Name: Bernice M. **Peña**	**Date Performed:** 11/30/2023
Course/Section: Managing Enterprise Servers / CPE31S5	**Date Submitted:** 12/02/2023
Instructor: Engr. Roman Richard	**Semester and SY:** 1st, SY 2023-2024

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

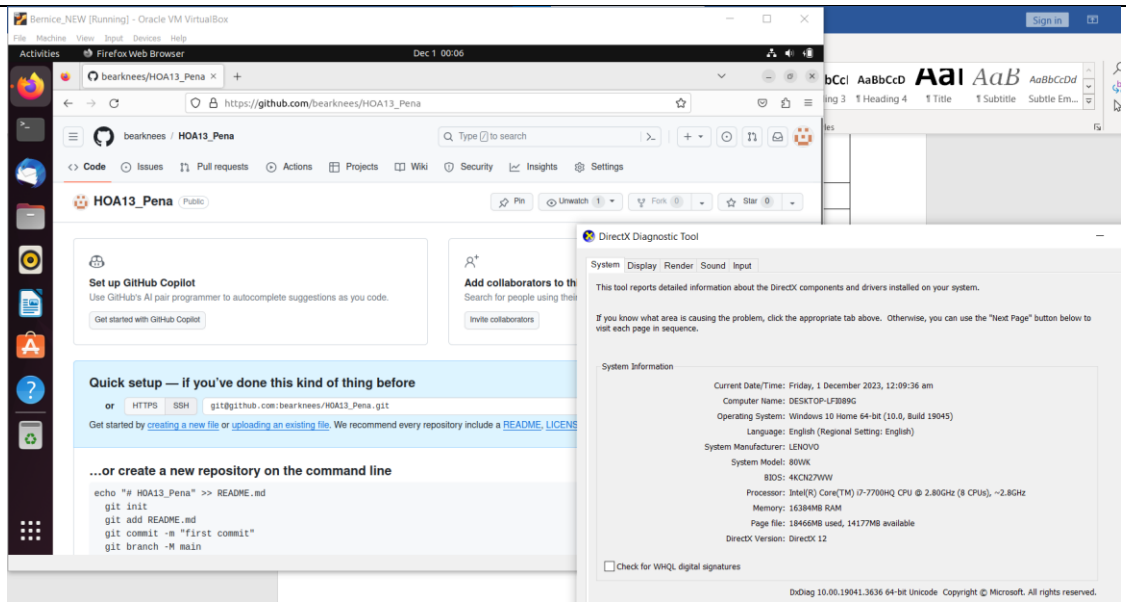
Oracle VirtualBox (Hypervisor)

1x Ubuntu VM or Centos VM

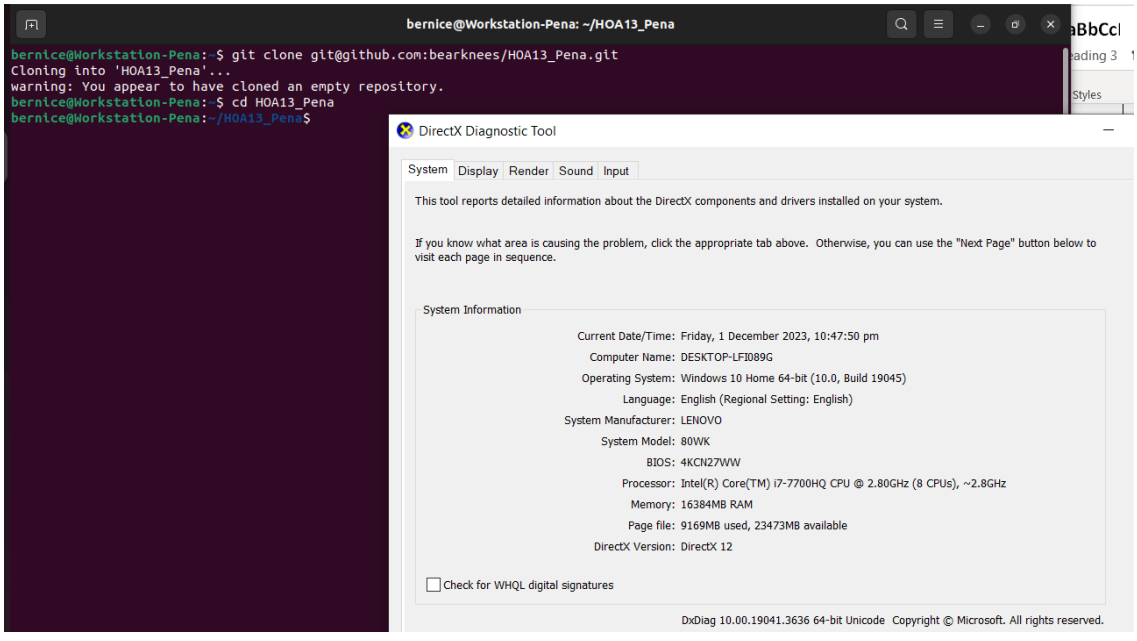
4. Tasks

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.

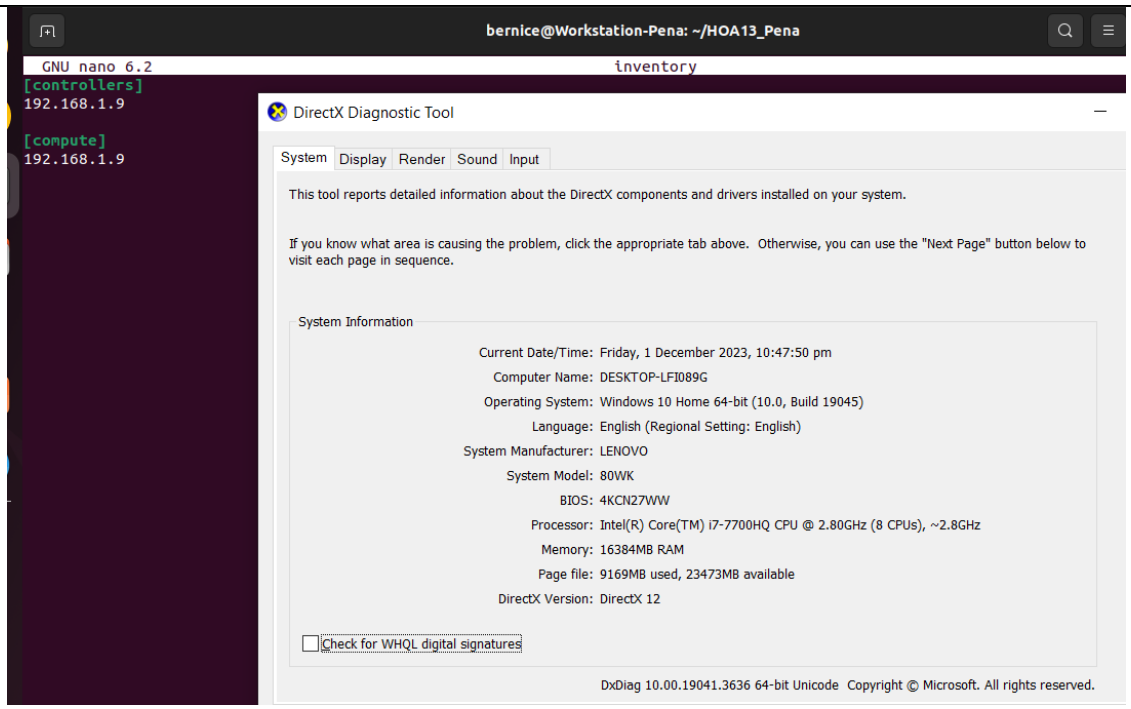
5. Output (screenshots and explanations)



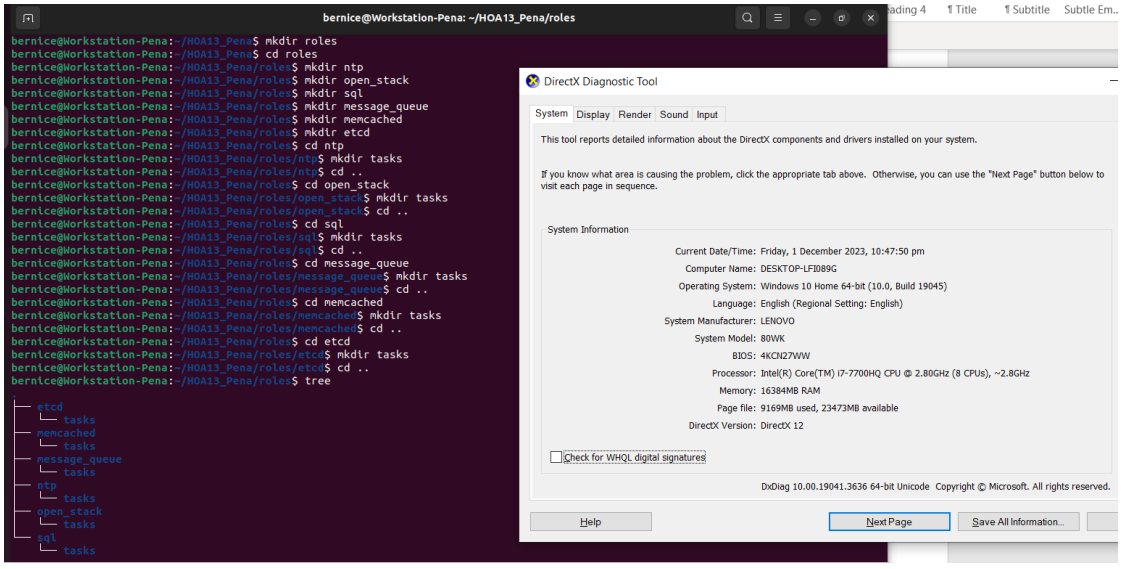
I created a GitHub repository named HOA13_Pena



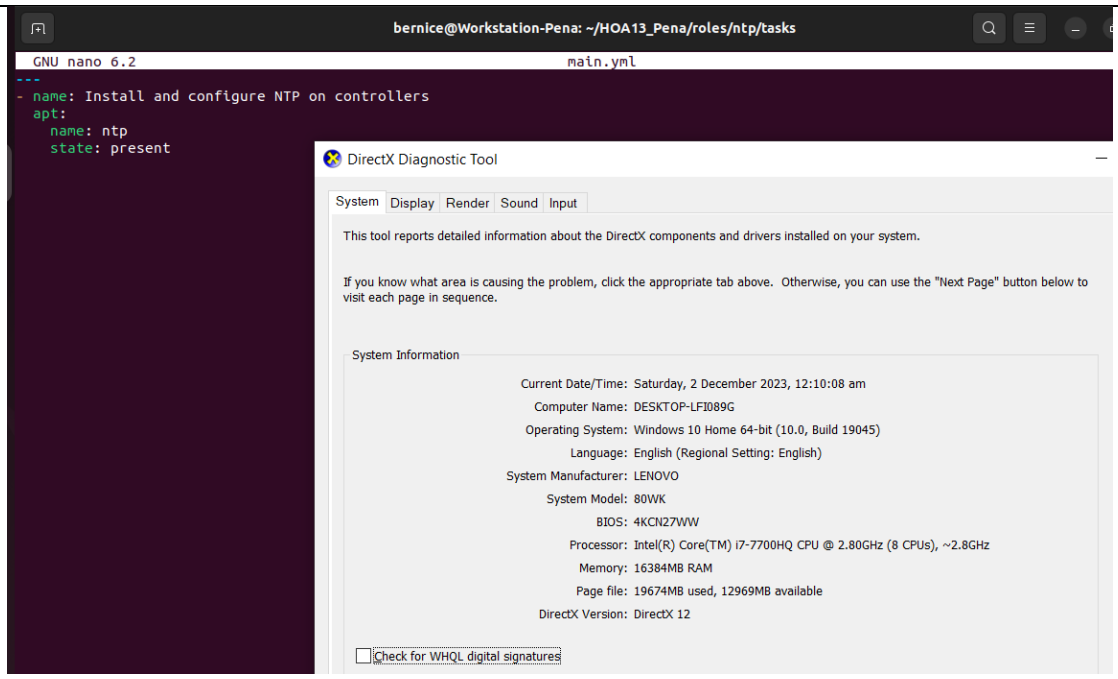
Then I cloned it in my ubuntu machine



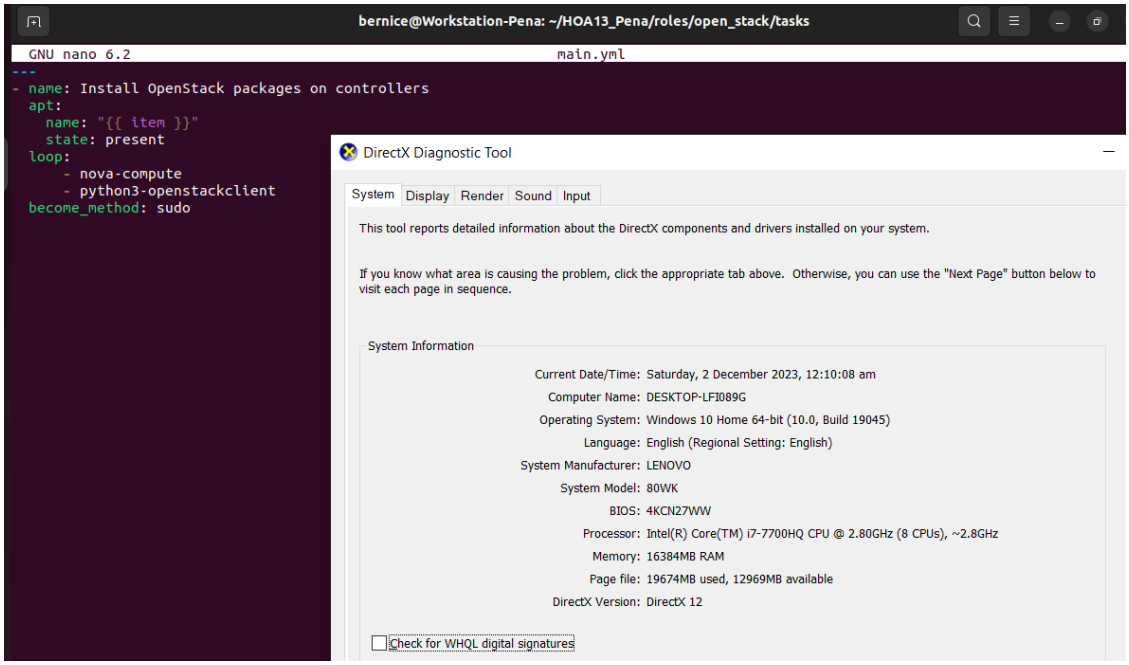
I created and inventory for the servers that I'll be using for the installation process. I used my ubuntu server 3 for controller and compute



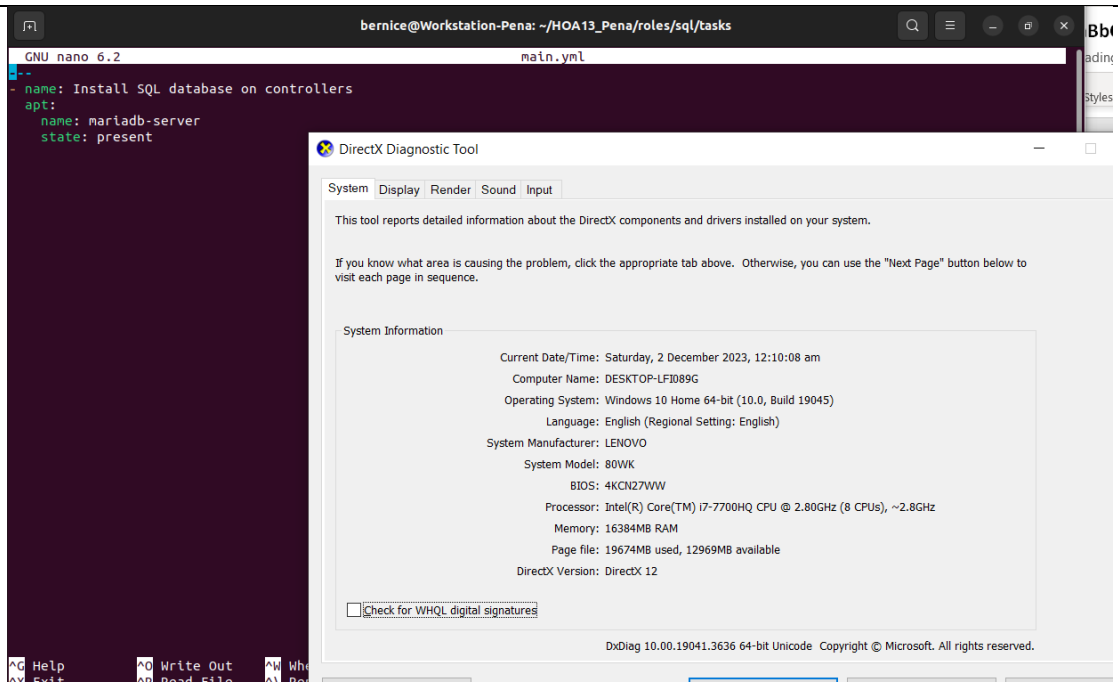
After creating the roles directory, I created more directories for specific tasks to install inside the roles directory



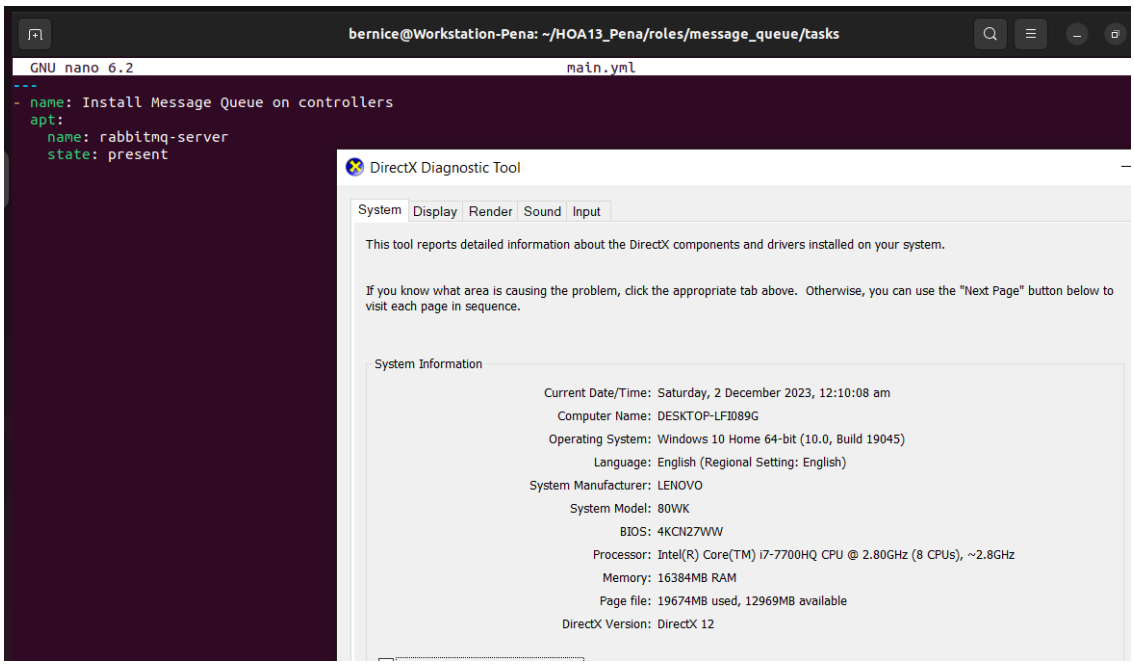
Inside my ntp/tasks directory, I created main.yml for the installation of NTP



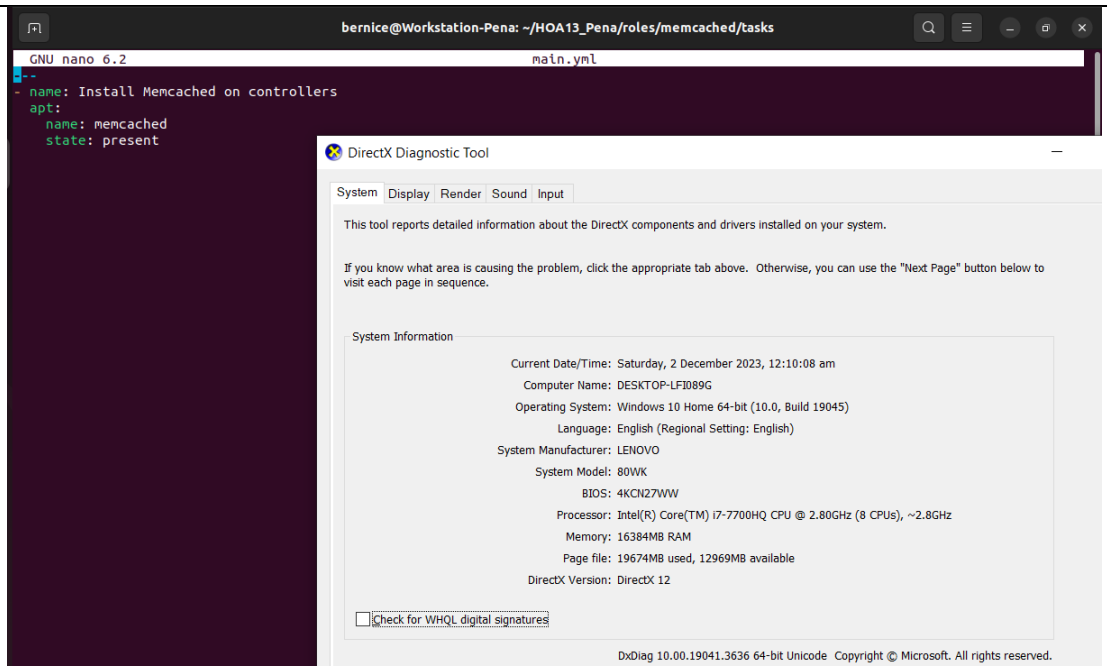
I did the same thing for open_stack directory, I created main.yml and its content is the installation of OpenStack packages



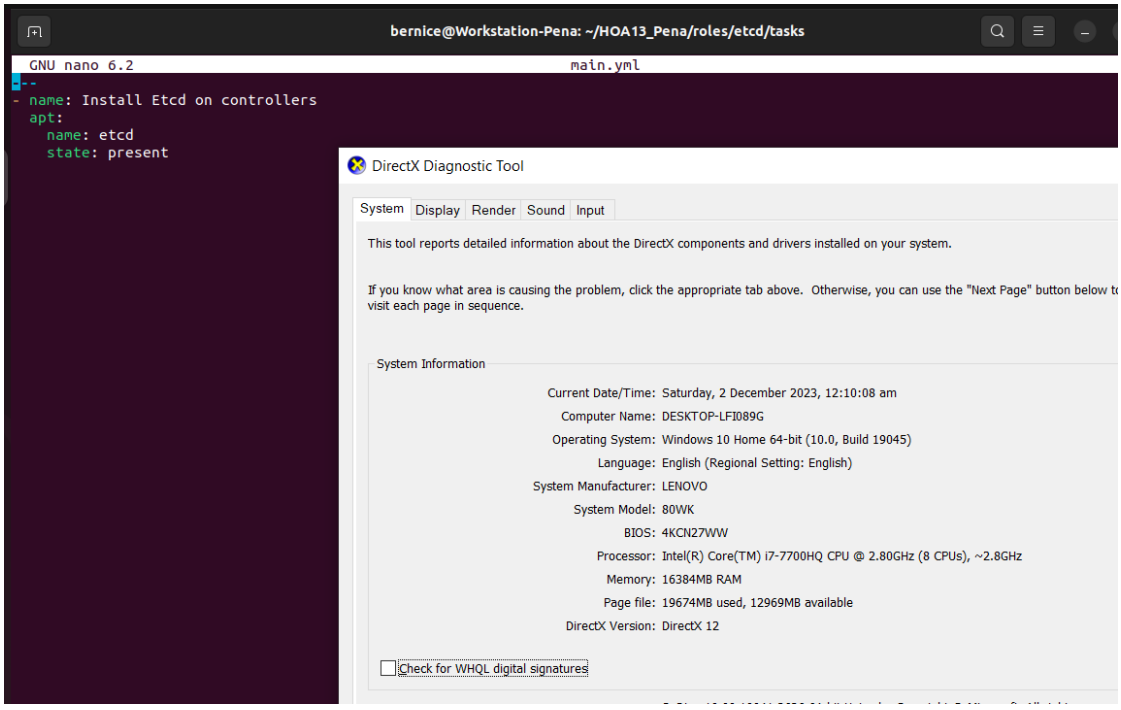
And this is what's inside my main.yml for sql installation



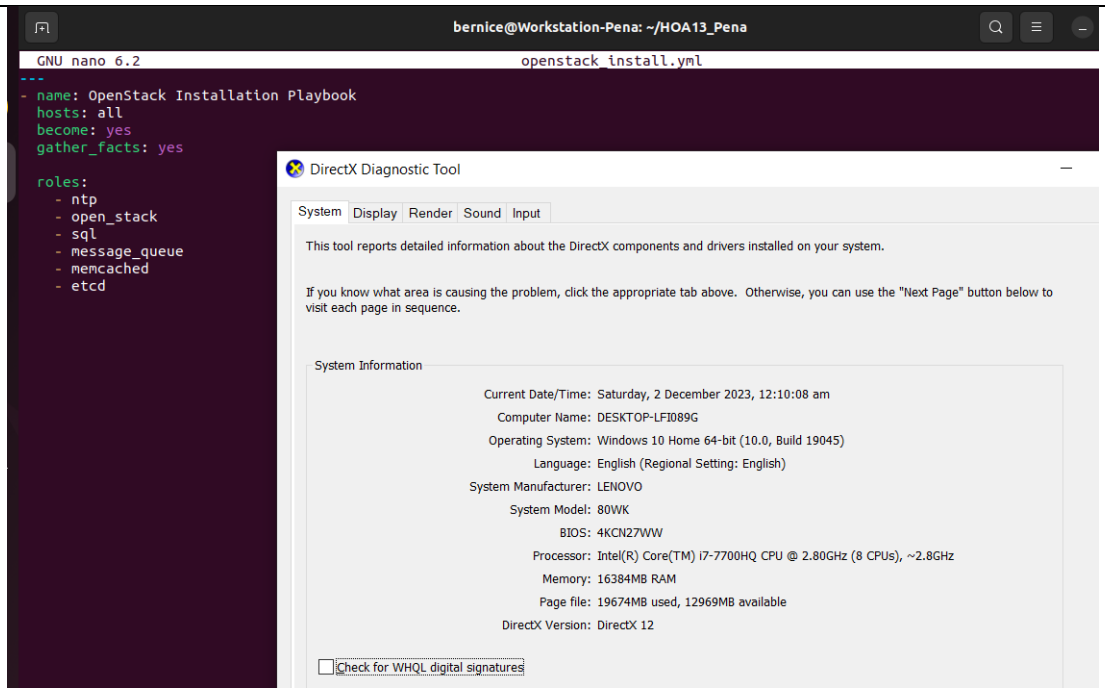
This is my main.yml in my message_queue tasks



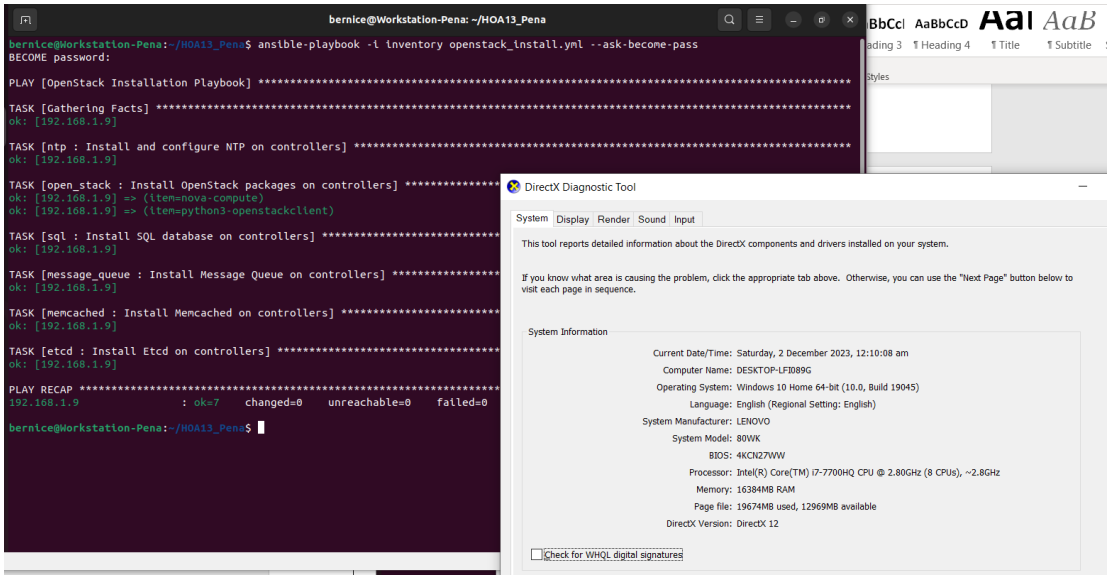
And these are the tasks for the installation of Memcached



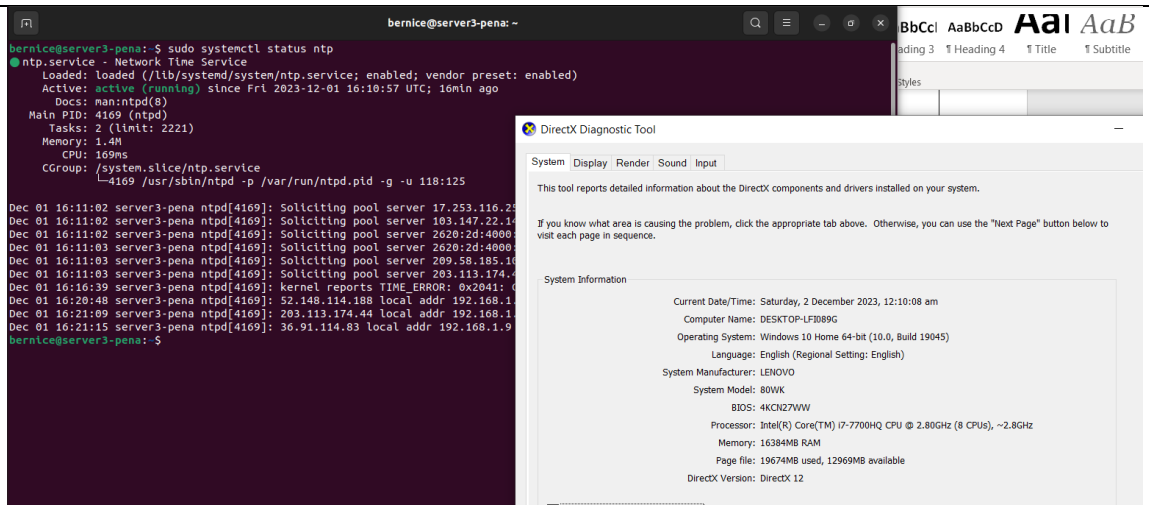
This is what I have inside my main.yml for the installation of etcd on controllers



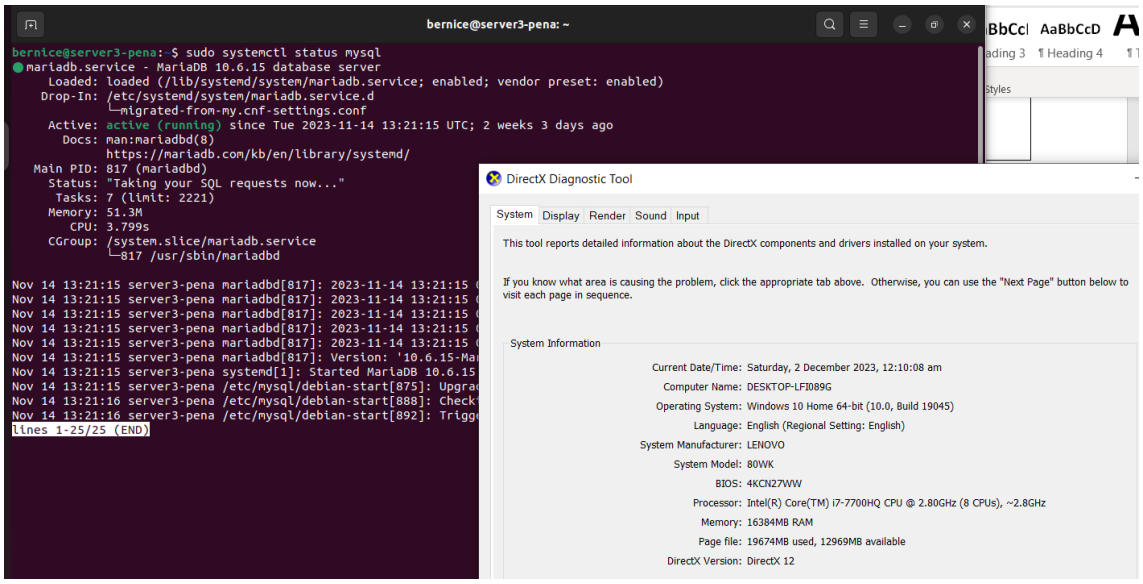
Then I created a new yml for the installation of OpenStack packages



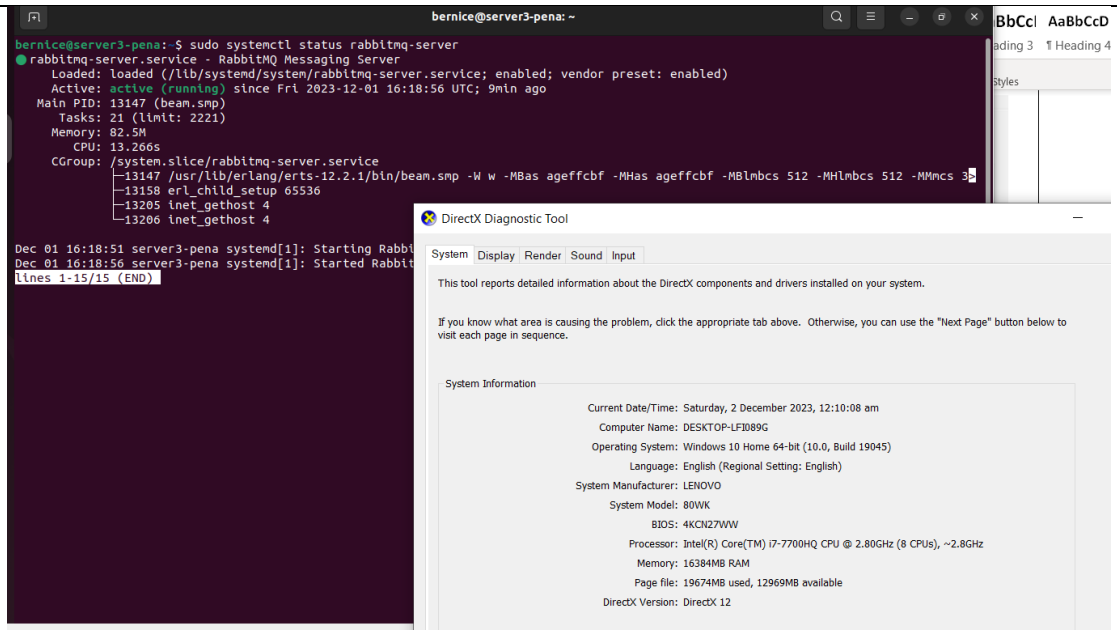
After running the playbook, the status for each tasks is indicated by “ok”, meaning that the OpenStack packages are successfully installed.



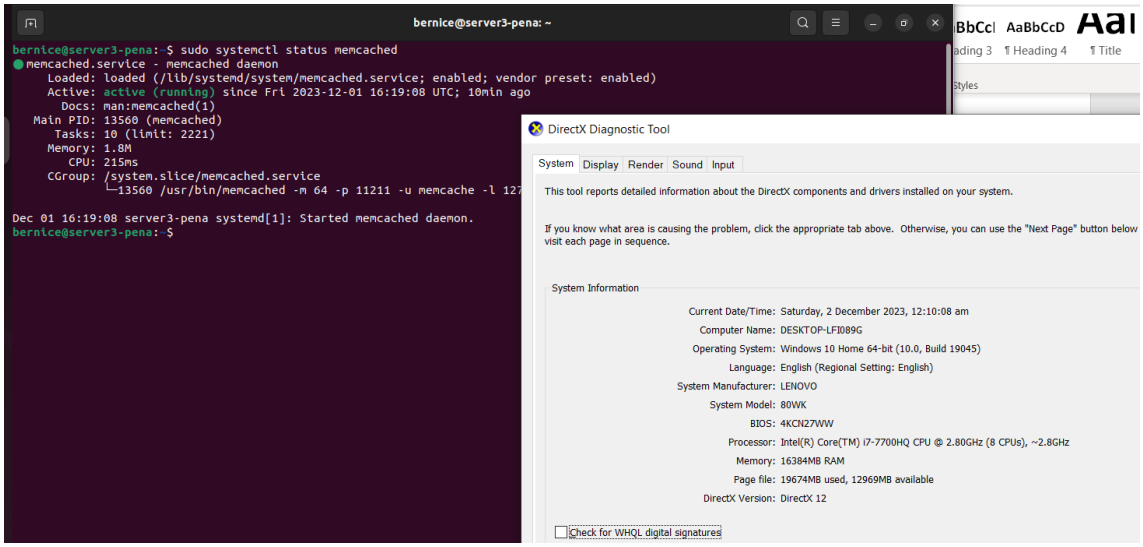
NTP status



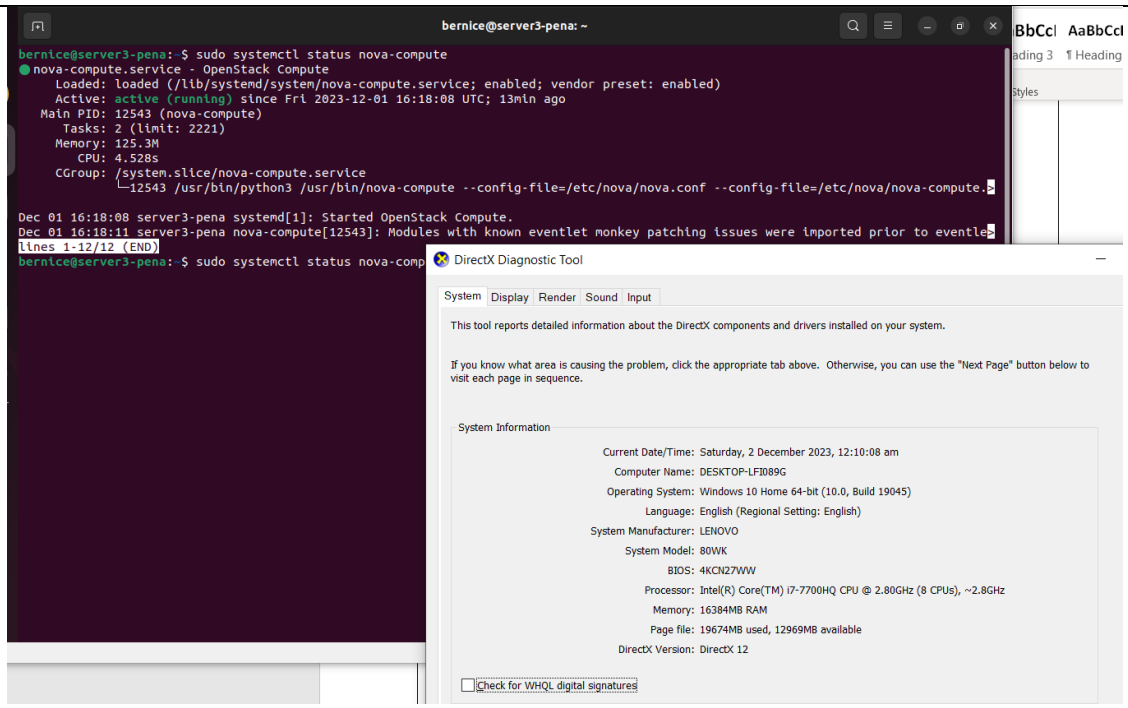
SQL status



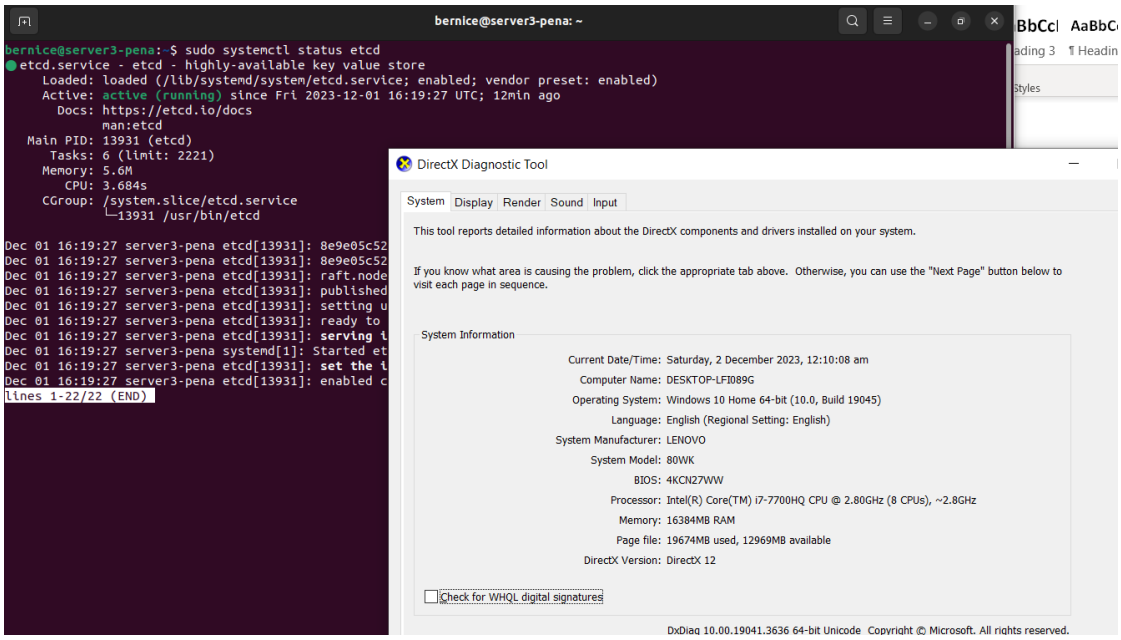
Message queue status



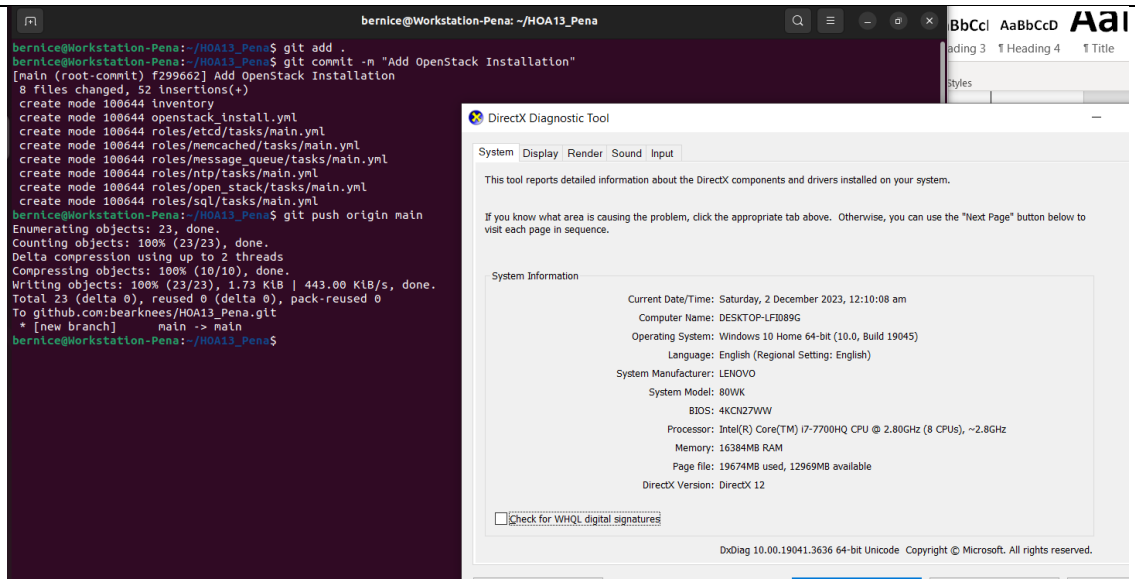
Memcached status



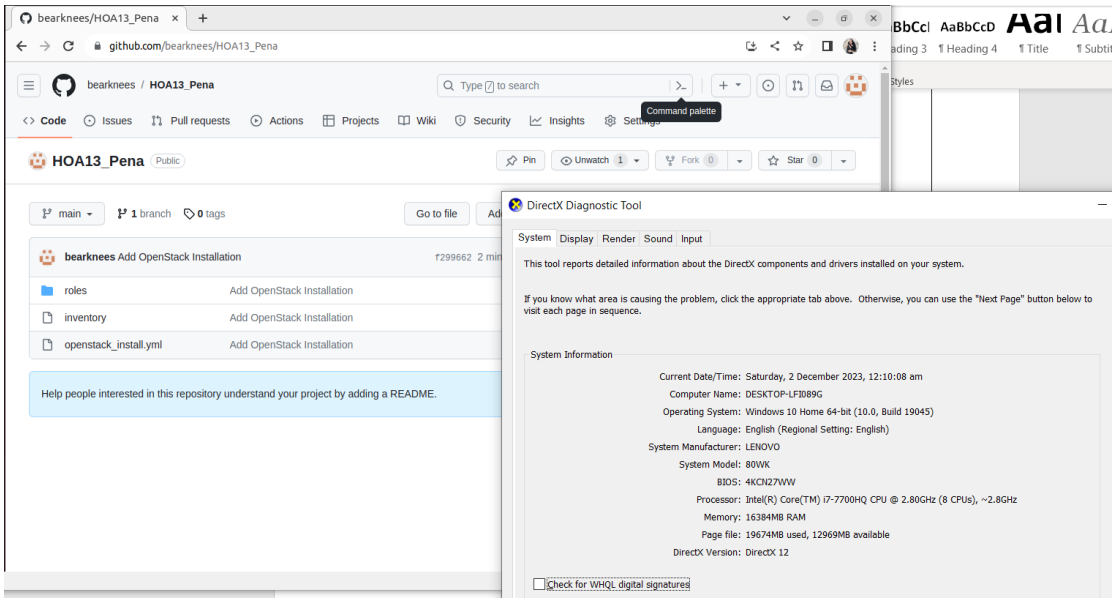
OpenStack status



Etcd status



After verifying the status for each, I added and commit all the changes and pushed it in my GitHub



HOA13 GitHub repository

GitHub repository link: https://github.com/bearknees/HOA13_Pena

Reflections:

Answer the following:

1. What are the benefits of implementing OpenStack?
   Implementing OpenStack provides several benefits such as the scalability in order to adapt with various workloads, having this is also cost efficiency since it is optimized through resource utilization. OpenStack provides having the freedom of an open-source platform, the support for multi-tenancy makes the development of isolated environments which offers diverse user needs.

Conclusions:

Implementation of OpenStack using Ansible helped me to analyze the advantages of having it, I was able to evaluate various aspects of cloud deployment models of it as I configure OpenStack which opened a deep understanding of architecture choices. Ansible helped in demonstrating the workflow for the installation of OpenStack packages and its services. Learning about the OpenStack can help with the preparation of developing crucial skills in infrastructure as code as well as configuration management especially in scalable and automated cloud solutions. OpenStack can simplify cloud management which makes it a great tool for organizations and industry for having efficient and innovative solutions in cloud computing.