Name: Quizon, Nowell Gabriel C.	**Date Performed:** 12/13/2023
Course/Section: CPE31S5	**Date Submitted:** 12/14/2023
Instructor: Engr. Roman Richard	**Semester and SY:** 1st and 2023 - 2024

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)

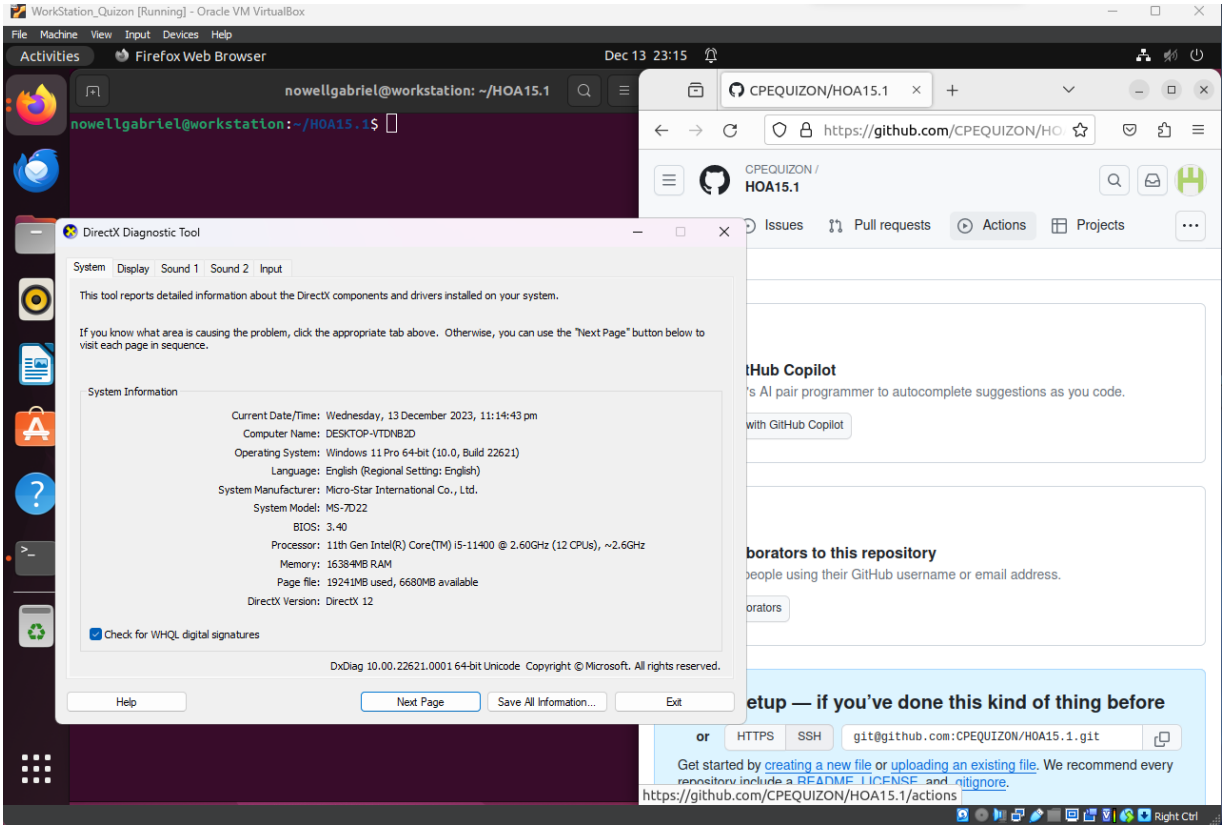
1x Ubuntu VM or Centos VM

4. Tasks

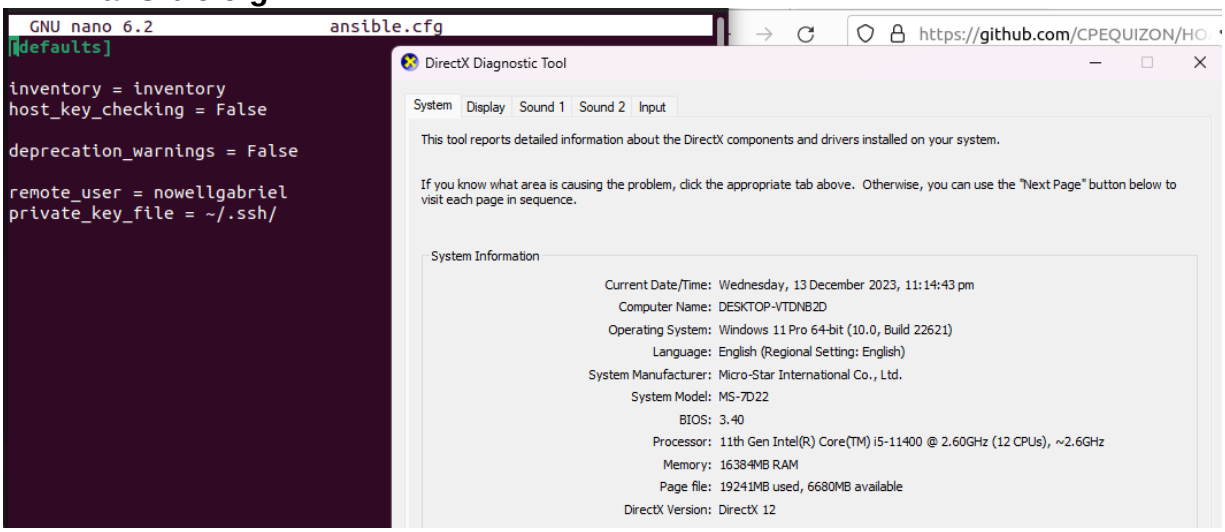
1. Create a new repository for this activity.
2. Create a playbook that converts the steps in the following items in https://docs.openstack.org/install-guide/
   a. Neutron
   b. Horizon
   c. Cinder
   d. Create different plays in installing per server type (controller, compute etc.) and identify it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

5. Output (screenshots and explanations)

- Create a new repository for this activity.

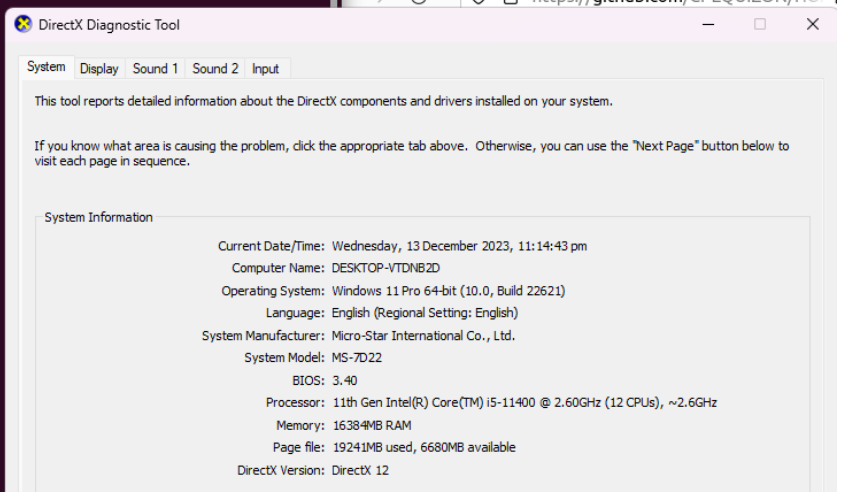


ansible.cfg



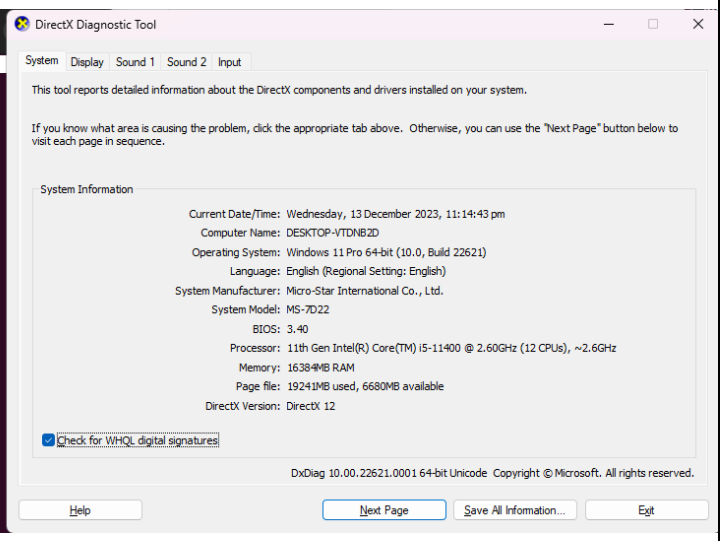
Inventory

```
GNU nano 6.2                    inventory
[cinder]
192.168.56.111

[horizon]
192.168.56.111

[neutron]
192.168.56.111
```



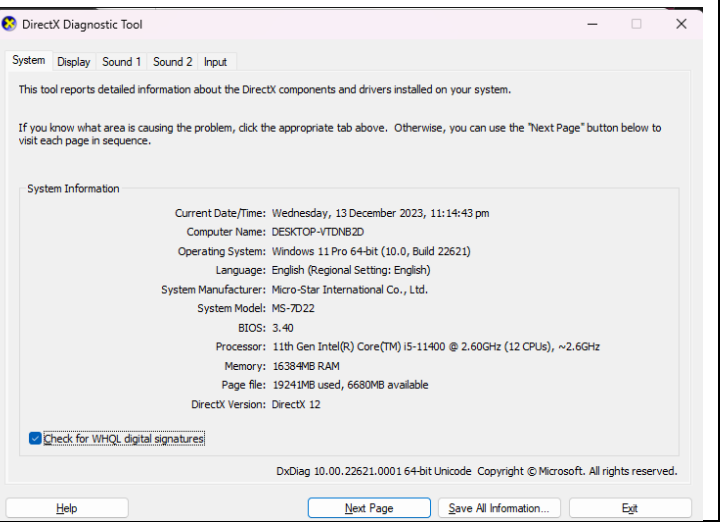
install_chn.yml

```
nowellgabriel@workstation: ~/HOA15.1
 GNU nano 6.2                install_chn.yml *
---
- hosts: neutron
  become: true
  roles:
    - role: neutron

- hosts: horizon
  become: true
  roles:
    - role: horizon

- hosts: cinder
  become: true
  roles:
    - role: cinder
```

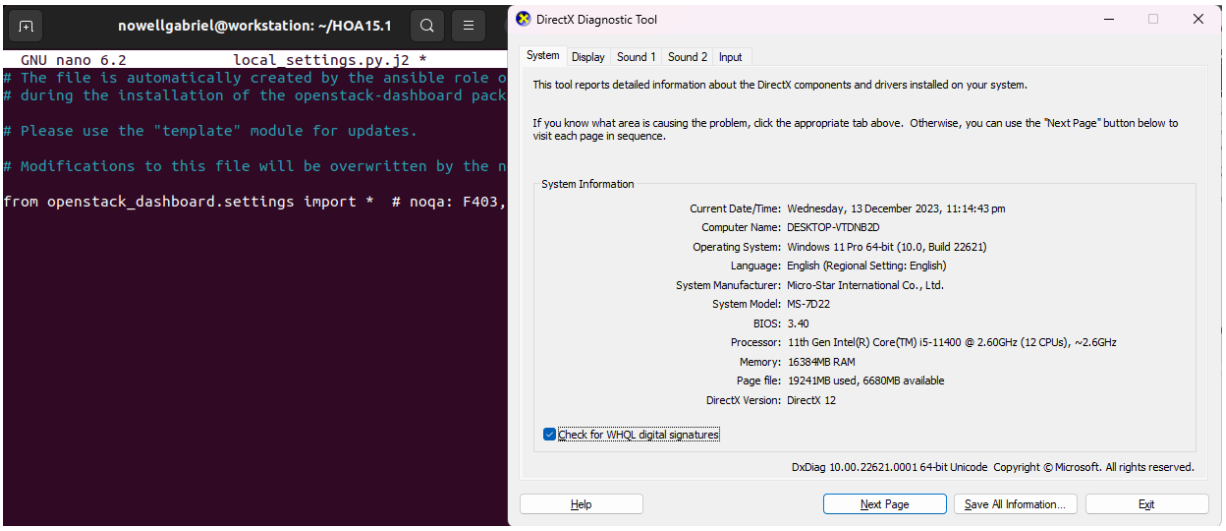


cinder.conf.j2

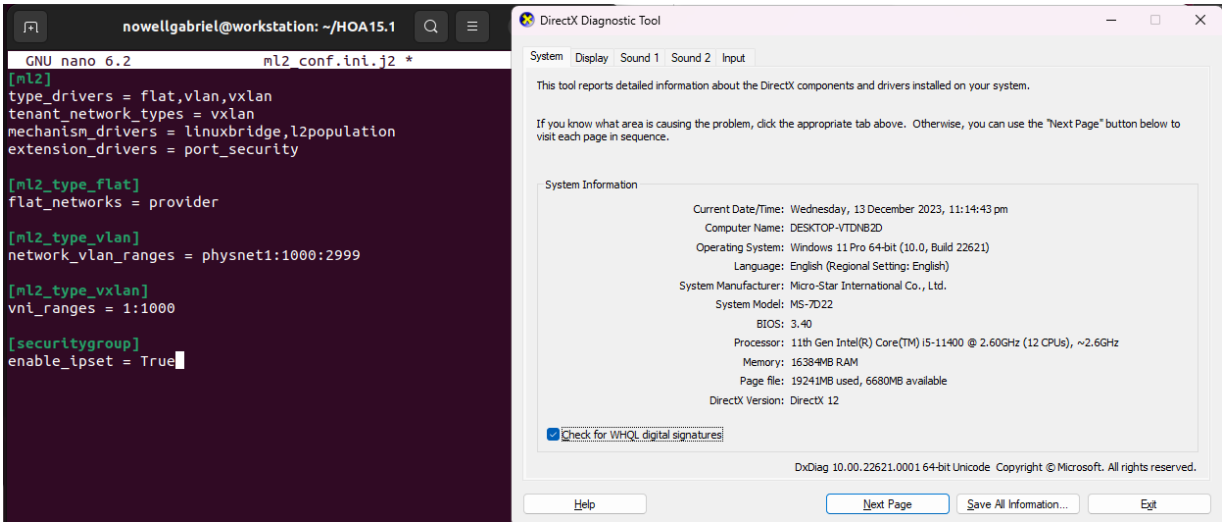
```
nowellgabriel@workstation: ~/HOA15.1
 GNU nano 6.2                cinder.conf.j2 *
DEFAULT]
transport_url = rabbit://guest:guest@localhost
auth_strategy = keystone

[database]
connection = sqlite:////var/lib/cinder/cinder.sqlite

[keystone_authtoken]
auth_uri = http://controller:5000
auth_url = http://controller:35357
memcached_servers = controller:11211
auth_type = password
project_domain_name = default
user_domain_name = default
project_name = service
username = cinder
password = CINDER_PASS

[oslo_concurrency]
lock_path = /var/lib/cinder/tmp
```



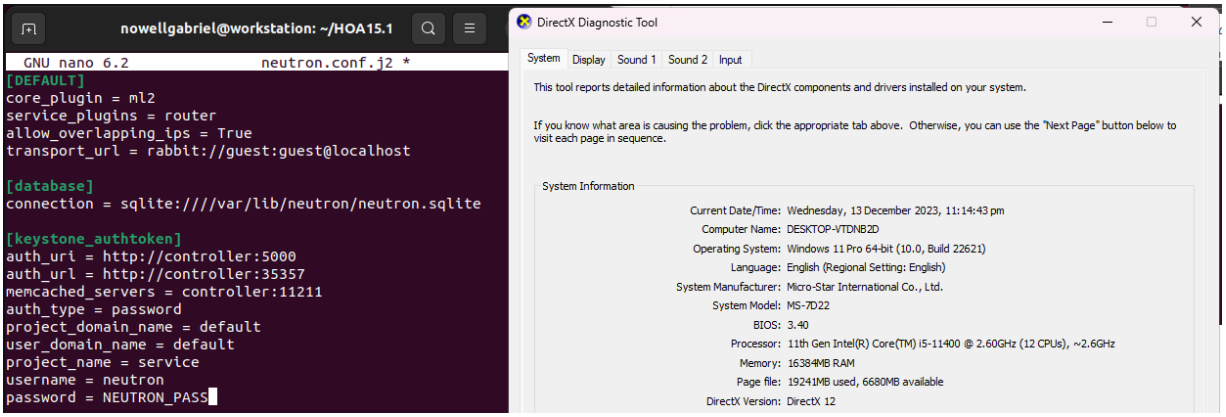
local_setting.py.j2



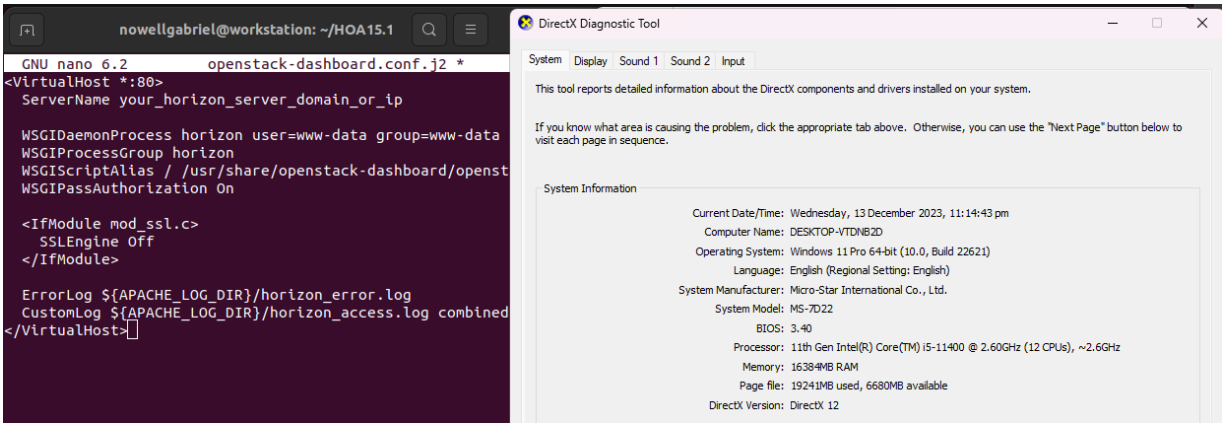
ml2_conf.ini.2



neutron.conf.j2

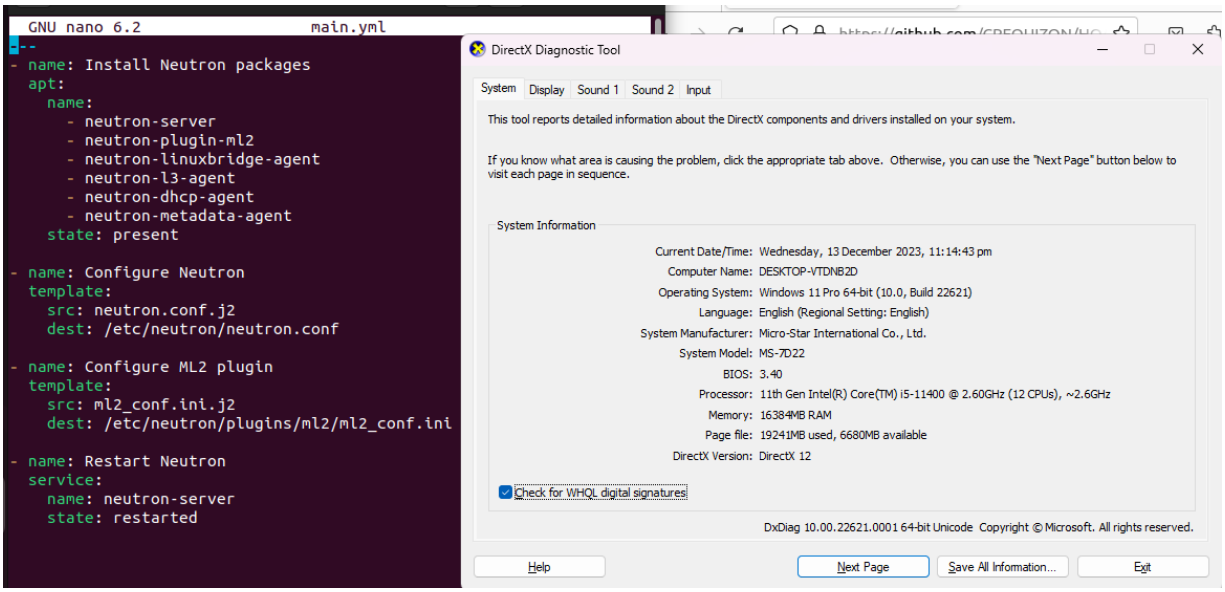


openstack-dashboard.conf.j2



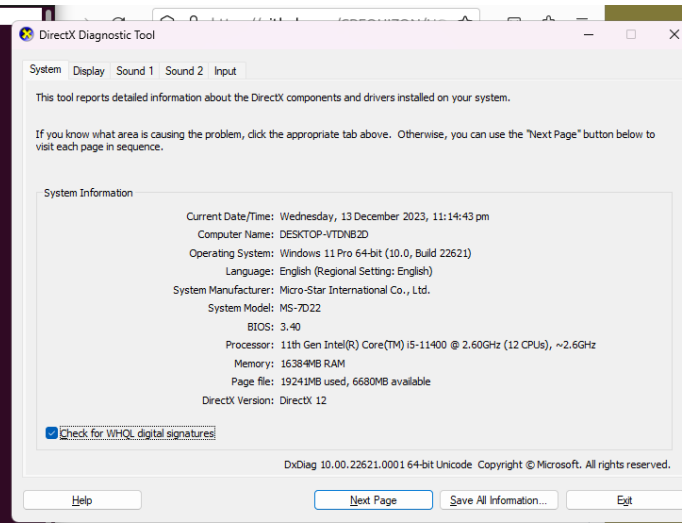
- Create a playbook that converts the steps in the following items in https://docs.openstack.org/install-guide/

a.) Neutron



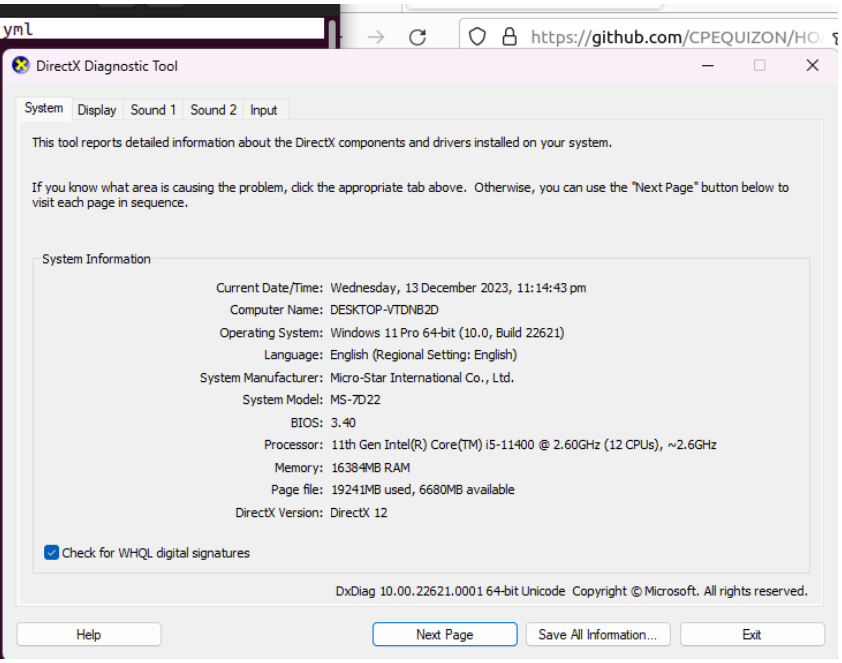
b.) Horizon

```
GNU nano 6.2                    main.yml
---
- name: Install Horizon packages
  apt:
    name:
      - openstack-dashboard
    state: present

- name: Configure Apache for Horizon
  template:
    src: openstack-dashboard.conf.j2
    dest: /etc/apache2/sites-available/openstack-dashboard.conf

- name: Configure Horizon settings
  template:
    src: local_settings.py.j2
    dest: /etc/openstack-dashboard/local_settings.py

- name: Restart Apache
  service:
    name: apache2
    state: restarted
```

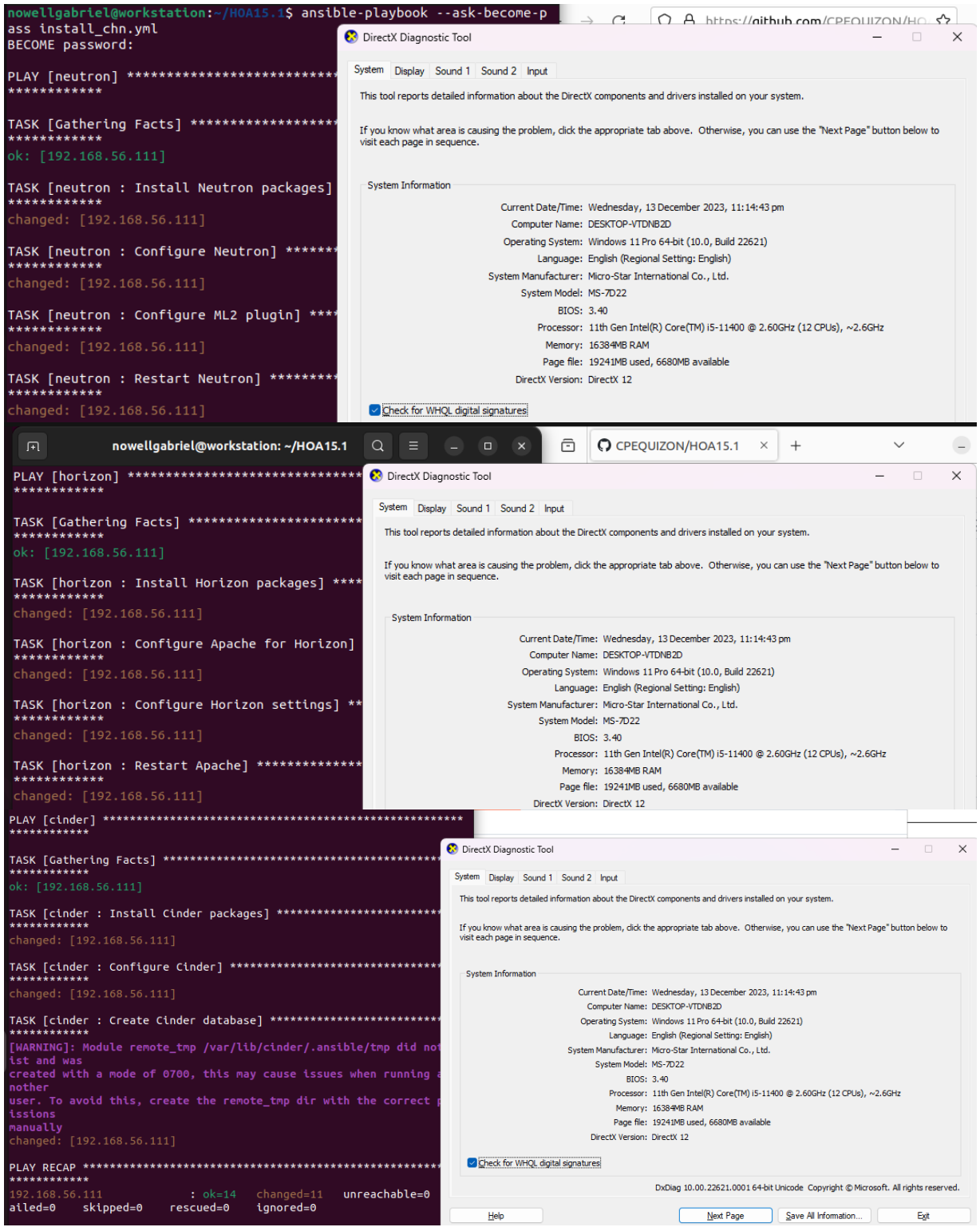


c.) Cinder

```
GNU nano 6.2                    main.yml
---
- name: Install Cinder packages
  apt:
    name:
      - cinder-api
      - cinder-scheduler
      - cinder-volume
    state: present

- name: Configure Cinder
  template:
    src: cinder.conf.j2
    dest: /etc/cinder/cinder.conf

- name: Create Cinder database
  command: cinder-manage db sync
  become_user: cinder
```

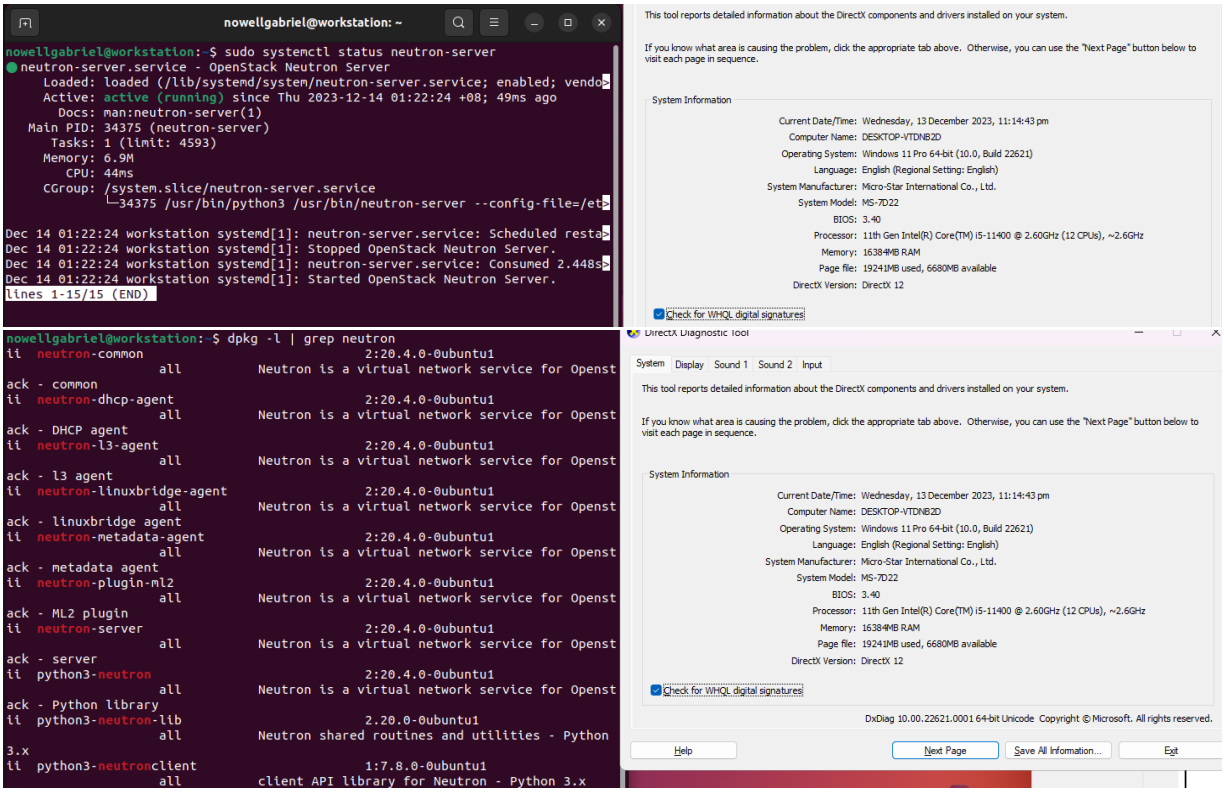


Installation

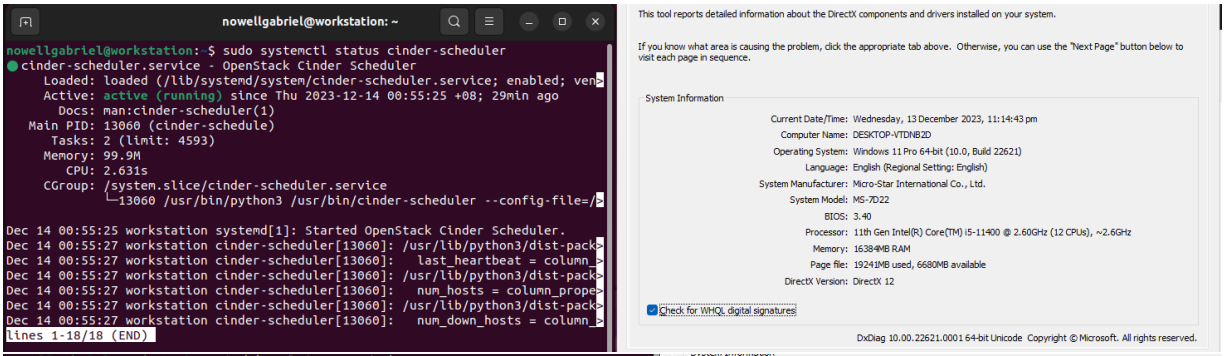


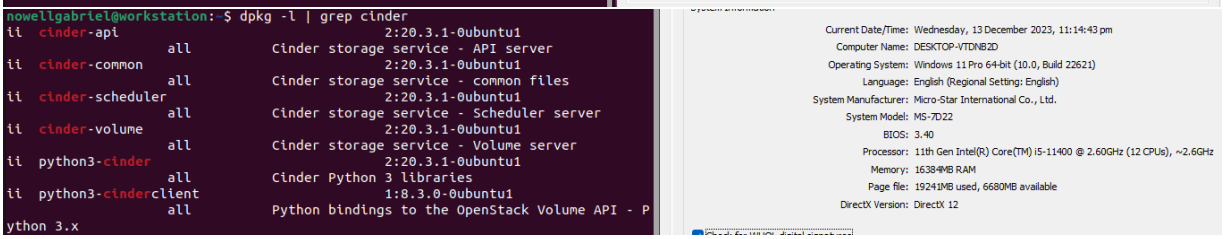
Proof:

Neutron

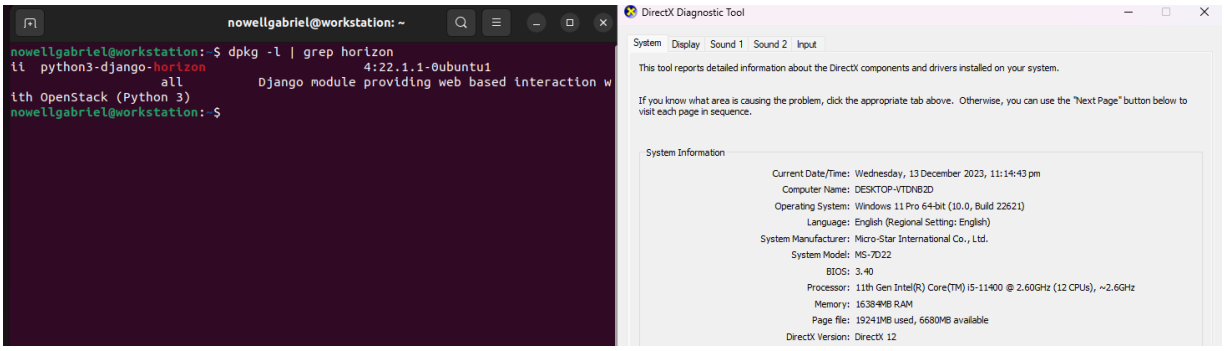


Cinder

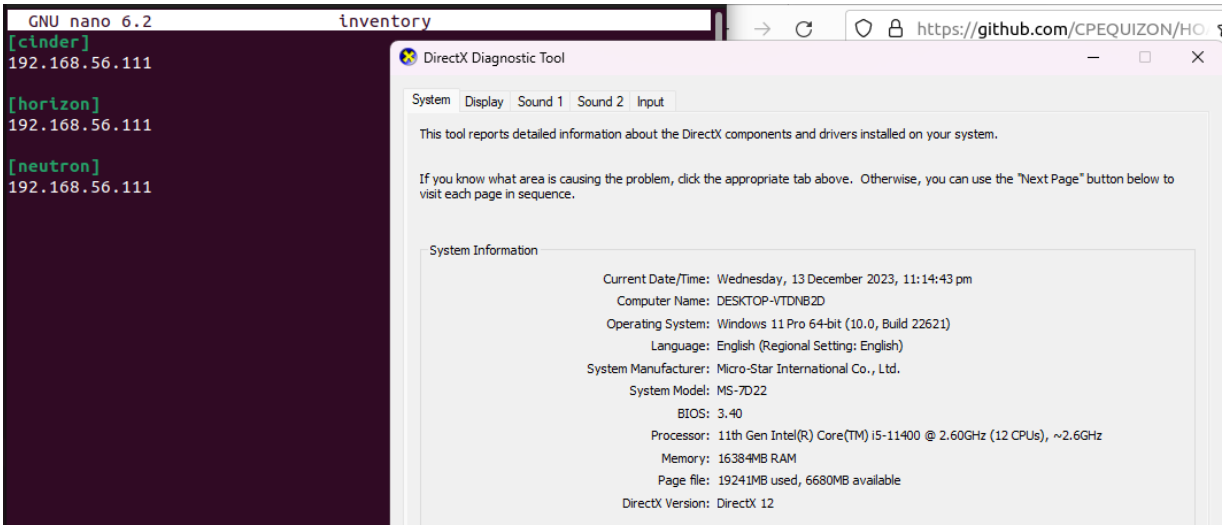




Horizon



d.) Create different plays in installing per server type (controller, compute etc.) and identify it as a group in the Inventory file



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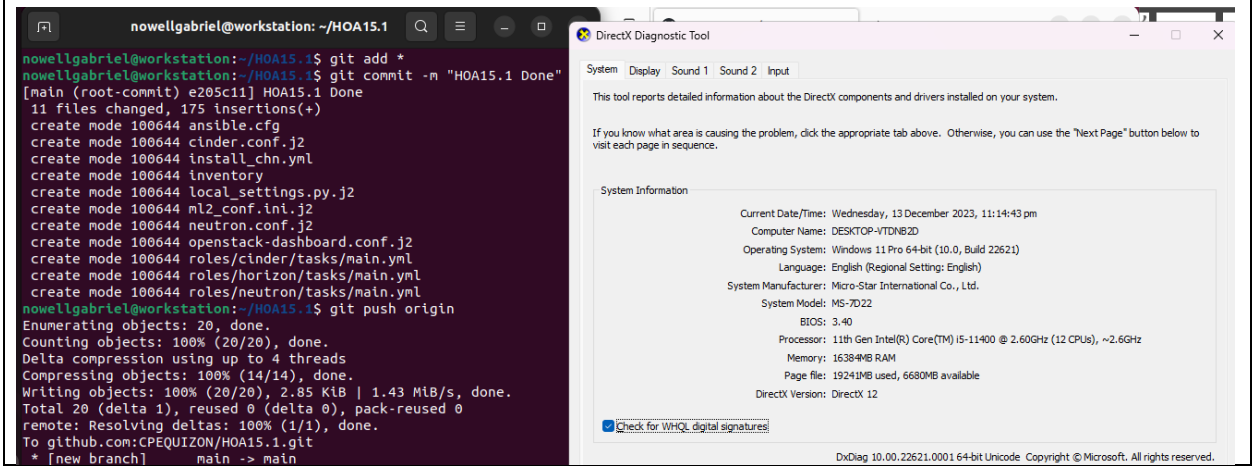

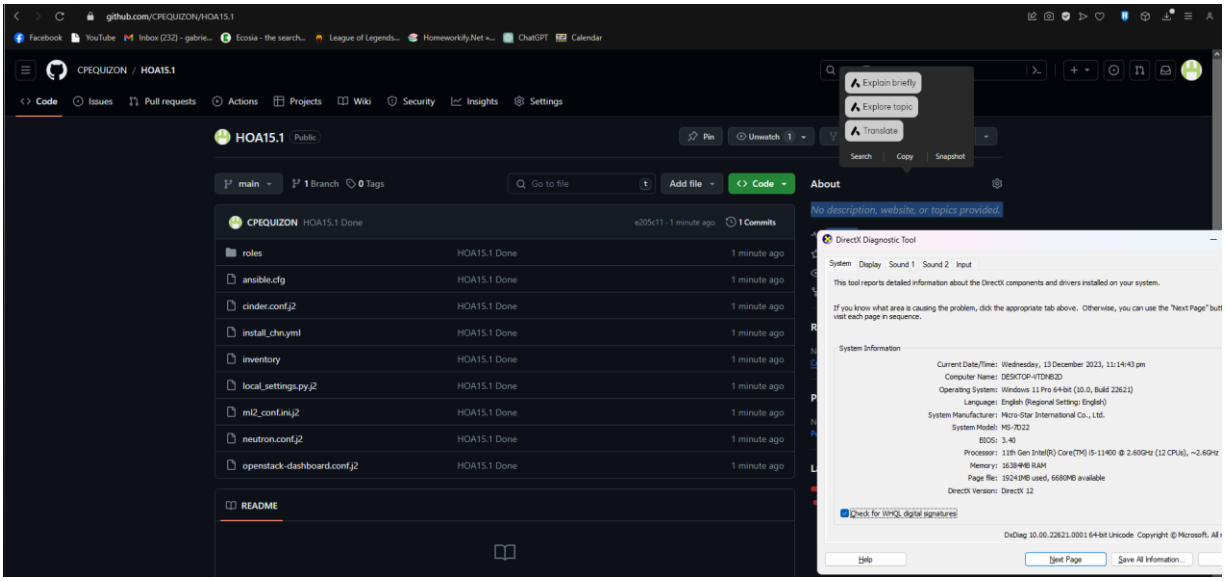

Reflections:

Answer the following:

1. Describe Neutron, Horizon and Cinder services
    - Neutron, Horizon, and Cinder are key services within the OpenStack cloud computing platform. Neutron, or the Networking service, enables the creation and management of diverse network architectures, facilitating data flow between virtual machines. Horizon serves as the web-based dashboard, providing a graphical user interface for users and administrators to easily manage and monitor their cloud resources. Cinder, the Block Storage service, focuses on storage needs by offering a mechanism to manage block storage volumes that can be attached to virtual machines, enhancing scalability and persistence. Together, these services contribute to the flexibility, accessibility, and efficiency of OpenStack cloud infrastructure.

Conclusions:

- **This activity is about installing the three services which are Neutron, Horizon and Cinder services. I used all the learnings from the past activities efficiently install these services without error. I used the source provided in creating and building the playbook. In conclusion, there are plenty of ways in automating the installation of different services efficiently using many techniques.**