

(Ansible Integration)

Functional Spec – ASPEN I

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Version History

|  |  |  |  |
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| Version | Date | Name | Description of Change |
| 1.0 | 12/30/2016 | Shrutika Mendhe | ASPEN -1 Interfaces draft |
| 2.0 | 01/06/2017 | Shrutika Mendhe | Updated FSD as per XiaoZhu Feedback |
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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-I deliverable modules and interface. This document covers scope of ASPEN-I and detailed on different parameters supported by interfaces. The ASPEN-I will coverers the implementation of modules for Elastic Compute Service (ECS).

Elastic Compute Service (ECS) is a type of computing service that features elastic processing capabilities. Its management mode is simpler and more efficient than that of physical servers. We can create instances, change the operating system, or release any number of ECS instances at any time according to business needs without upfront investment. An ECS computing services such as create instance, start instance, stop instance etc. are the manual processes. In this project our main goal is automate all these services using python modules and ansible playbooks. Ansible playbooks are used run python modules accomplish our task.

## 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** |
| **Instance Related Interface** | |
| 1 | Creating an instance |
| 2 | Modifying Instance Attributes |
| 3 | Querying Instance Status |
| 4 | Adding an Instance to a Security Group |
| 5 | Removing an Instance from a Security Group |
| **Disk Related Interfaces** | |
| 6 | Creating a Disk |
| 7 | Attaching a Disk |
| 8 | Detaching a Disk |
| 9 | Deleting a Disk |
| **Image Related Interfaces** | |
| 10 | Creating a User-defined Image |
| 11 | Deleting a User-defined Image |

## Out of Scope

1. Other than above task for which development is already done are not in the scope of project. Following table shows the task for which not a part of our development.

|  |  |
| --- | --- |
| **#** | **Interfaces** |
| **Instance Related Interface** | |
| 1 | Start-Stop an instance |
| 2 | Terminate an Instances |
| 3 | Get Instances |
| 4 | Get Instance information |

1. In ASPEN-1, modules are targeted for Linux systems only. The efforts are not considered for Windows or Mac Operating System.
2. All modules will be tested using Ansible command line utility. Scope does not covers testing modules on Ansible Tower.
3. ASPEN-1, targets running modules for English language only. Other languages such as Chinese is not considered.
4. 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. Interfaces mentioned in the [Out of Scope](#_Out_of_Scope) are not part of requirement.
5. Addition of new parameter specified in [Interface Definition](#_Interfaces_Definition) for each Interfaces will be treated as CR after FSD sign-off.
6. All interfaces which need to integrate, are finalized by Aliyun Team under SOW.
7. In ASPEN-1, 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-1, 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

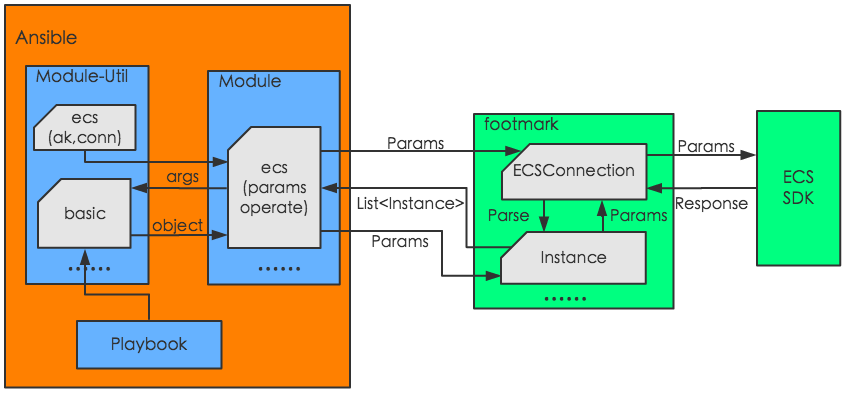
1. As currently Aliyun Web API is not working with Click2Cloud AK, team is going to use Aliyun Team AK for development and testing.

## References

* [https://intl.aliyun.com/help/en/doc-detail/30003.htm](https://intl.aliyun.com/help/en/doc-detail/30003.htm" \t "_blank)
* <https://intl.aliyun.com/help/doc-detail/25484.htm>

# Architecture

## Architecture Overview



As the image above:

1. The **ECS SDK** is AliCloud python sdk, it's available on [https://develop.aliyun.com/sdk/python](https://develop.aliyun.com/sdk/python" \t "_blank). and SDK package available on [https://intl.aliyun.com/help/en/doc-detail/30003.htm](https://intl.aliyun.com/help/en/doc-detail/30003.htm" \t "_blank)

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

3. The **Ansible Module ecs** (parameter operate) is module of Ansible, that it's invoked by **Ansible Module Util**, this include ECS operate, 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 different files i.e. **ecs.py**, **ecs\_vol.py, ecs\_group.py**.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)

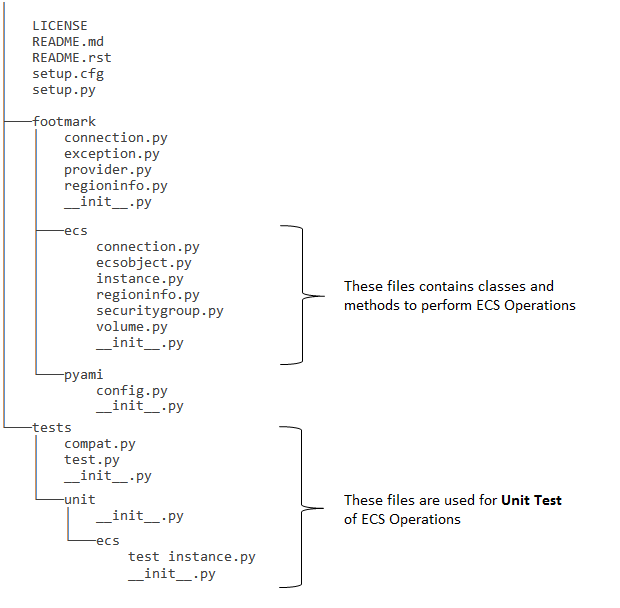
## Software

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

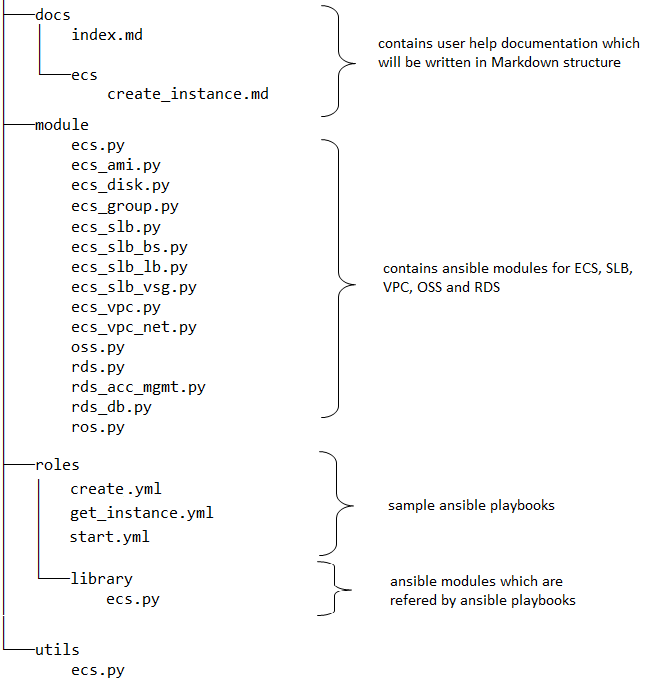
# CODE

## File Names and Structure

1. Footmark Project File Structure



1. 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 - ECS Module

Following are the list of interfaces will be integrated with ansible

**Instance Related Interface**

### Create Instance:

Create an elastic compute instance according to below input parameters.

**Module Name**: ecs.py

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Alias | Type | Required | Description |
| acs\_access\_key | ecs\_access\_key,  access\_key | String | No | Aliyun Cloud access key. If not set then the value of the `ACS\_ACCESS\_KEY\_ID`, `ACS\_ACCESS\_KEY` or `ECS\_ACCESS\_KEY` environment variable is used. |
| acs\_secret\_access\_key | ecs\_secret\_key,  secret\_key | String | No | Aliyun Cloud secret key. If not set then the value of the `ACS\_SECRET\_ACCESS\_KEY`, `ACS\_SECRET\_KEY`, or `ECS\_SECRET\_KEY` environment variable is used. |
| region | acs\_region,  ecs\_region | String | No | The Aliyun Cloud region to use. If not specified then the value of the `ACS\_REGION`, `ACS\_DEFAULT\_REGION` or `ECS\_REGION` environment variable, if any, is used. |
| status | state | String | No | The state of the instance after operating. For creating new instance provide status as ‘**present’**  Default: present |
| zone\_id | acs\_zone,  ecs\_zone,  zone | String | No | ID of a zone to which an instance belongs. If it is null, a zone is selected by the system. Default value: null. |
| image\_id | image | String | Yes | ID of an image file, indicating an image selected when an instance is started. |
| instance\_type | type | String | Yes | Type of the instance. For values, see [Instance Type Table](https://intl.aliyun.com/help/doc-detail/25685.htm). |
| group\_id |  | List | No | ID of the security group to which a newly created instance belongs. Mutual access is allowed between instances in one security group. If not specified, the newly created instance will be added to the default security group. If the default group doesn’t exist, or the number of instances in it has reached the maximum limit, a new security group will be created automatically. |
| instance\_name |  | String | No | Display name of the instance, which is a string of 2 to 128 Chinese or English characters. It must begin with an uppercase/lowercase letter or a Chinese character and can contain numerals, “.”, “\_“, or “-“. The instance name is displayed on the Alibaba Cloud console. If this parameter is not specified, the default value is InstanceId of the instance. It cannot begin with http:// or https://. |
| description |  | String | No | Description of the instance, which is a string of 2 to 256 characters. The instance description is displayed on Alibaba Cloud console. If this parameter is not specified, it is null. The default value is null. It cannot begin with http:// or https://. |
| internet\_data |  | Dictionary | No | A hash/dictionaries of Internet Data attributes. Refer table [Internet Data Declaration](#_Internet_Data_Declaration). |
| host\_name |  | String | No | Host name of the ECS, which is a string of at least two characters. **hostname** cannot start or end with “.” or “- “. In addition, two or more consecutive “.” or “- “symbols are not allowed. On Windows, the host name can contain a maximum of 15 characters, which can be a combination of uppercase/lowercase letters, numerals, and “- “. The host name cannot contain dots (“.”) or contain only numeric characters. On other OSs such as Linux, the host name can contain a maximum of 30 characters, which can be segments separated by dots (“.”), where each segment can contain uppercase/lowercase letters, numerals, or “\_ “. |
| password |  | String | No | Password to an instance is a string of 8 to 30 characters. It must contain uppercase/lowercase letters and numerals, but cannot contain special symbols. If the Password parameter is passed, use HTTPS to invoke the API to avoid password leakage. |
| io\_optimized |  | String | No | I/O optimized. Optional values are:   * False: no I/O Optimized * True: I/O Optimized   Default value: false for Generation I instances; true for other instances. |
| system\_disk |  | Dictionary | No | A hash/dictionaries of system disk for the new instance. Refer table [System Disk Declaration](#_System_Disk_Declaration). |
| disks | volumes | List | No | A list of hash/dictionaries of volumes to add to the new instance. Refer table [Disk Mapping Declaration](#_Disk_Mapping_Declaration). |
| vswitch\_id | vpc\_subnet\_id | String | No | The subnet ID in which to launch the instance (VPC). |
| private\_ip |  | String | No | Private IP address of the instance, which cannot be specified separately. |
| count |  | Integer | No | The number of instances to launch.  Default: 1 |
| allocate\_public\_ip | assign\_public\_ip | String | No | Whether allocate a public IP for the new instance. |
| bind\_eip |  | String | No | ID of Elastic IP Address bind to the new instance. |
| instance\_charge\_type |  | String | No | Payment methods.   * PrePaid: prepayment, that is, monthly/yearly subscription. Users who select the type of payment method must ensure that the credit payment is available for their accounts; otherwise it will return **invalid payment method**. * PostPaid: post-paid, that is, pay-as-you-go.   Default: PostPaid |
| period |  | Integer | No | The time that you have bought the resource, in month. Only valid when InstanceChargeType is set as PrePaid.  Value range: 1 to 12 |
| auto\_renew |  | String | No | Whether automatic renewal is supported. Only valid when instance\_charge\_type is set PrePaid.  Value range   * True，indicates to automatically renew * False，indicates not to automatically renew   Default value: False. |
| auto\_renew\_period |  | Integer | No | The duration of the automatic renew the charge of the instance. It is valid when auto\_renew is true.  Allowed values are 1, 2, 3, 6, 12 |
| instance\_tags | 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 |
| ids | id | 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. |
| wait |  | String | No | Wait for the instance to be 'running' before returning.  Choices: [yes, no, true, false]  Default: no |
| wait\_timeout |  | Integer | No | how long before wait gives up, in seconds  Default: 300 |

#### Internet Data Declaration

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | | Type | Required | | Description |
| charge\_type | String | | | No | Internet charge type, which can be PayByTraffic or PayByBandwidth. Optional values:   * PayByBandwidth * PayByTraffic   Default: PayByBandwidth |
| max\_bandwidth\_in | Integer | | | No | Maximum incoming bandwidth from the public network, measured in Mbps (Mega bit per second). Value range: [1,200]  Default: 200 Mbps |
| max\_bandwidth\_out | Integer | | | No | Maximum outgoing bandwidth to the public network, measured in Mbps (Mega bit per second). Value range:  PayByBandwidth: [0, 100]. If this parameter is not specified, API automatically sets it to 0 Mbps. PayByTraffic: [1, 100]. If this parameter is not specified, an error is returned. |

#### System Disk Declaration

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | | Type | Required | | Description |
| disk\_category | String | | | No | Category of the system disk Optional values are:   * cloud - basic cloud disk * cloud\_efficiency - ultra cloud disk * cloud\_ssd - cloud SSD * ephemeral\_ssd - ephemeral SSD   Default value: cloud for Generation I and none I/O Optimized instances; cloud\_efficiency for other instances.  **Note:** For I/O optimized instance type, SSD and ultra cloud disks are supported. For non I/O Optimized instance type, local SSD and basic cloud disks are supported. |
| disk\_size | Integer | | | No | Size of the system disk, in GB, value range:   * cloud - 40 ~ 500 * cloud\_efficiency - 40 ~ 500 * cloud\_ssd - 40 ~ 500 * ephemeral\_ssd - 40 ~ 500   Default value: size=max{40，ImageID}. The value should be equal to or greater than max{40，ImageID}. |
| disk\_name | String | | | No | Name of a system disk, which is a string of 2 to 128 Chinese or English characters. It can contain numerals, “\_“, or “-“. It must begin with an uppercase/lowercase letter or a Chinese character. If this parameter is not specified, it is null. The default value is null. The disk name is displayed on Alibaba Cloud console. It cannot begin with http:// or https://. |
| disk\_description | String | | | No | Description of a system disk, which is a string of 2 to 256 characters. The instance description is displayed on the Alibaba Cloud console. If this parameter is not specified, it is null by default. It cannot begin with http:// or https://. |

#### Disk Mapping Declaration

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | | Type | Required | | Description |
| disk\_size | Integer | | | No | Size of the n volume, n starts from 1. In GB, value range:   * cloud - 5 ~ 2000 * cloud\_efficiency - 20 ~ 2048 * cloud\_ssd - 20 ~ 2048 * ephemeral\_ssd - 5 ~ 800   The value should be equal to or greater than the specific snapshot. |
| disk\_category | String | | | No | Category of the volume n  Optional values are:   * Cloud - basic cloud disk * cloud\_efficiency - ultra cloud disk * cloud\_ssd - cloud SSD * ephemeral\_ssd - ephemeral SSD   Default value: cloud |
| snapshot\_id | String | | | No | Snapshot is used to create the data disk.  After this parameter is specified, **device\_size** is ignored, and the size of the newly created disk is the size of the specified snapshot. |
| disk\_name | String | | | No | Name of a volume, which is a string of 2 to 128 Chinese or English characters. If this parameter is not specified, it is null by default. The volume name must begin with an uppercase/lowercase letter or a Chinese character, and can contain numerals, “\_“, or “-“. The volume name is displayed on the Alibaba Cloud console. It cannot begin with http:// or https://. |
| disk\_description | String | | | No | Description of a volume, which is a string of 2 to 256 characters. If this parameter is not specified, it is null by default. The volume description is displayed on the Alibaba Cloud console. It cannot begin with http:// or https://. |
| delete\_on\_termination | String | | | No | Whether a volume is released with the instance.   * **true** indicates that the volume is released with the instance * **false** indicates that the volume is not released with the instance   Default value: true  This parameter is valid only for an independent basic cloud volume, or when device\_category=cloud. Otherwise, an error is returned. |

### Modifying Instance Attributes

Modify the attribute information of an instance, such as the password, name and security group.

**Module Name**: ecs.py

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name | | Alias | | Type | | Required | | Description |
| acs\_access\_key | ecs\_access\_key,  access\_key | | String | | No | | Aliyun Cloud access key. If not set then the value of the `ACS\_ACCESS\_KEY\_ID`, `ACS\_ACCESS\_KEY` or `ECS\_ACCESS\_KEY` environment variable is used. | |
| acs\_secret\_access\_key | ecs\_secret\_key,  secret\_key | | String | | No | | Aliyun Cloud secret key. If not set then the value of the `ACS\_SECRET\_ACCESS\_KEY`, `ACS\_SECRET\_KEY`, or `ECS\_SECRET\_KEY` environment variable is used. | |
| region | acs\_region,  ecs\_region | | String | | No | | The Aliyun Cloud region to use. If not specified then the value of the `ACS\_REGION`, `ACS\_DEFAULT\_REGION` or `ECS\_REGION` environment variable, if any, is used. | |
| status | state | | String | | No | | The state of the instance after operating. For modifying instance pass state as ‘**present**’. Based on attribute parameter passed, it will modify instance attribute. | |
| attributes |  | | List | | Yes | | A list of hash/dictionaries of instance attributes. Refer table [Attributes Declaration](#_Attributes_Declaration) | |

#### Attributes Declaration

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Required | Description |
| id | String | Yes | The specified instance ID |
| name | String | No | Display name of the instance, which is a string of 2 to 128 Chinese or English characters. It must begin with an uppercase/lowercase letter or a Chinese character and can contain numerals, ".", "\_", or "-". It cannot begin with http:// or https://. |
| description | String | No | Description of the instance, which is a string of 2 to 256 characters. The instance description is displayed on Aliyun console. It is null by default. It cannot begin with http:// or https://. |
| password | String | No | Password is to be reset as one specified by the user. The password can contain only numerals or English characters. It must be 6 to 30 English characters long |
| host\_name | String | No | Name of the instance using the OS, which is a string of at least two characters. **hostname** cannot start or end with "." or "-". In addition, two or more consecutive "." or "-" symbols are not allowed. On Windows, the host name can contain a maximum of 15 characters, which can be a combination of uppercase/lowercase letters, numerals, and "-". The host name cannot contain dots (".") or contain only numeric characters. On other OSs such as Linux, the host name can contain a maximum of 30 characters, which can be segments separated by dots, where each segment can contain uppercase/lowercase letters, numerals, or "\_". |

### Querying Instance Status

Obtain the list of all the instances of the current user in batches with status information.

**Module Name**: ecs.py

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Alias | Type | Required | Description |
| acs\_access\_key | ecs\_access\_key,  access\_key | String | No | Aliyun Cloud access key. If not set then the value of the `ACS\_ACCESS\_KEY\_ID`, `ACS\_ACCESS\_KEY` or `ECS\_ACCESS\_KEY` environment variable is used. |
| acs\_secret\_access\_key | ecs\_secret\_key,  secret\_key | String | No | Aliyun Cloud secret key. If not set then the value of the `ACS\_SECRET\_ACCESS\_KEY`, `ACS\_SECRET\_KEY`, or `ECS\_SECRET\_KEY` environment variable is used. |
| region | acs\_region,  ecs\_region | String | No | The Aliyun Cloud region to use. If not specified then the value of the `ACS\_REGION`, `ACS\_DEFAULT\_REGION` or `ECS\_REGION` environment variable, if any, is used. |
| status | state | String | Yes | The state of the instance after operating. For querying instance status provide state as ‘**getstatus’** |
| zone\_id | acs\_zone,  ecs\_zone,  zone | String | No | ID of a zone to which an instance belongs. If it is null, a zone is selected by the system. Default value: null. |
| pagenumber |  | Integer | No | Page number of the instance status list. The start value is 1.  Default value: 1 |
| pagesize |  | Integer | No | Sets the number of lines per page for queries per page. The maximum value is 50.  Default value: 10 |

### Adding an Instance to a Security Group

Add an instance to a specified security group.

* This operation can only be performed for instances in the Stopped or Running state.
* Each instance can be attached to a maximum of 5 security groups
* Each security group can have up to 1000 instances

**Module Name**: ecs.py

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Alias | Type | Required | Description |
| acs\_access\_key | ecs\_access\_key,  access\_key | String | No | Aliyun Cloud access key. If not set then the value of the `ACS\_ACCESS\_KEY\_ID`, `ACS\_ACCESS\_KEY` or `ECS\_ACCESS\_KEY` environment variable is used. |
| acs\_secret\_access\_key | ecs\_secret\_key,  secret\_key | String | No | Aliyun Cloud secret key. If not set then the value of the `ACS\_SECRET\_ACCESS\_KEY`, `ACS\_SECRET\_KEY`, or `ECS\_SECRET\_KEY` environment variable is used. |
| region | acs\_region,  ecs\_region | String | No | The Aliyun Cloud region to use. If not specified then the value of the `ACS\_REGION`, `ACS\_DEFAULT\_REGION` or `ECS\_REGION` environment variable, if any, is used. |
| status | state | String | No | For adding instances to security groups provide state as ‘**present**’ |
| sg\_action |  | String | Yes | The action of operating security group. For adding instances to security groups provide sg\_action as ‘**join**’ |
| instance\_id | instance\_ids | List | Yes | A list of instance ids. |
| group\_id |  | String | Yes | Security group id to use with instances |

### Removing an Instance from a Security Group

Remove an instance from a specified security group.

* This operation can only be performed on instances in the Stopped or Running state.
* Each instance must belong to at least 1 security group. If an instance only belongs to one security group and you try to remove it from this group, the request will fail.

**Module Name**: ecs.py

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Alias | Type | Required | Description |
| acs\_access\_key | ecs\_access\_key,  access\_key | String | No | Aliyun Cloud access key. If not set then the value of the `ACS\_ACCESS\_KEY\_ID`, `ACS\_ACCESS\_KEY` or `ECS\_ACCESS\_KEY` environment variable is used. |
| acs\_secret\_access\_key | ecs\_secret\_key,  secret\_key | String | No | Aliyun Cloud secret key. If not set then the value of the `ACS\_SECRET\_ACCESS\_KEY`, `ACS\_SECRET\_KEY`, or `ECS\_SECRET\_KEY` environment variable is used. |
| region | acs\_region,  ecs\_region | String | No | The Aliyun Cloud region to use. If not specified then the value of the `ACS\_REGION`, `ACS\_DEFAULT\_REGION` or `ECS\_REGION` environment variable, if any, is used. |
| status | state | String | No | For removing instances from security groups provide state as ‘**present**’ |
| sg\_action |  | String | Yes | The action of operating security group. For removing instances from security groups provide sg\_action as ‘**leave**’ |
| instance\_ids |  | List | Yes | A list of instance ids. |
| group\_id |  | String | Yes | Security group id to use with the instance |

**Disk Related Interfaces**

### Creating a Disk

This interface is used to create independent general cloud disks. System disk snapshots cannot be used to create data disks. During the process of disk creation, auto snapshots are deleted by default during disk deletion (that is, ‘DeleteAutoSnapshot=true’). This parameter can be modified through [Modify Disk Attributes](https://intl.aliyun.com/help/doc-detail/25517.htm). The billing method is by amount.

In the request parameters, either the **Size** or **SnapshotId** must be selected to specify the disk size or snapshot that can be used to create the disk.

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Alias | Type | Required | Description |
| acs\_access\_key | ecs\_access\_key,  access\_key | String | No | Aliyun Cloud access key. If not set then the value of the `ACS\_ACCESS\_KEY\_ID`, `ACS\_ACCESS\_KEY` or `ECS\_ACCESS\_KEY` environment variable is used. |
| acs\_secret\_access\_key | ecs\_secret\_key,  secret\_key | String | No | Aliyun Cloud secret key. If not set then the value of the `ACS\_SECRET\_ACCESS\_KEY`, `ACS\_SECRET\_KEY`, or `ECS\_SECRET\_KEY` environment variable is used. |
| region | acs\_region,  ecs\_region | String | No | The Aliyun Cloud region to use. If not specified then the value of the `ACS\_REGION`, `ACS\_DEFAULT\_REGION` or `ECS\_REGION` environment variable, if any, is used. |
| status | state | String | No | The state of the instance after operating. For creating new disk provide state as ‘**present’**  Default: present |
| zone\_id | zone,  availability\_zone,  acs\_zone,  ecs\_zone | String | Yes | ID of the zone |
| disk\_name | name | String | No | The value of disk name is blank by default. [2, 128] English or Chinese characters, must begin with an uppercase/lowercase letter or Chinese character. Can contain numbers, “.”, “\_“ and “-“. The disk name will appear on the console. It cannot begin with http:// or https://. |
| description |  | String | No | The value of disk description is blank by default. [2, 256] characters. The disk description will appear on the console. It cannot begin with http:// or https://. |
| disk\_category | volume\_type  disk\_type | String | No | Category of the data disk Optional values are:   * cloud - general cloud disk * cloud\_efficiency - efficiency cloud disk * cloud\_ssd - cloud SSD   Default value: cloud |
| size | volume\_size  disk\_size | Integer | No | Size of the system disk, in GB, values range:   * cloud - 5 ~ 2000 * cloud\_efficiency - 20 ~ 2048 * cloud\_ssd - 20 ~ 2048   The value should be equal to or greater than the size of the specific SnapshotId. |
| snapshot\_id | snapshot | String | No | Snapshots are used to create the data disk  After this parameter is specified, Size is ignored. The actual size of the created disk is the size of the specified snapshot Snapshots from on or before July 15, 2013 cannot be used to create a disk |
| disk\_tags | 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 |

### Attaching a Disk

The instance state must be running or stopped.

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Alias | Type | Required | Description |
| acs\_access\_key | ecs\_access\_key,  access\_key | String | No | Aliyun Cloud access key. If not set then the value of the `ACS\_ACCESS\_KEY\_ID`, `ACS\_ACCESS\_KEY` or `ECS\_ACCESS\_KEY` environment variable is used. |
| acs\_secret\_access\_key | ecs\_secret\_key,  secret\_key | String | No | Aliyun Cloud secret key. If not set then the value of the `ACS\_SECRET\_ACCESS\_KEY`, `ACS\_SECRET\_KEY`, or `ECS\_SECRET\_KEY` environment variable is used. |
| region | acs\_region,  ecs\_region | String | No | The Aliyun Cloud region to use. If not specified then the value of the `ACS\_REGION`, `ACS\_DEFAULT\_REGION` or `ECS\_REGION` environment variable, if any, is used. |
| status | state | String | No | For attaching disk provide state as ‘**present’** |
| instance\_id | instance | String | Yes | The specified instance ID |
| disk\_id | vol\_id,  id | String | Yes | The disk ID. The disk and Instance must be in the same zone |
| device | device\_name | String | No | The value **null** indicates that the value is allocated by default, starting from /dev/xvdb to /dev/xvdz Default value: Null |
| delete\_with\_instance | delete\_on\_termination | String | No | Whether or not the disk is released along with the instance:   * True/Yes indicates that when the instance is released, this disk will be released with it. * False/No indicates that when the instance is released, this disk will be retained.   Default value: None, indicates taking the current value without modification. |

### Detaching a Disk

To carry out this operation, the disk’s ‘Portable’ status must be ‘True’ and the instance it is attached to must in the running or stopped state.

When an independent basic cloud disk is detached from an instance through this interface, ‘DeleteWithInstance’ will be set to ‘False’.

If the disk specified by ‘DiskId’is not attached on the instance, this operation will fail.

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Alias | Type | Required | Description |
| acs\_access\_key | ecs\_access\_key,  access\_key | String | No | Aliyun Cloud access key. If not set then the value of the `ACS\_ACCESS\_KEY\_ID`, `ACS\_ACCESS\_KEY` or `ECS\_ACCESS\_KEY` environment variable is used. |
| acs\_secret\_access\_key | ecs\_secret\_key,  secret\_key | String | No | Aliyun Cloud secret key. If not set then the value of the `ACS\_SECRET\_ACCESS\_KEY`, `ACS\_SECRET\_KEY`, or `ECS\_SECRET\_KEY` environment variable is used. |
| region | acs\_region,  ecs\_region | String | No | The Aliyun Cloud region to use. If not specified then the value of the `ACS\_REGION`, `ACS\_DEFAULT\_REGION` or `ECS\_REGION` environment variable, if any, is used. |
| status | state | String | No | The state of the instance after operating. For dettaching disk provide state as ‘**present’** |
| disk\_id | vol\_id,  id | String | Yes | ID of the disk |
| instance\_id | instance | String | No | The specified instance ID |

### Deleting a Disk

When a disk device is no longer in use, it can be removed. However, only independent basic cloud disks can be removed.

* When removing the disk, the disk status must be **Available**. If the disk with a specified ID does not exist, the request will be ignored.
* Because your snapshots are retained, you can choose to retain automatic snapshots. Make sure you delete unnecessary orphaned user snapshots and automatic snapshots (that is, snapshots created using a deleted disk) in time to make enough snapshot quota for periodical automatic snapshot policies.

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Alias | Type | Required | Description |
| acs\_access\_key | ecs\_access\_key,  access\_key | String | No | Aliyun Cloud access key. If not set then the value of the `ACS\_ACCESS\_KEY\_ID`, `ACS\_ACCESS\_KEY` or `ECS\_ACCESS\_KEY` environment variable is used. |
| acs\_secret\_access\_key | ecs\_secret\_key,  secret\_key | String | No | Aliyun Cloud secret key. If not set then the value of the `ACS\_SECRET\_ACCESS\_KEY`, `ACS\_SECRET\_KEY`, or `ECS\_SECRET\_KEY` environment variable is used. |
| region | acs\_region,  ecs\_region | String | No | The Aliyun Cloud region to use. If not specified then the value of the `ACS\_REGION`, `ACS\_DEFAULT\_REGION` or `ECS\_REGION` environment variable, if any, is used. |
| status | state | String | Yes | The state of the instance after operating. For deleting disk provide state as ‘**absent’** |
| disk\_id | vol\_id,  id | String | Yes | The ID of the disk device that needs to be removed |

**Image Related Interfaces**

### Creating a User-defined Image

Create a user-defined image with snapshots. The created image can be used to create a new ECS instance.

* Only a system disk snapshot can be used to create user-defined images.
* Only a snapshot in completed state (the progress is 100%) can be used to create a user-defined image.

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Alias | Type | Required | Description |
| acs\_access\_key | ecs\_access\_key,  access\_key | String | No | Aliyun Cloud access key. If not set then the value of the `ACS\_ACCESS\_KEY\_ID`, `ACS\_ACCESS\_KEY` or `ECS\_ACCESS\_KEY` environment variable is used. |
| acs\_secret\_access\_key | ecs\_secret\_key,  secret\_key | String | No | Aliyun Cloud secret key. If not set then the value of the `ACS\_SECRET\_ACCESS\_KEY`, `ACS\_SECRET\_KEY`, or `ECS\_SECRET\_KEY` environment variable is used. |
| region | acs\_region,  ecs\_region | String | No | The Aliyun Cloud region to use. If not specified then the value of the `ACS\_REGION`, `ACS\_DEFAULT\_REGION` or `ECS\_REGION` environment variable, if any, is used. |
| status | state | String | No | For creating image provide state as ‘**present’**  Default: present |
| instance\_id | instance | String | No | instance id of the image to create |
| snapshot\_id | snapshot | String | Yes | The snapshot ID. A user-defined image is created from the specified snapshot. |
| image\_name | name | String | No | The name of the image, [2, 128] English or Chinese characters. It must begin with an uppercase/lowercase letter or a Chinese character, and may contain numbers, "\_" or "-". It cannot begin with http:// or https://. |
| image\_version | version | String | No | The version number of the image, with a length limit of 1 to 40 English characters |
| description |  | String | No | The description of the image, with a length limit of 0 to 256 characters. Leaving it blank means null, which is the default value. It cannot begin with http:// or https://. |
| disk\_mapping |  | List | No | An optional list of device hashes/dictionaries with custom configurations (same block-device-mapping parameters). Refer [Disk Mapping Declaration](#_Device_Mapping_Declaration). |
| images\_tags | 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 |
| launch\_permission |  | List | No | Users that should be able to launch the ami. Expects dictionary with a key of user\_ids. user\_ids should be a list of account ids and the number no more than 10. |
| wait |  | String | No | Wait for the instance to be 'running' before returning.  Choices: [yes, no, true, false]  Default: no |
| wait\_timeout |  | Integer | No | how long before wait gives up, in seconds  Default: 300 |

#### Disk Mapping Declaration

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | | Type | Required | | Description |
| device | String | | | No | Disk Device Name:  value / dev / xvda start to / dev / xvdz, / dev / xvda default system disk is a snapshot of  / dev / xvdb-z is only a snapshot of the data disk.  Device parameters can only be specified by the system, and can not be repeated. |
| snapshot\_id | String | | | No | Snapshot Id |
| disk\_size | Integer | | | No | Size of the disk, in the range: [5-2000GB]  If not specified, the default size snapshots  if you do not specify a snapshot Id, default 5GB,  if you specify a size not smaller than the size of the snapshot. |

### Deleting a User-defined Image

Delete a specified user-defined image. A deleted image cannot be used again to create or reset an ECS instance.

* If the specified image does not exist, the request will be ignored.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Alias | Type | Required | Description |
| acs\_access\_key | ecs\_access\_key,  access\_key | String | No | Aliyun Cloud access key. If not set then the value of the `ACS\_ACCESS\_KEY\_ID`, `ACS\_ACCESS\_KEY` or `ECS\_ACCESS\_KEY` environment variable is used. |
| acs\_secret\_access\_key | ecs\_secret\_key,  secret\_key | String | No | Aliyun Cloud secret key. If not set then the value of the `ACS\_SECRET\_ACCESS\_KEY`, `ACS\_SECRET\_KEY`, or `ECS\_SECRET\_KEY` environment variable is used. |
| region | acs\_region,  ecs\_region | String | No | The Aliyun Cloud region to use. If not specified then the value of the `ACS\_REGION`, `ACS\_DEFAULT\_REGION` or `ECS\_REGION` environment variable, if any, is used. |
| status | state | String | Yes | For deleting image provide state as ‘**absent**’ |
| image\_id |  | String | Yes | ID of an image |

**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.**

# 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 |

# Appendix B: Document Change History and Sign-off

|  |  |  |  |
| --- | --- | --- | --- |
| Version No. | Date | Name | Sign-Off by |
| V1.0 | 1/6/2017 | XiaoZhu/Shuwei | Please update comments |
| V2.0 | 1/9/2017 | XiaoZhu/Shuwei | Please make sure the comments |
| V3.0 | 1/12/2017 | XiaoZhu/Shuwei | Please refer comments, thanks. |
| V3.1 | 1/13/2017 | XiaoZhu/Shuwei | Shuwei/XiaoZhu sign off |

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