Name: Shaniah Rose Hope M. Sumaoang	Date Performed: December 1, 2023
Course/Section: CPE 232-CPE31S5	Date Submitted: December 2, 2023
Instructor: Engr. Roman Richard	Semester and SY: 1st Sem. 23-24

Activity 13: OpenStack Prerequisite Installation

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)

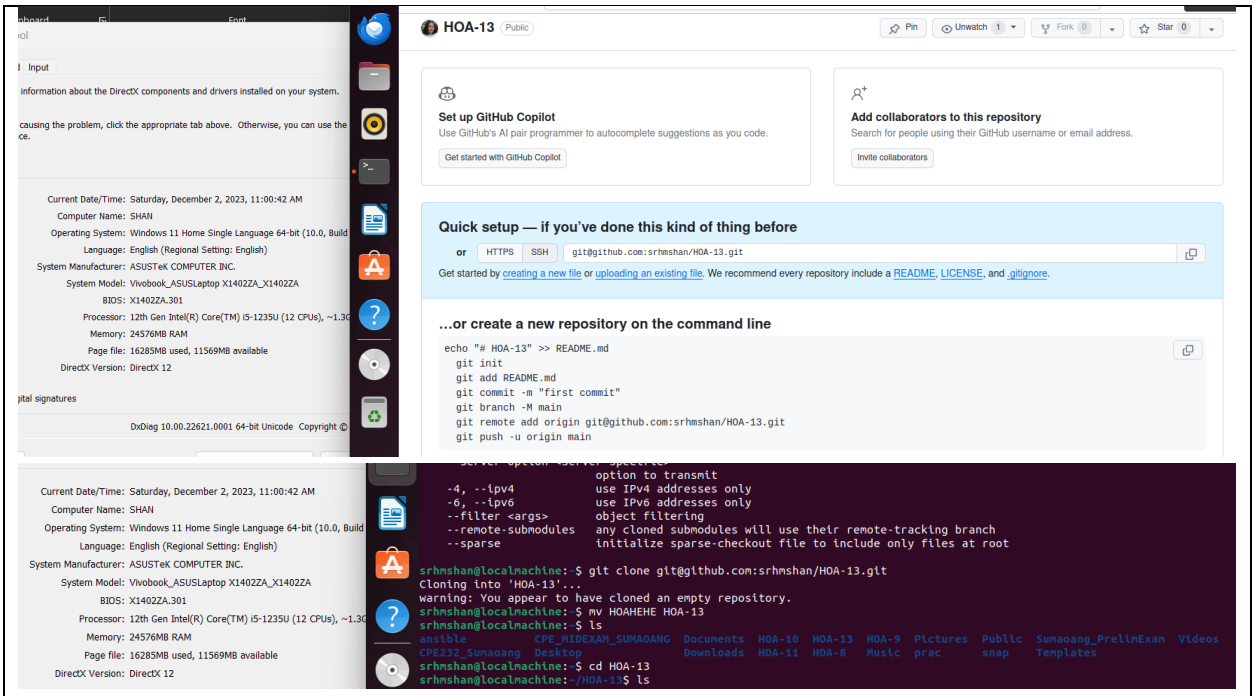
1x Ubuntu VM or Centos VM

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. NTP
    b. OpenStack packages
    c. SQL Database
    d. Message Queue
    e. Memcached
    f. Etcd
    g. Create different plays in installing per server type (controller, compute etc.) and identify it as a group in Inventory file.
    h. Add, commit and push it to your GitHub repo.

5. Output (screenshots and explanations)

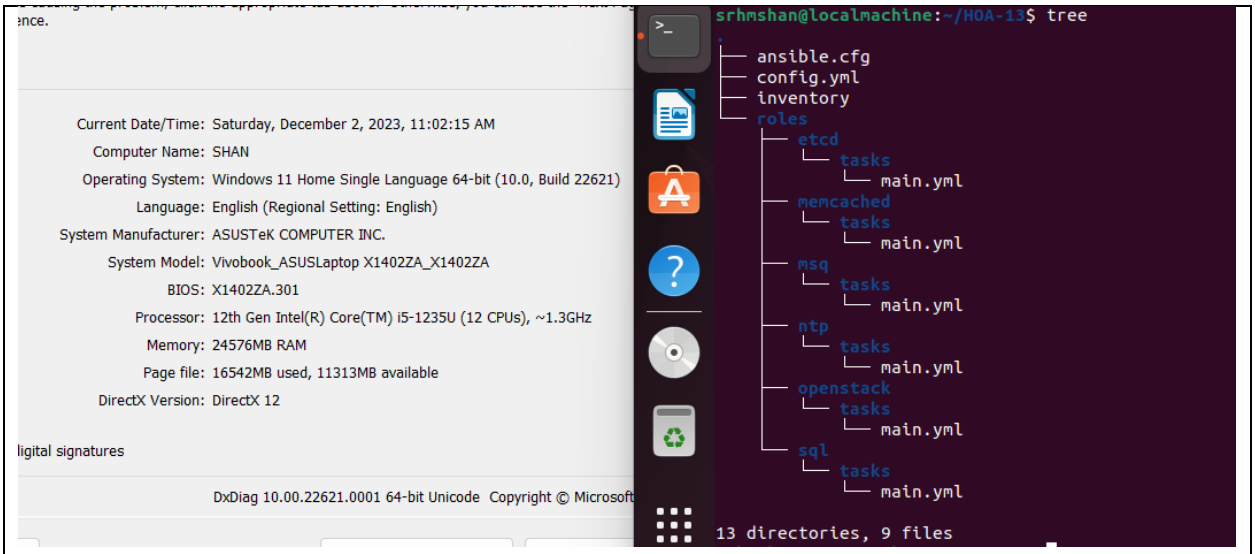
1. Create a new repository for this activity.



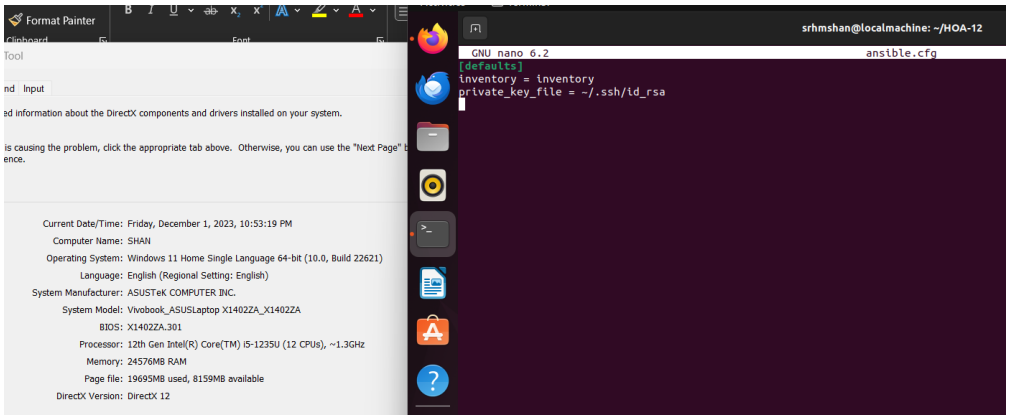
I have created a new repository named “HOA-13” and cloned it to my workstation.

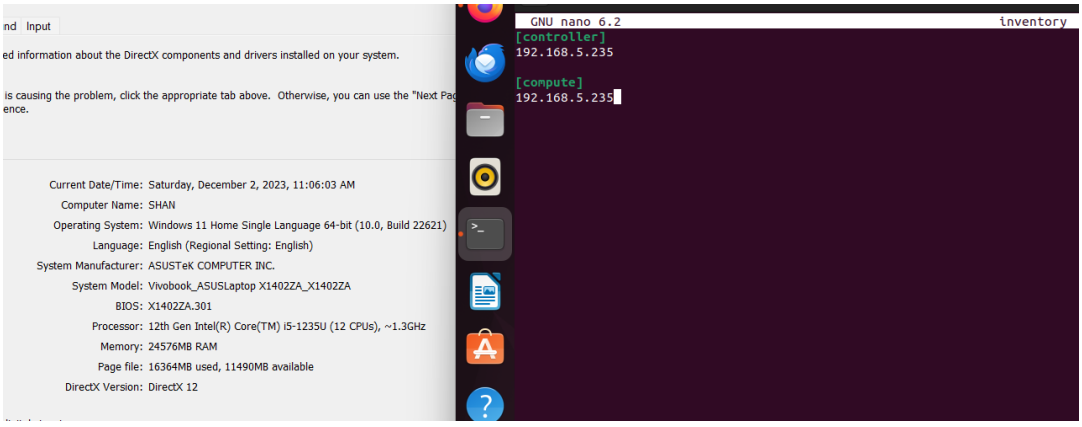
2. Create a playbook that converts the steps in the following items in https://docs.openstack.org/install-guide/

a. NTP
b. OpenStack packages
c. SQL Database
d. Message Queue
e. Memcached
f. Etcd
g. Create different plays in installing per server type (controller, compute etc.) and identify it as a group in Inventory file.

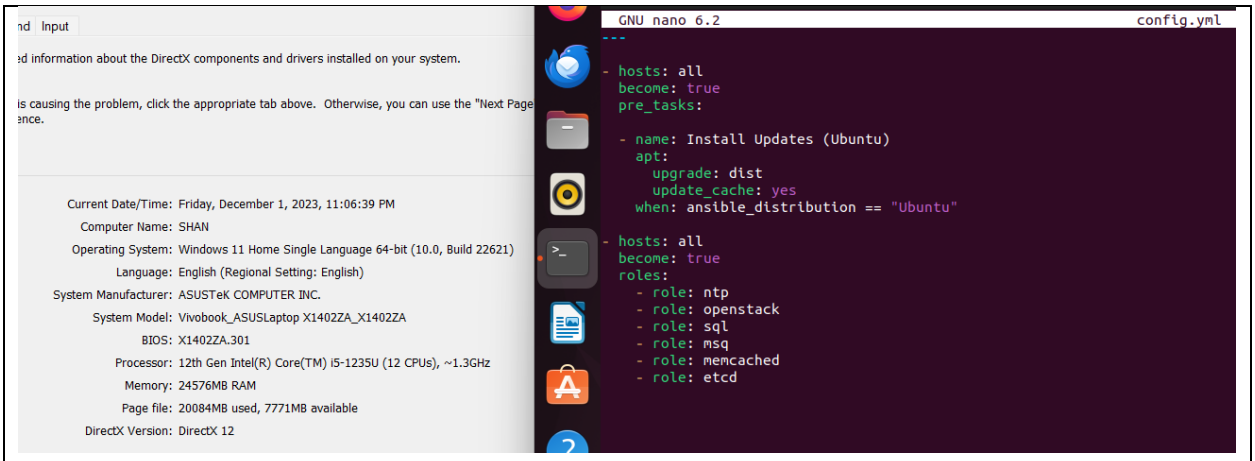


I used the “tree” command to show the HOA-13 directory’s contents. This includes the ansible.cfg and inventory files, as well as the config.yml playbook. I also added the roles in which it is named corresponding to the ones that I put in config.yml.



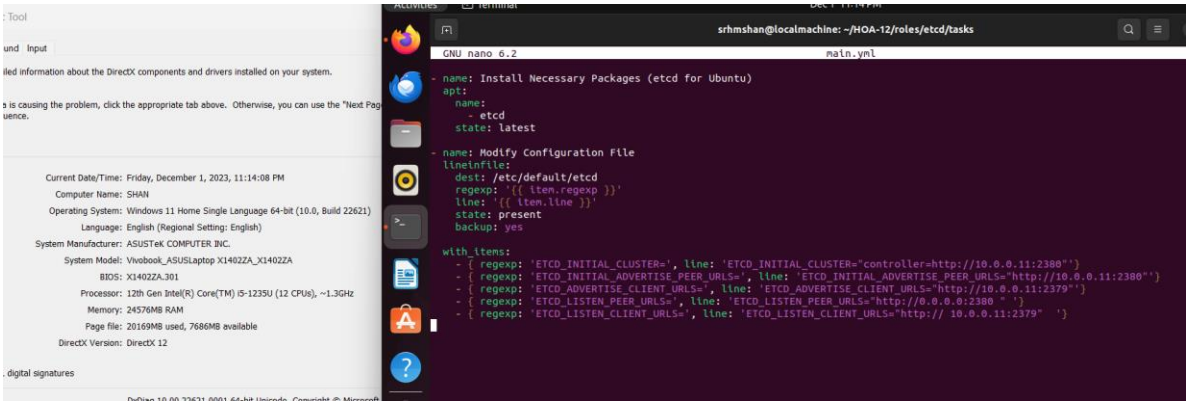


These are the contents of my ansible.cfg and inventory files.

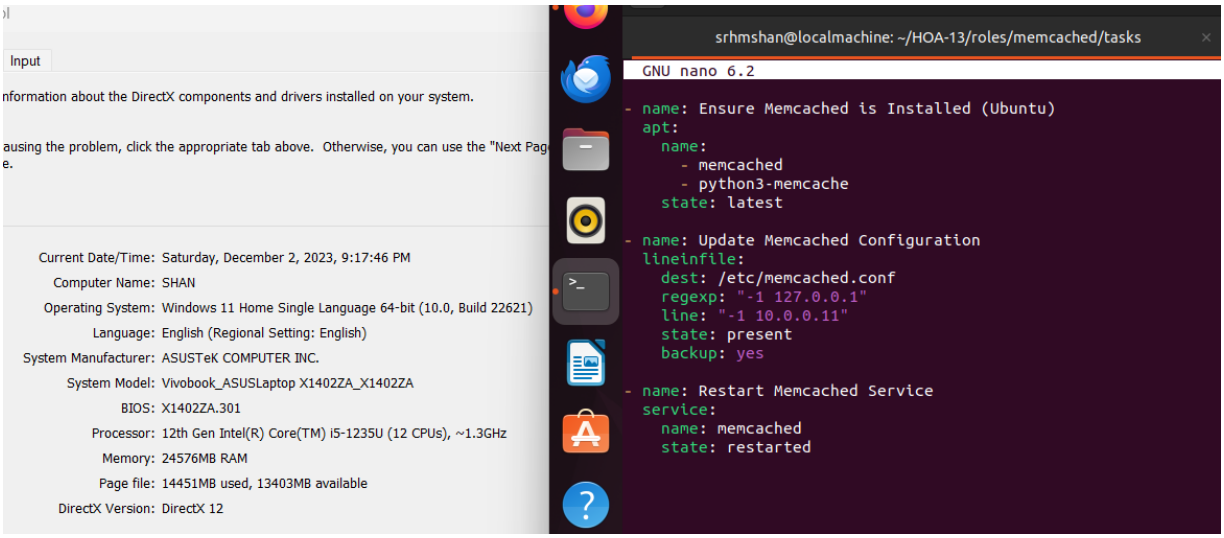


The contents of config.yml are displayed above.

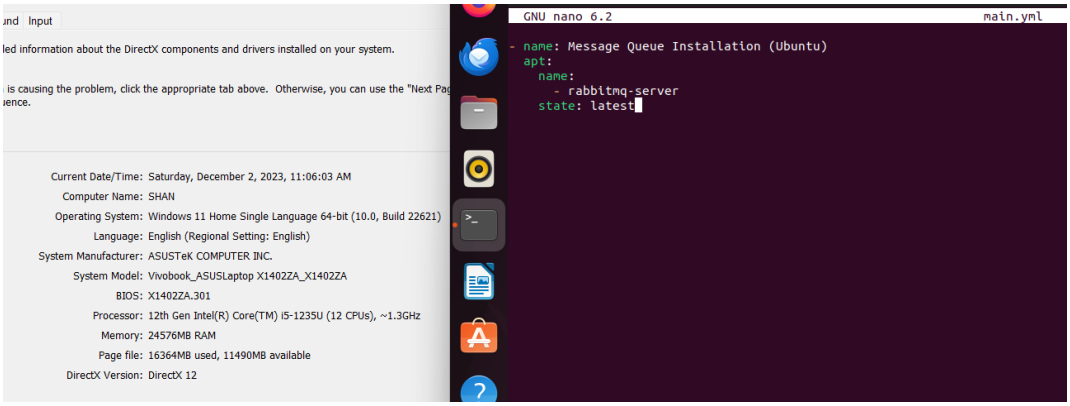
Etcd:



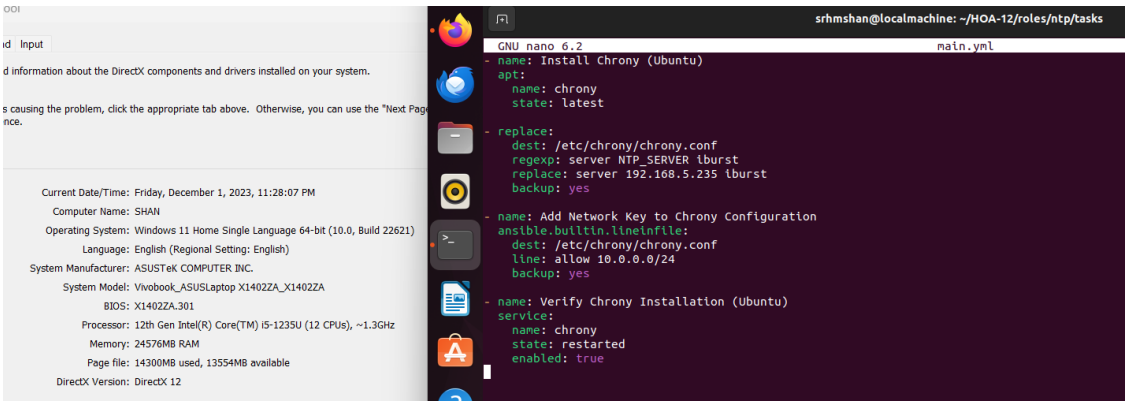
Memcached:



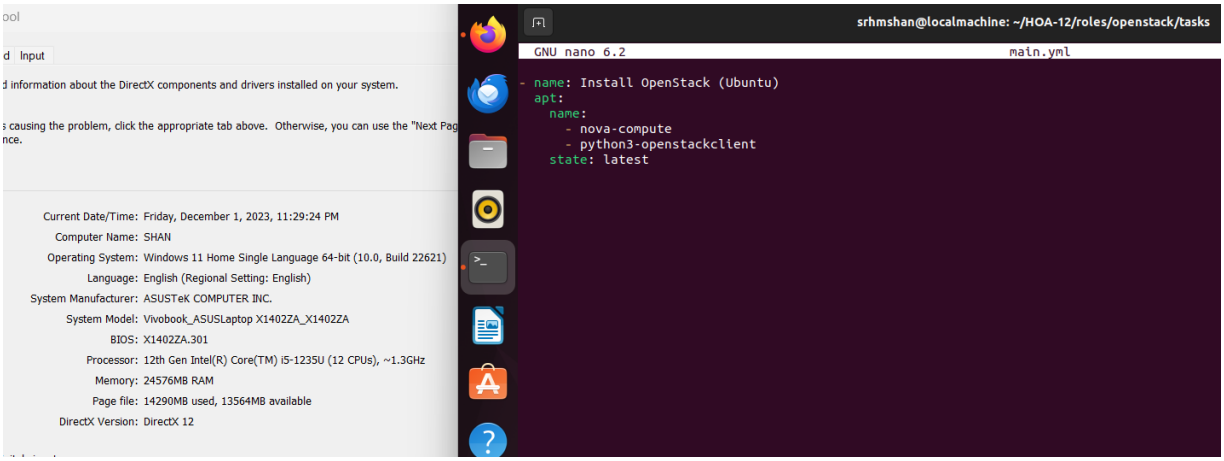
Message Queue:



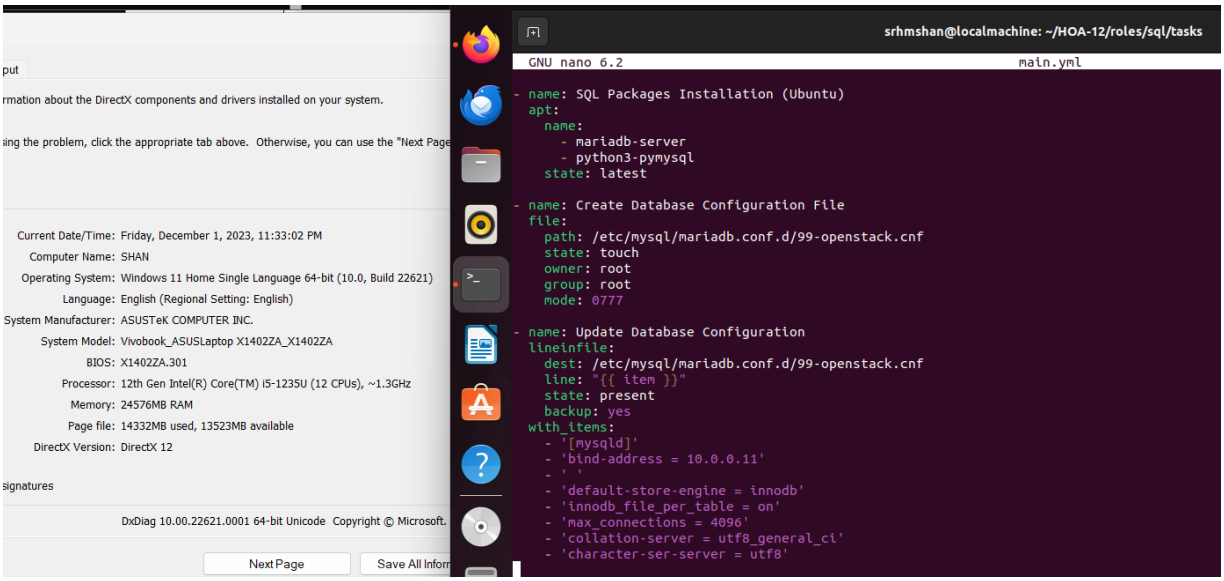
NTP:

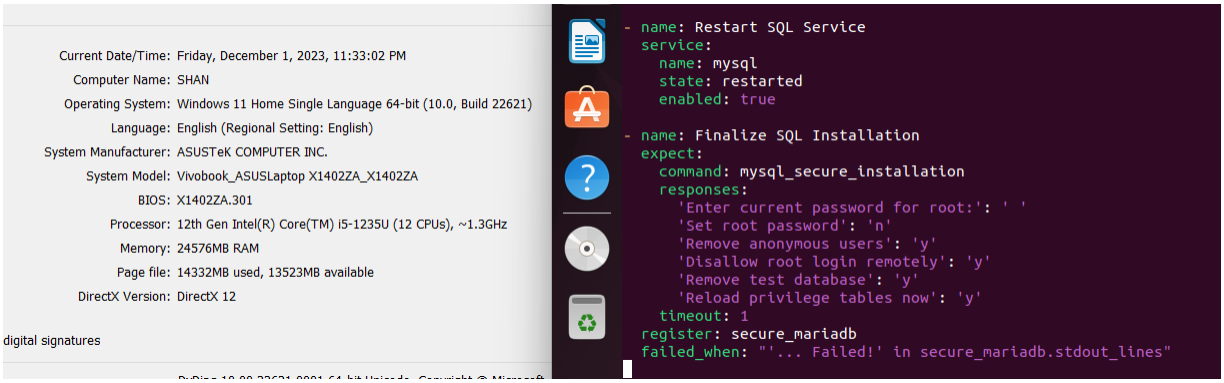


Openstack:

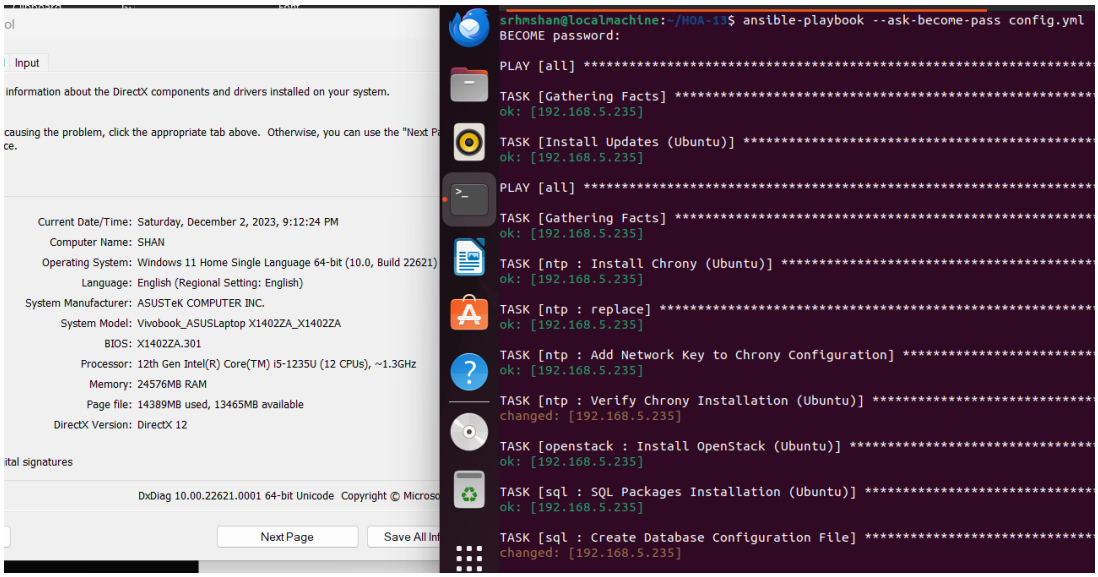


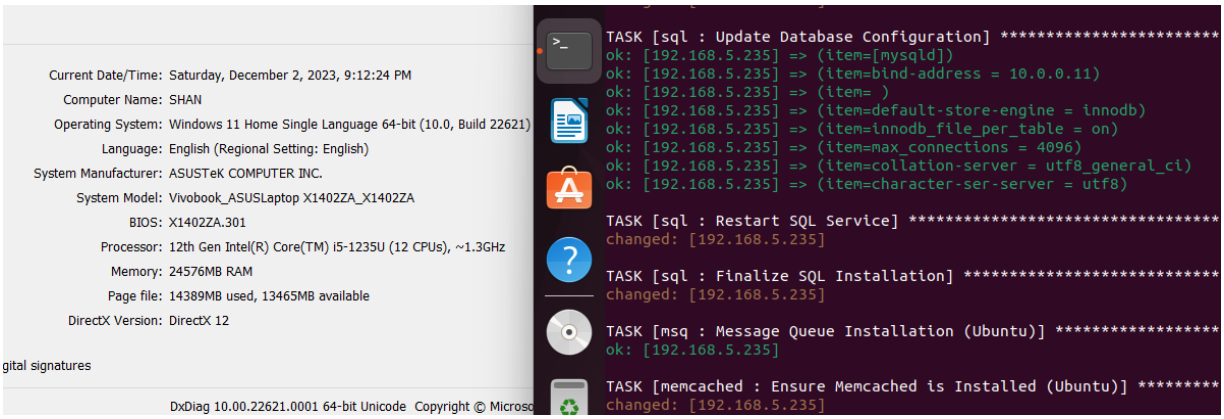
SQL:

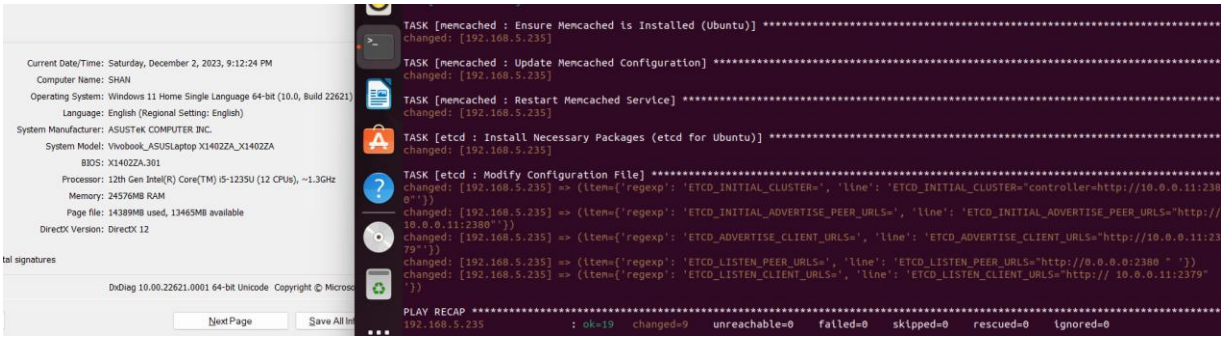




Running “config.yml”

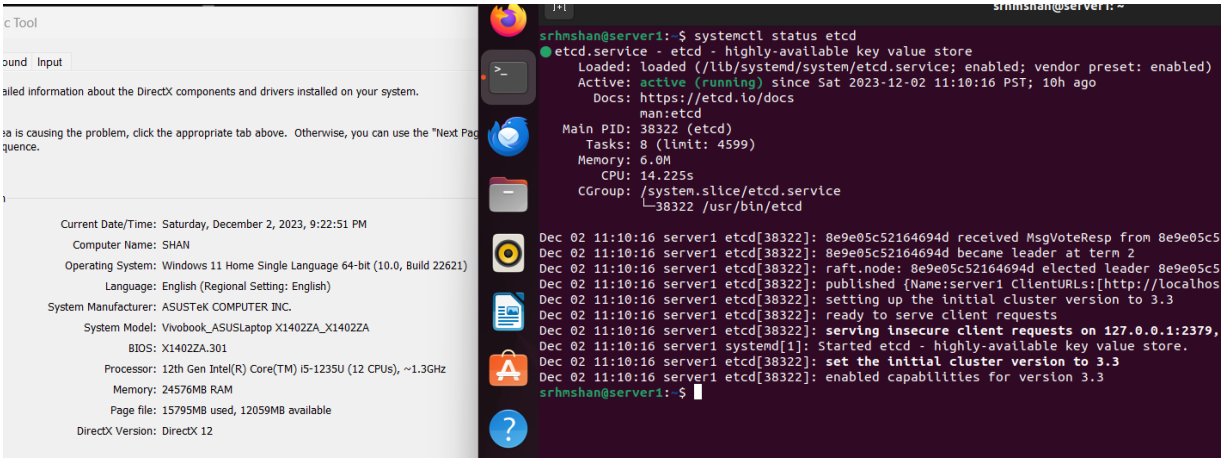




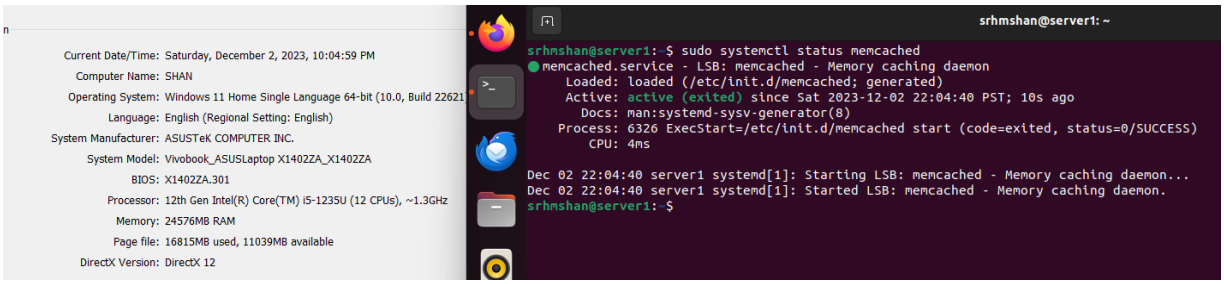


Verification of successful installations:

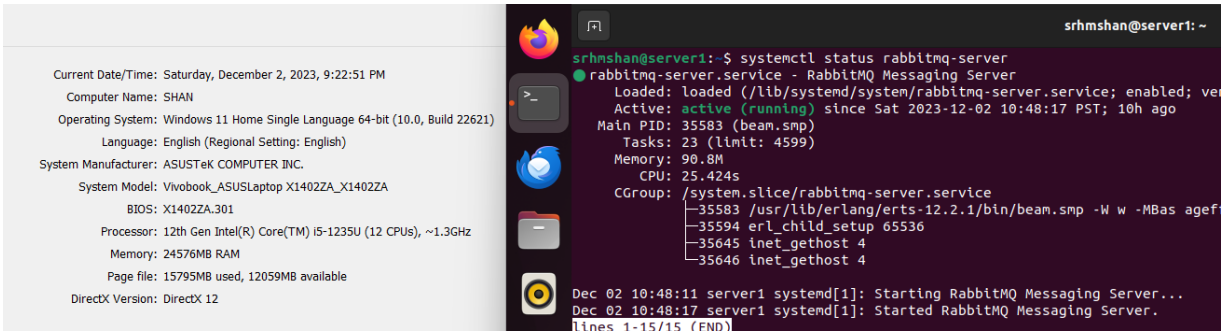
Etcd:



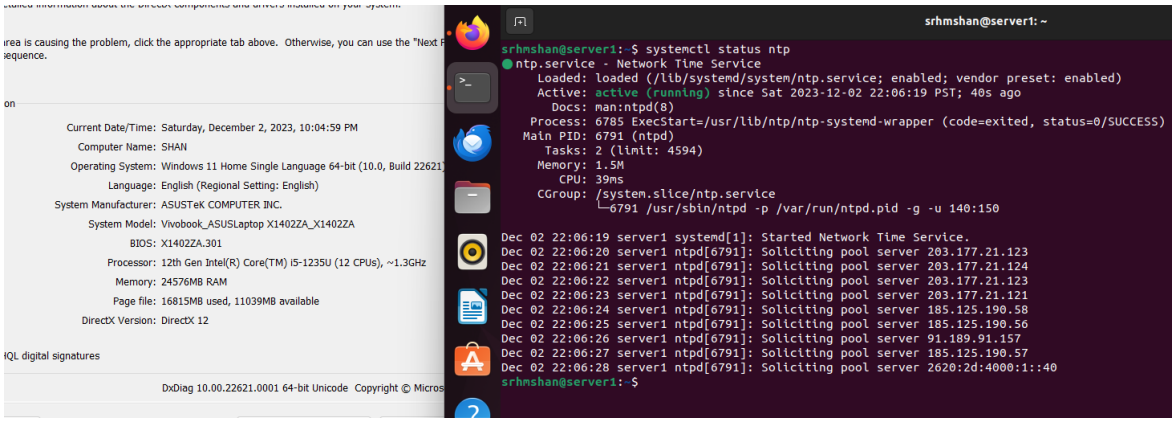
Memcached:



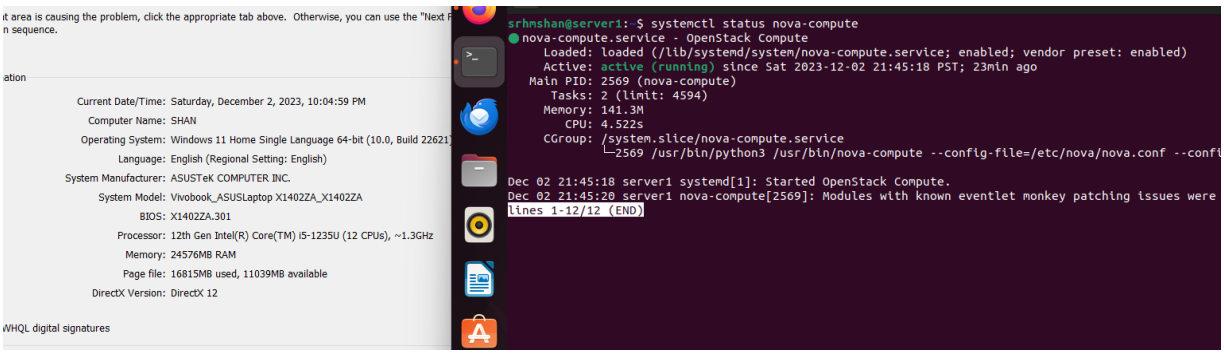
Message Queue:



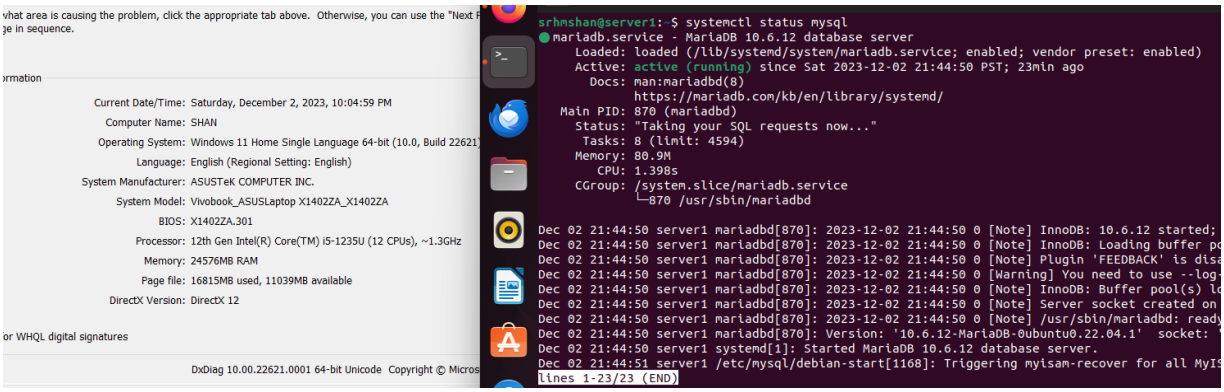
NTP:



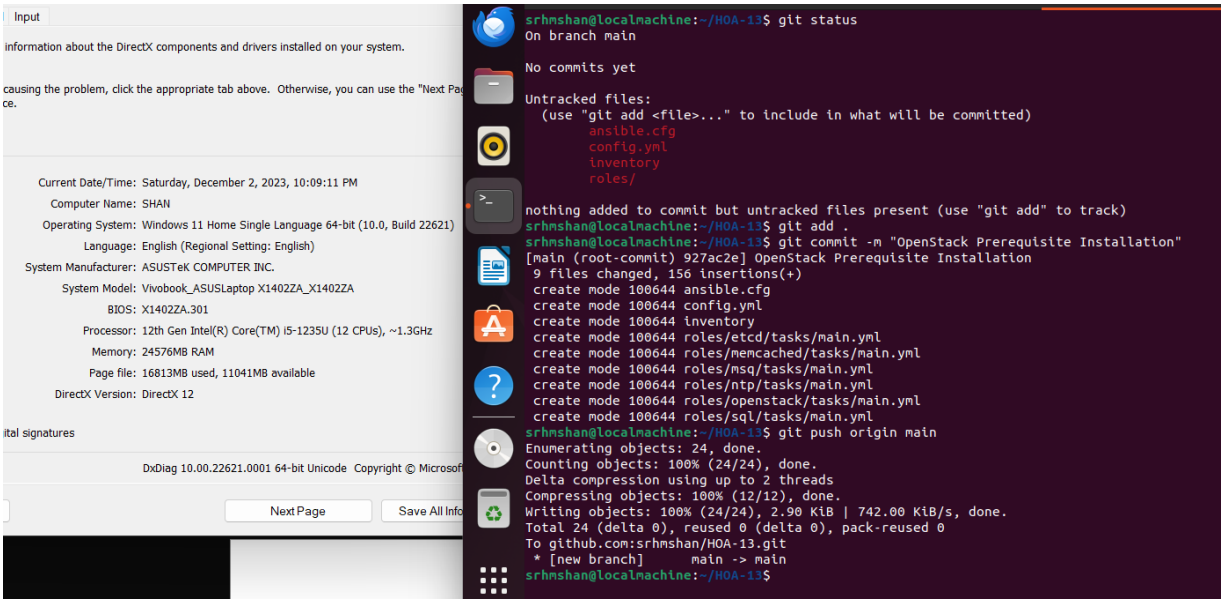
OpenStack:



SQL:



h. Add, commit and push it to your GitHub repo.



https://github.com/srhmshan/HOA-13

Reflections:

Answer the following:

1. What are the benefits of implementing OpenStack?

The benefits of using OpenStack allows for the adjustment of resources which can save costs by utilizing hardware and reducing the dependency on a single vendor. Its adaptable structure consists of services that can be customized to suit needs. Moreover, as an open-source platform, OpenStack promotes collaboration and encourages innovation. In addition, to its ability to integrate with technologies

OpenStack remains a choice for organizations looking for a cloud platform that provides flexibility and openness to meet their unique requirements among different options available, in the market.

Conclusions:

In this activity, I began by creating a repository called "HOA 13" and an Ansible playbook ("config.yml") to systematically install the necessary components, for OpenStack. The playbook methodically handled aspects like NTP OpenStack packages, SQL Database, Message Queue, Memcached and Etcd. It seamlessly incorporated installation approaches based on the type of server through inventory groups. To showcase what I have learned in Ansible, I provided verification for each installation using screenshots and explanations. In my analysis, I emphasized the benefits of implementing OpenStack focusing on its flexibility cost savings well as its collaborative and innovative nature. By committing to version control practices, I successfully added, committed and pushed the playbook to the GitHub repository. This demonstrates my approach to deployment and highlights my technical competence in utilizing Ansible.