Name: Aducal, John Mark S.	Date Performed: 12 / 09 / 2022
Course/Section: CPE232 - CPE31S24	Date Submitted: 12 / 09 / 2022
Instructor: Engr. Jonathan V. Taylar	Semester and SY: 1st semester SY
	2022-2023

## **Activity 15: OpenStack Installation (Neutron, Horizon, Cinder)**

## 1. Objectives

Create a workflow to install OpenStack using Ansible as your Infrastructure as Code (IaC).

# 2. Intended Learning Outcomes

- 1. Analyze the advantages and disadvantages of cloud services
- 2. Evaluate different Cloud deployment and service models
- 3. Create a workflow to install and configure OpenStack base services using Ansible as documentation and execution.

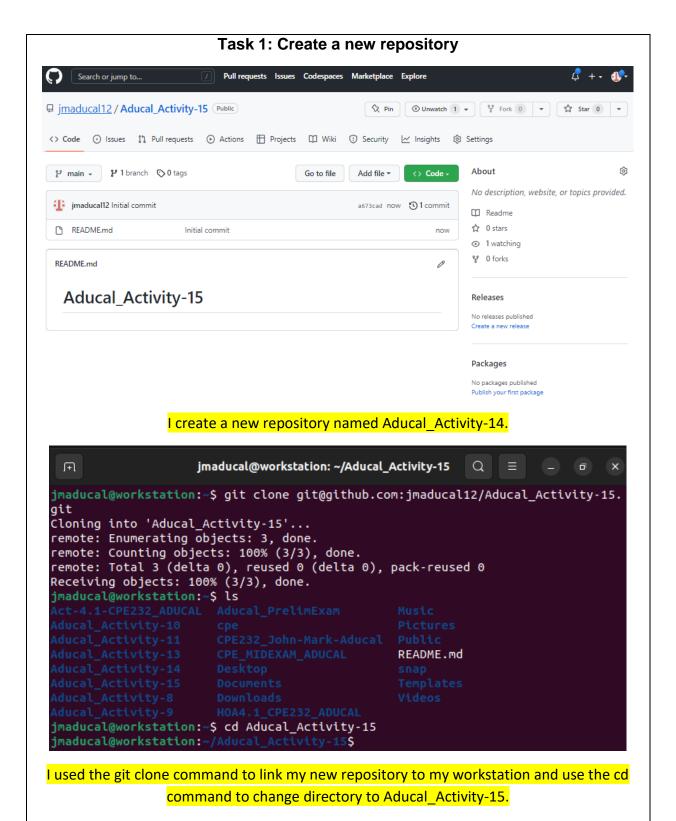
#### 3. Resources

Oracle VirtualBox (Hypervisor)

1x Ubuntu VM or Centos VM

### 4. Tasks

- 1. Create a new repository for this activity.
- 2. Create a playbook that converts the steps in the following items in <a href="https://docs.openstack.org/install-guide/">https://docs.openstack.org/install-guide/</a>
  - a. Neutron
  - b. Horizon
  - c. Cinder
  - d. Create different plays in installing per server type (controller, compute etc.) and identify it as a group in the Inventory file.
  - e. Add, commit and push it to your GitHub repo.
- **5. Output** (screenshots and explanations)



```
jmaducal@workstation: ~/Aducal_Activity-15

GNU nano 6.2 inventory
[Controller]
localhost ansible_connection=local

[Block_Storage]
CentOS ansible_host=192.168.56.108

[Networking]
server3 ansible_host=192.168.56.110
```

This are the contents of inventory file including the three groups such as controller, networking and block storage.

This are the configurations inside of ansible.cfg file.

```
jmaducal@workstation: ~/Aducal_Activity-15
Ŧ
GNU nano 6.2
                                  openstack.yml
hosts: all
become: true
pre_tasks:
name: install updates (CentOS)
  tags: always
  dnf:
    update_only: yes
    update cache: yes
  when: ansible distribution == "CentOS"
name: install updates (Ubuntu)
  tags: always
  apt:
    upgrade: dist
    update cache: yes
  when: ansible_distribution == "Ubuntu"
```

```
- hosts: Controller
become: true
roles:
    - Controller

- hosts: Networking
become: true
roles:
    - Networking

- hosts: Block_Storage
become: true
roles:
    - Block_Storage
```

Inside of openstack file, there are pre\_tasks for installing updates for CentOS and Ubuntu servers and particular roles for Controller, Networking and Block Storage.

I named the directories Block\_Storage, Controller, and Networking. Then, inside those directories, there were specific tasks for installing Neutron, Horizon and Cinder.

# jmaducal@workstation: ~/Aducal\_Activity-15/roles/Controll... ſŦ GNU nano 6.2 main.yml name: Install Neutron in Controller Node apt: name: - neutron-server neutron-plugin-ml2 neutron-linuxbridge-agent - neutron-dhcp-agent - neutron-metadata-agent state: latest when: ansible\_distribution == "Ubuntu" name: Install Horizon in Controller Node apt: name: - openstack-dashboard state: latest when: ansible distribution == "Ubuntu" name: Install Cinder in Controller Node apt: name: - cinder-api - cinder-scheduler state: latest when: ansible\_distibution == "Ubuntu"

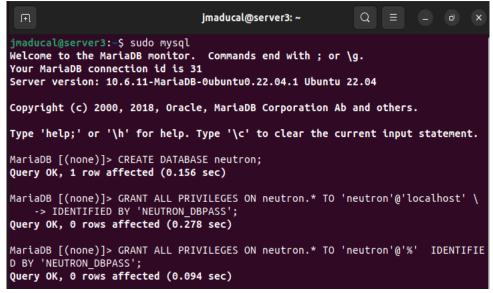
The contents of main.yml file inside of Controller Directory.

The contents of main.yml file inside of Networking Directory.

The contents of main.yml file inside of Block Storage Directory.

My workstation is not working properly not booting up. Other servers are ok.

a) Neutron (Networking service)



b) Horizon (Dashboard)

```
jmaducal@server3: ~ Q =

GNU nano 6.2 /etc/openstack-dashboard/local_settings.py

OPENSTACK_HOST = "Controller"
OPENSTACK_KEYSTONE_URL = "http://%s/identity/v3" % OPENSTACK_HOST
```

```
jmaducal@server3: ~ Q = - @ x

GNU nano 6.2    /etc/openstack-dashboard/local_settings.py *

CACHES = {
    'default': {
        'BACKEND': 'django.core.cache.backends.memcached.MemcachedCache',
        'LOCATION': 'Controller:11211',
    },
}
```

c) Cinder (Block Storage service)

#### Reflections:

Answer the following:

Describe Neutron, Horizon and Cinder services
 Networking service (Neutron) provides an API that allows users to build rich
 networking topologies and set up and define network connectivity. Openstack
 Horizon offers three versions of management dashboards: User, System and
 Setting Dashboards. Cinder is a Block Storage service for OpenStack. It virtualizes
 the management of block storage devices.

#### **Conclusions:**

In this activity, I learned the difference openstack services such as Neutron (Networking service), Horizon (Dashboard) and Cinder (Block Storage service). As we know the Openstack is built as a set of distributed services. These services communicate with each other and are responsible for the various function expected from virtualization/cloud management.