(Ansible Integration)

Functional Spec – ASPEN I

JANUARY 6, 2017

Shrutika Mendhe

Email: shrutika.mendhe@click2cloud.net

Document Version – V3.1

Version History

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
3.0	01/11/2017	Shrutika Mendhe	Updated parameters alias
3.1	01/12/2017	Shrutika Mendhe	Updated as per XiaoZhu Feedback

Reviewers

Name	Version Approved	Role	Date
Sandeep Thakre	3.0	PM	01/11/2017
Sandeep Thakre	3.1	PM	01/12/2017

Table of Contents

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

2. In ASPEN-1, 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-1, 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. Interfaces mentioned in the Out of Scope are not part of requirement.
5. Addition of new parameter specified in Interface 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

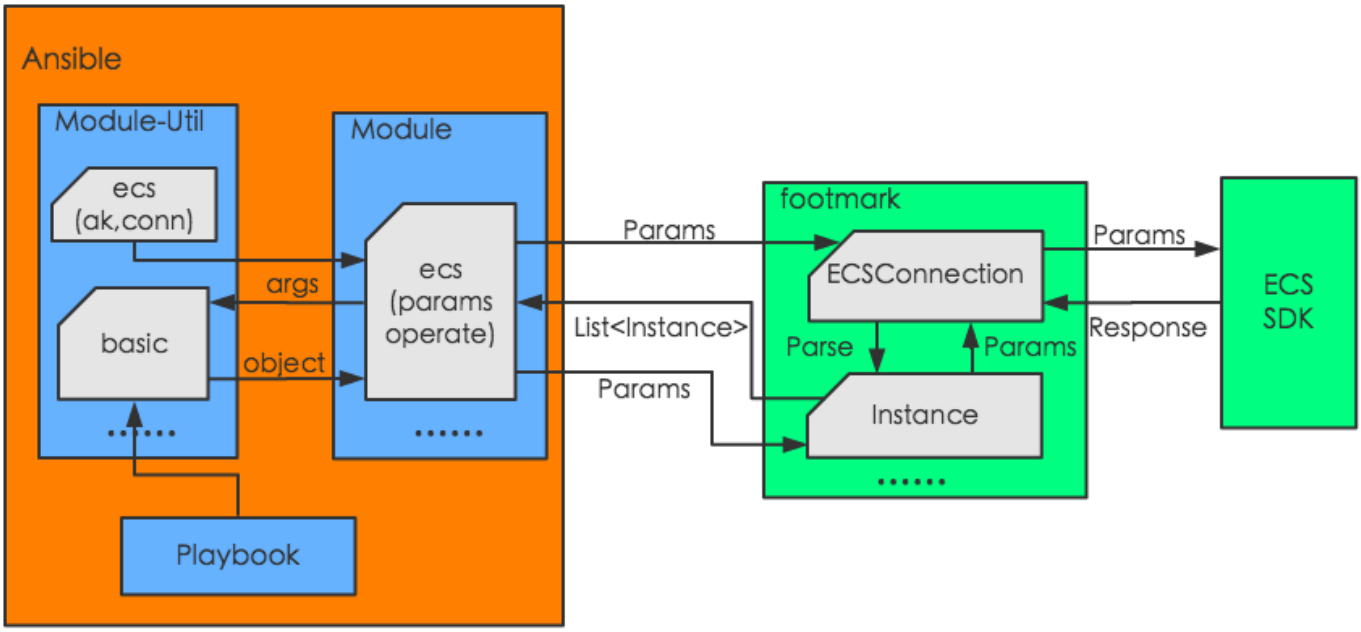
1. As currently Aliyun Web API is not working with Click2Cloud AK, team is going to use Aliyun Team AK for development and testing.

References

- https://intl.aliyun.com/help/en/doc-detail/30003.htm
- https://intl.aliyun.com/help/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. and SDK package 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 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)

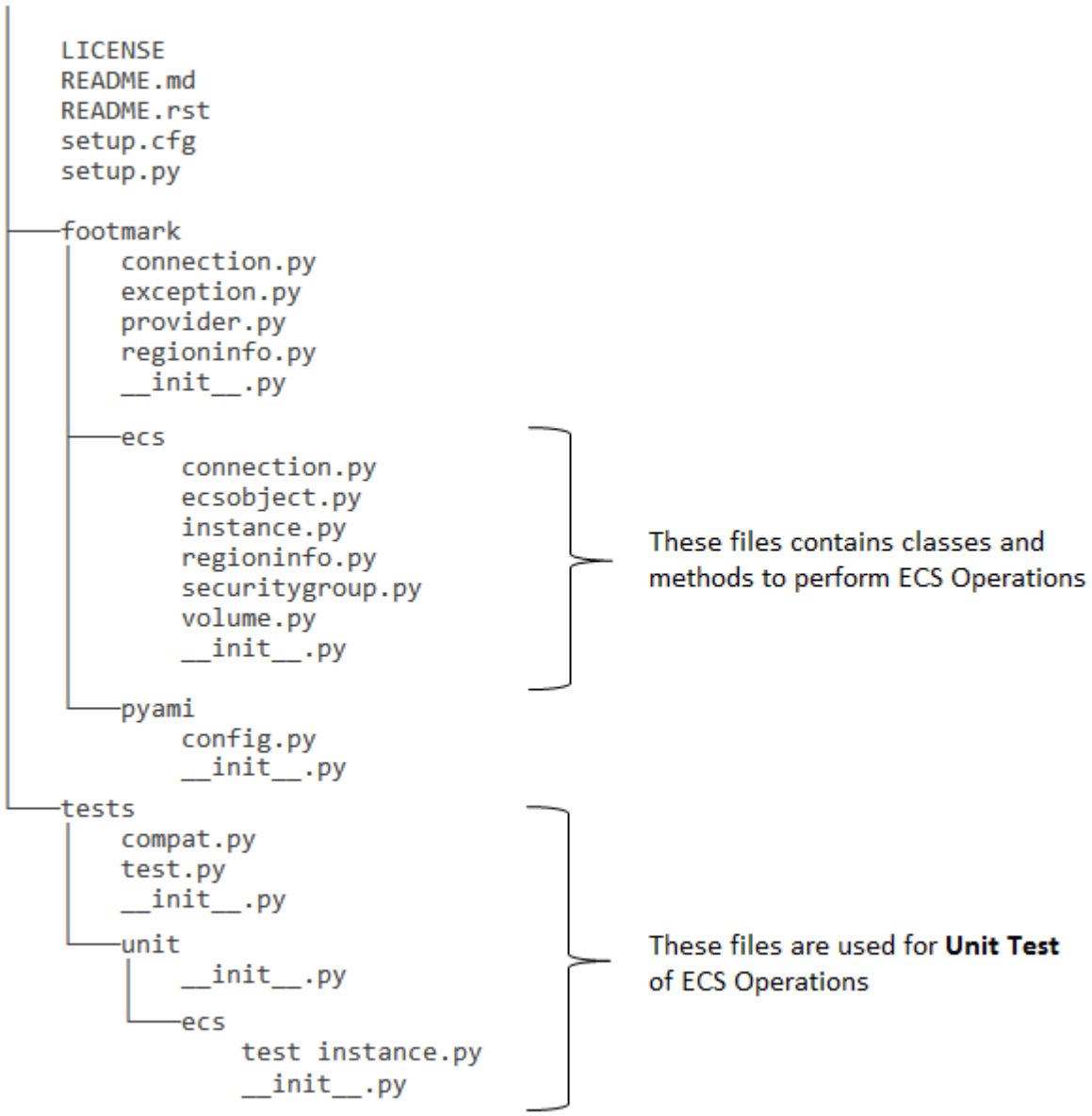
Software

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

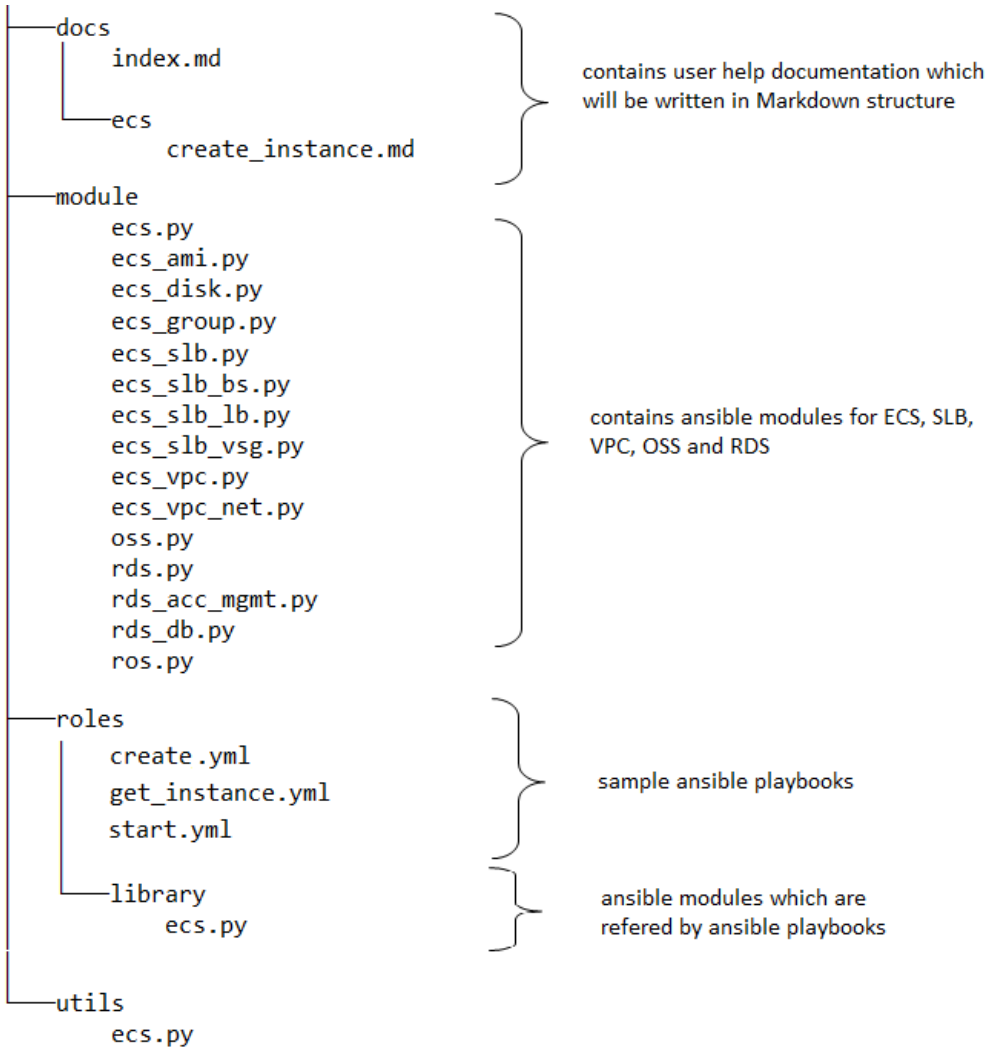
CODE

File Names and Structure

1. Footmark Project File Structure



2. 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** option specifies **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.
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.
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.
disks	volumes	List	No	A list of hash/dictionaries of volumes to add to the new instance. Refer table 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, **disk_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

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. 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	disk_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.
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/Shu wei	Please update comments
V2.0	1/9/2017	XiaoZhu/Shu wei	Please make sure the comments
V3.0	1/12/2017	XiaoZhu/Shu wei	Please refer comments, thanks.
V3.1	1/13/2017	XiaoZhu/Shu wei	Shuwei/XiaoZhu sign off

Point of Contact

Name	Designation	Email
Sandeep Thakre	Project Manager	sandeept@click2cloud.net
Shrutika Mendhe	Sr. Lead Software Design Engineer	shrutika.mendhe@click2cloud.net