | For modifying RDS instance attribute, provide value as **modify** |
| instance\_id | String | Yes | Id of instances to modify |
| connection\_string\_current | String | No | Current connection string of an instance |
| connection\_string\_ prefix | String | No | Target connection string |
| port | String | No | Target port |
| instance\_type | String | No | The instance type of the database. If not specified, then the replica inherits the same instance type as the source instance. |
| size | Integer | Yes | Size in gigabytes of the initial storage for the DB instance. |
| instance\_description | String | No | Instance description or remarks, no more than 256 bytes. NOTE: It cannot begin with http:// , https:// . It must start with a Chinese character or an English letter. It may contain Chinese and English characters/letters, “\_”, “-“, and numbers. The length may be 2-256 characters. |
| security\_ip\_list | List | Yes | List of IP addresses allowed to access all databases of an instance. The IP addresses are separated by commas and cannot be repeated. The list contains up to 1,000 IP addresses. Supported formats include 0.0.0.0/0, 10.23.12.24 (IP), and 10.23.12.24/24 (Classless Inter-Domain Routing (CIDR) mode. /24 represents the length of the prefix in an IP address. The range of the prefix length is [1,32].) 0.0.0.0/0 indicates unrestricted. |
| network\_type | String | No | The network type of the instance.  default: Classic  choices: ['VPC', 'Classic'] |
| vpc\_id | String | Depends | The ID of the VPC. Value depends on network\_type. |
| vswitch\_id | String | Depend | ID of VSwitch |
| maint\_window | String | No | Maintenance window in format of ddd:hh24:mi-ddd:hh24:mi. (Example: Mon:22:00-Mon:23:15) If not specified then a random maintenance window is assigned. |
| backup\_window | String | No | Backup window in format of hh24:mi-hh24:mi. If not specified, then a random backup window is assigned. |
| backup\_retention | Integer | No | Number of days backups are retained. Set to 0 to disable backups. Default is 1 day. Valid range: 0-35. |

#### Switching between the primary and standby databases of an RDS instance

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| command | String | Yes | For switching RDS instances, provide value as **switch** |
| instance\_id | String | Yes | Id of instances to modify |
| node\_id | String | Yes | Unique ID of a node. |
| force | String | Yes | Yes: forced; No: unforced; default value: unforced |

#### Creating an RDS read-only instance

NOTE: Creates a read-only instance for an instance. The following conditions must be met, or the creation will fail:

* The primary instance is running and not in switchover status.
* The read-only instance and primary instance must be in the same region.
* The database version of the read-only instance must be the same as or later than that of the primary instance. The primary instance must have a version of at least MySQL 5.6.
* The read-only instance must have a version of at least MySQL 5.6.
* A single RDS instance can have up to five read-only instances.

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| command | String | Yes | For creating read-only replica of RDS instance, provide value as **replicate** |
| source\_instance | String | Yes | ID of the database to replicate. |
| region | String | Yes | The ACS region to use. If not specified then the value of the ECS\_REGION environment variable, if any, is used. |
| zone | String | No | availability zone in which to launch the instance. |
| instance\_type | String | No | The instance type of the database. If not specified, then the replica inherits the same instance type as the source instance. |
| size | Integer | Yes | Size in gigabytes of the initial storage for the DB instance. |
| instance\_description | String | No | Instance description or remarks, no more than 256 bytes. NOTE: It cannot begin with http:// , https:// . It must start with a Chinese character or an English letter. It may contain Chinese and English characters/letters, “\_”, “-“, and numbers. The length may be 2-256 characters. |
| network\_type | String | No | The network type of the instance.  default: Classic  choices: ['VPC', 'Classic'] |
| vpc\_id | String | Depends | The ID of the VPC. Value depends on network\_type. |
| vswitch\_id | String | Depend | ID of VSwitch |

**Database management**

**Module Name**: rds\_db.py

#### Creating a database

Creates a new database in an instance. The interface must meet the following conditions, or the call will fail:

* The instance status is Running
* The instance is not locked
* The maximum number of databases in the instance is not exceeded
* The instance type is primary instance

**NOTE**: Users of PostgreSQL and PPAS instances are permitted to perform the CREATE DATABASE operation through SQL. Therefore, this interface does not support PostgreSQL and PPAS.

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| command | String | Yes | For creating RDS Database instances, provide value as **create** |
| instance\_id | String | Yes | Id of instances |
| name | String | Yes | Name of the database requiring a uniqueness check. It may consist of lower case letters, numbers and underlines, and must start with a letter  and have no more than 64 characters. |
| description | String | No | Database description, which cannot exceed 256 characters. NOTE: It cannot begin with https://. It must start with a Chinese character or English letter.  It can include Chinese and English characters/letters, underlines (\_), hyphens (-), and numbers. The length may be 2-256 characters |
| character\_set\_name | String | Yes | Character set. The value range is limited to the following:  MySQL type:  utf8  gbk  latin1  utf8mb4 (included in versions 5.5 and 5.6).  SQLServer type:  Chinese\_PRC\_CI\_AS  Chinese\_PRC\_CS\_AS  SQL\_Latin1\_General\_CP1\_CI\_AS  SQL\_Latin1\_General\_CP1\_CS\_AS  Chinese\_PRC\_BIN |

#### Deleting a database

Users can delete databases from instances to do this, the interface must meet the following conditions, or the call will fail:

* The instance status is Running
* The instance type is primary instance

**NOTE**: Users of PostgreSQL and PPAS instances are permitted to perform the DROP DATABASE operation through SQL. Therefore, this interface does not support PostgreSQL and PPAS.

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| command | String | Yes | For deleting RDS Database instances, provide value as **delete** |
| items | List | Yes | List of database instances to delete (see table [Database Items](#_Database_Items)) |

##### Database Items

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| instance\_id | String | Yes | Id of instance |
| name | String | Yes | Name of the database requiring a uniqueness check. It may consist of lower case letters, numbers and underlines, and must start with a letter  and have no more than 64 characters. |

**Account management**

**Module Name**: rds\_acc\_mgmt.py

#### Creating an account

Creates an account for a database. For instances of the same user, a single account can be used to operate multiple databases. A single account can have different permissions on different databases. The following conditions must be met, or account creation will fail:

* The instance status is Running
* The current database status is Running
* The current instance is not locked
* The maximum number of accounts for a single instance is not exceeded

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| command | String | Yes | For creating new account, provide value as **create** |
| instance\_id | String | Yes | Id of instance |
| name | String | Yes | Operation account requiring a uniqueness check. It may consist of lower case letters, numbers and underlines, and must start with a letter and have no more than 16 characters. |
| password | String | Yes | Operation password. It may consist of letters, digits, or underlines, with a length of 6 to 32 characters |
| description | String | No | Account remarks, which cannot exceed 256 characters. NOTE: It cannot begin with http:// , https:// . It must start with a Chinese character or English letter. It can include Chinese and English characters/letters, underlines (\_), hyphens (-), and numbers. The length may be 2-256 characters |
| account\_type | String | No | Privilege type of account. Normal: Common privilege;Super: High privilege; Default value is Normal.This parameter is valid for MySQL 5.5/5.6 only. |

#### Deleting an account

Directly deletes database accounts. The instance status is Running.

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| command | String | Yes | For deleting account, provide value as **delete** |
| items | List | Yes | List of accounts to delete (see table [Account Items](#_Account_Items)) |

##### Account Items

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| instance\_id | String | Yes | Id of instance |
| name | String | Yes | Operation account requiring a uniqueness check. It may consist of lower case letters, numbers and underlines, and must start with a letter and have no more than 16 characters. |

#### Granting account permissions

Grants database access permissions to accounts. A single account can be associated with one or more databases. If the specified account already has the access permission on the specified database, the operation will directly return a successful result. Instance status require in Running.

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| command | String | Yes | For granting account permission, provide value as **grant** |
| instance\_id | String | Yes | Id of instance |
| account\_name | String | Yes | Name of an account |
| db\_name | String | Yes | Name of the database associated with this account |
| privilege | String | Yes | Account permission. Values: ReadOnly and ReadWrite |

#### Revoking account permissions

Deletes an account’s access permission on a database. The following conditions must be met, or deletion will fail:

* The current database instance status is Running
* The current database status is Running

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| command | String | Yes | For revoking account permission, provide value as **revoke** |
| items | List | Yes | List of accounts to revoke (see table [Account Items](#_Account_Items_1)) |

##### Account Items

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| instance\_id | String | Yes | Id of instance |
| account\_name | String | Yes | Name of an account |
| db\_name | String | Yes | Name of the database associated with this account |

#### Resetting the instance password

Resets the account password. The following conditions must be met, or the operation will fail:

* The instance status is Running
* The instance is not locked

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| command | String | Yes | For resetting account password, provide value as **reset\_password** |
| items | List | Yes | List of accounts to (see table [Account Items](#_Account_Items_2)) |

##### Account Items

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| instance\_id | String | Yes | Id of instance |
| account\_name | String | Yes | Name of an account |
| password | String | Yes | A new password. It may consist of letters, numbers, or underlines, with a length of 6 to 32 characters |

#### Resetting an account

Resets an instance’s initial account. It is only effective for RDS for PostgreSQL and RDS for PPAS instances

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| acs\_access\_key | String | Yes | Access Key to use registered Aliyun account |
| acs\_secret\_access\_key | String | Yes | Access Secrete Key to use registered Aliyun account |
| command | String | Yes | For resetting account, provide value as **reset** |
| items | List | Yes | List of accounts to (see table [Account Items](#_Account_Items_3)) |

##### Account Items

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required? | Description |
| instance\_id | String | Yes | Id of instance |
| account\_name | String | Yes | Name of an account |
| password | String | Yes | Account password |

# Disclaimer

This **DRAFT** Specification is being forwarded to you strictly for informational purposes and sign-off requirement before development starts. This document covers functional and technical requirement of modules and interfaces implementation with Ansible for Aliyun (Alibaba) Cloud. The specification is "AS IS," "WITH ALL FAULTS" and Click2Cloud makes no warranties, and disclaims all warranties, express, implied, or statutory related to the specifications. THE CORPORATIONS ARE NOT LIABLE FOR ANY INCOMPLETENESS OR INACCURACIES. THE CORPORATIONS ARE NOT LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, OR INDIRECT DAMAGES RELATING TO THE SPECIFICATIONS OR THEIR USE.

# Appendix A: Glossary

|  |  |  |
| --- | --- | --- |
| No. | Initial Name | Description |
| 1 | CR | Change Request |
| 2 | FSD | Functional Specification Document |
| 3 | ECS | Elastic Computing Service |
| 4 | SLB | Server Load Balancer |
| 5 | VPC | Virtual Private Cloud |
| 6 | OSS | Object Storage Service |
| 7 | RDS | Relational Database Service |

# Appendix B: Document Change History and Sign-off

|  |  |  |  |
| --- | --- | --- | --- |
| Version No. | Date | Name | Sign-Off by |
| V1.0 | 01/06/2017 | Aliyun Team Name | Sign-off and approved document here |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

# Point of Contact

|  |  |  |
| --- | --- | --- |
| Name | Designation | Email |
| Sandeep Thakre | Project Manager | [sandeept@click2cloud.net](mailto:sandeept@click2cloud.net) |
| Harshal Wadaskar | Sr. Lead Software Design Engineer | [harshal.wadaskar@click2cloud.net](mailto:harshal.wadaskar@click2cloud.net) |
| Shrutika Mendhe | Sr. Lead Software Design Engineer | [shrutika.mendhe@click2cloud.net](mailto:shrutika.mendhe@click2cloud.net) |
|  |  |  |
|  |  |  |