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Course/Section: CPE31S5	**Date Submitted: 12/15/2023**
Instructor: Engr. Roman Richard	**Semester and SY: 1st sem 23-24**

Activity 14: OpenStack Installation (Keystone, Glance, Nova)

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)

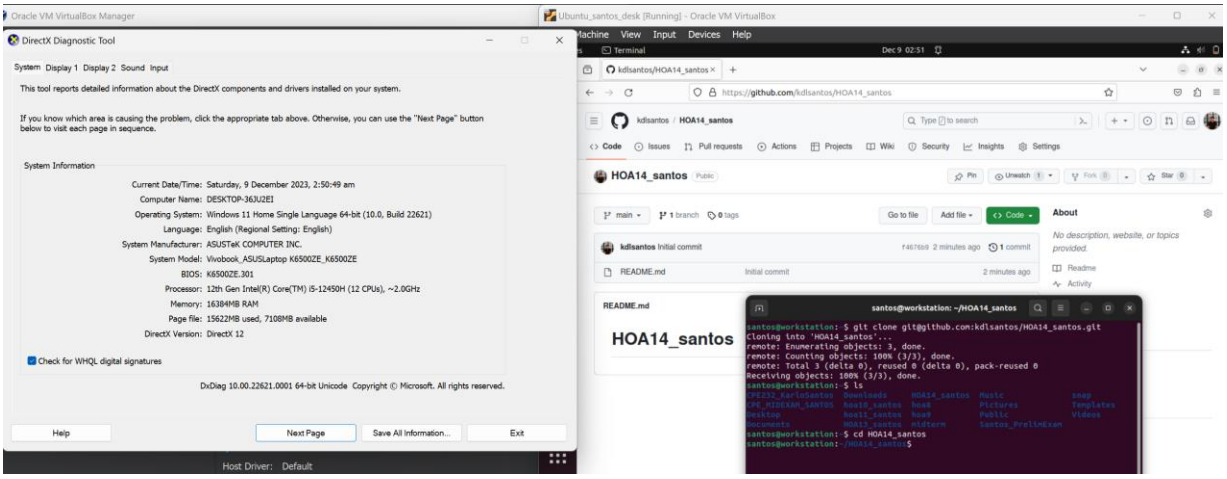
1x Ubuntu VM or Centos VM

4. Tasks

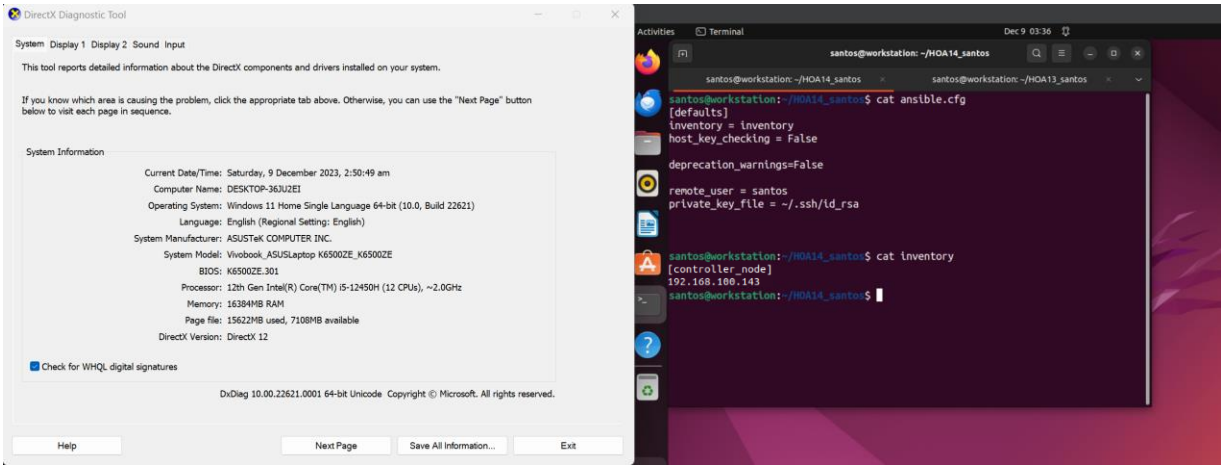
1. Create a new repository for this activity.
2. Create a playbook that converts the steps in the following items in https://docs.openstack.org/install-guide/
    a. Keystone (Identity Service)
    b. Glance (Imaging Service)
    c. Nova (Compute Service)
    d. Create different plays in installing per 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)

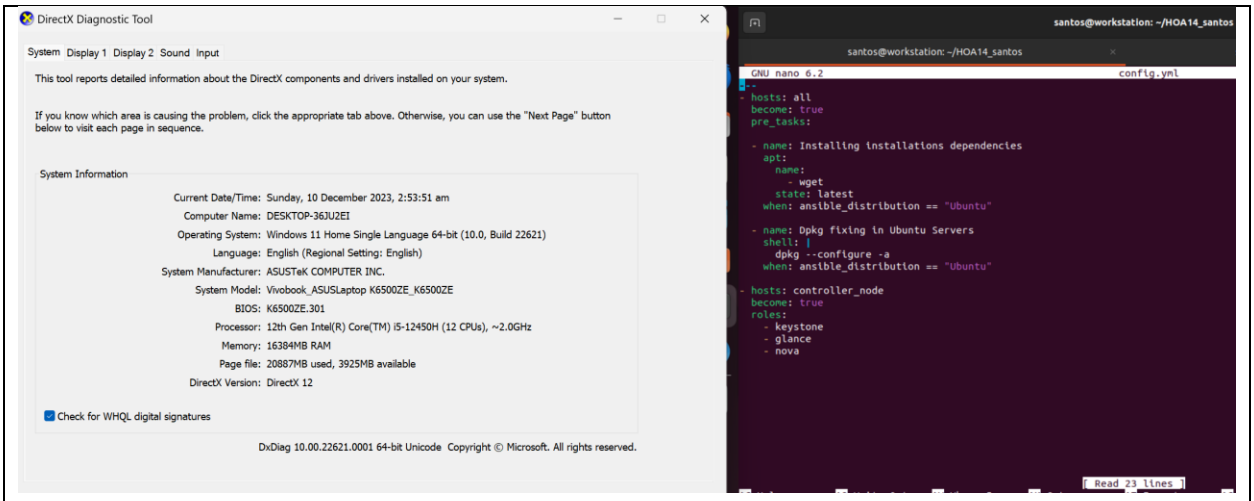
Create a new repository for this activity.



This is the screenshot of cloning the new repository into the terminal.

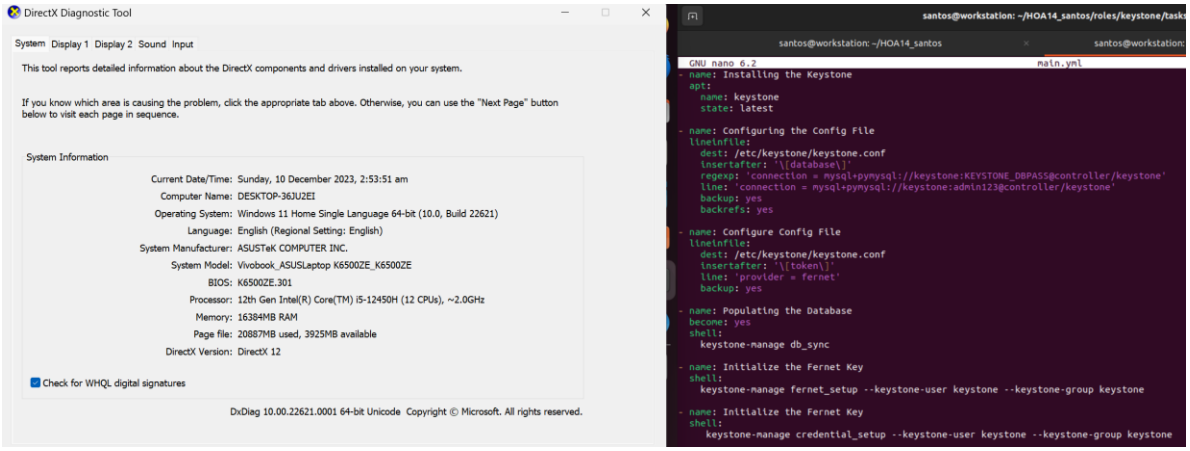


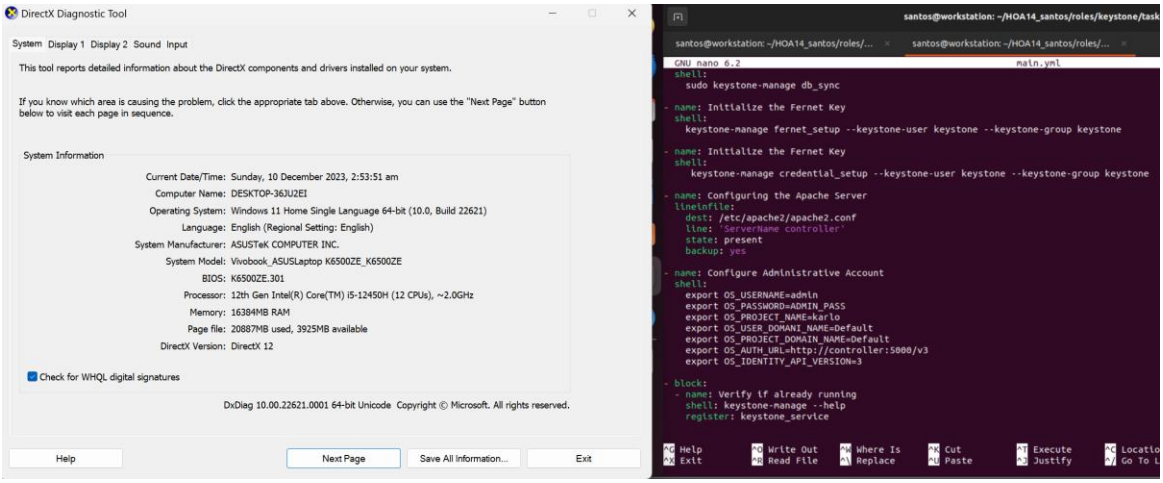
The screenshot shows the content of ansible.cfg that will be going to use in this activity. It also shows the content of inventory where we can see the ip address of the remote server.



This is the content of config.yml, it first run the pre-tasks where it contains the installation of dependencies. After that it will call the different roll for installation.

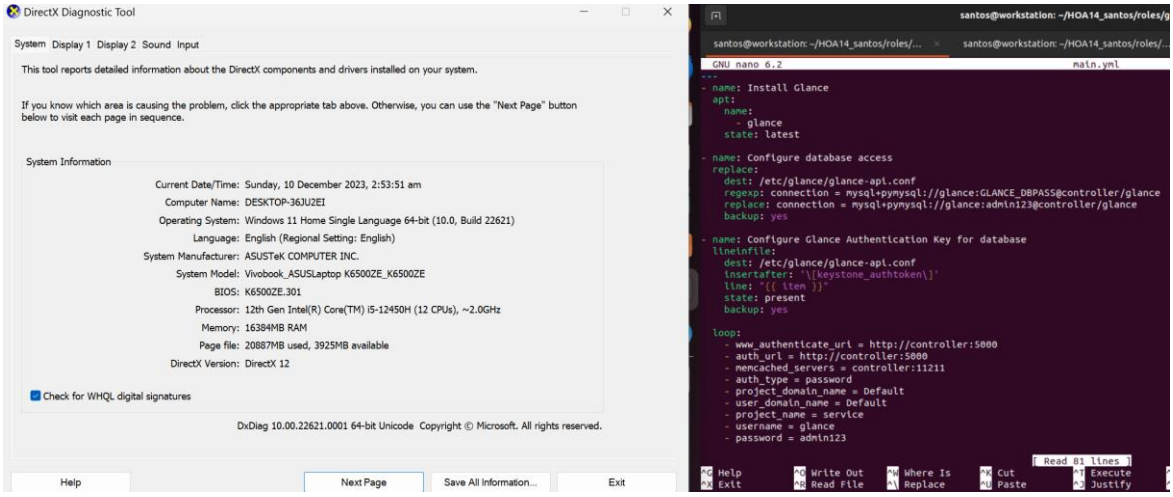
Keystone

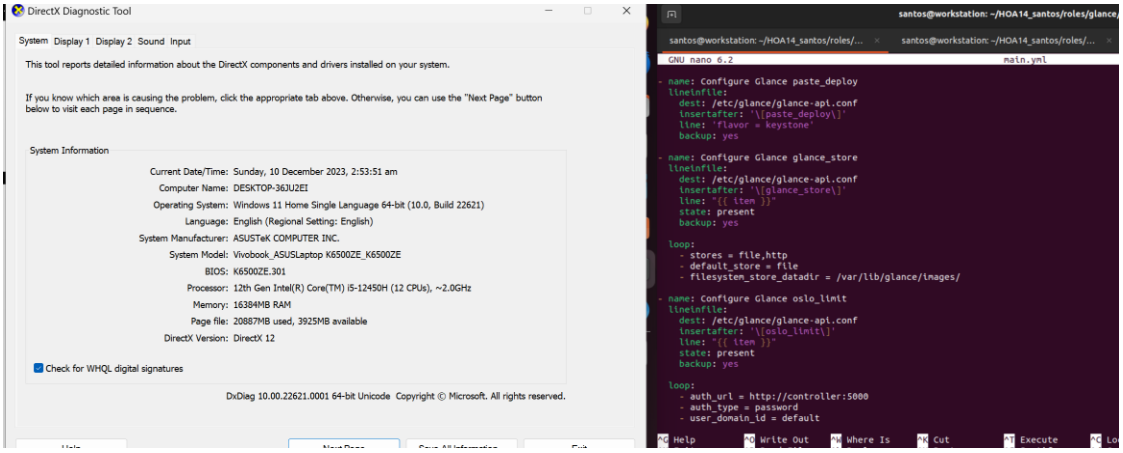


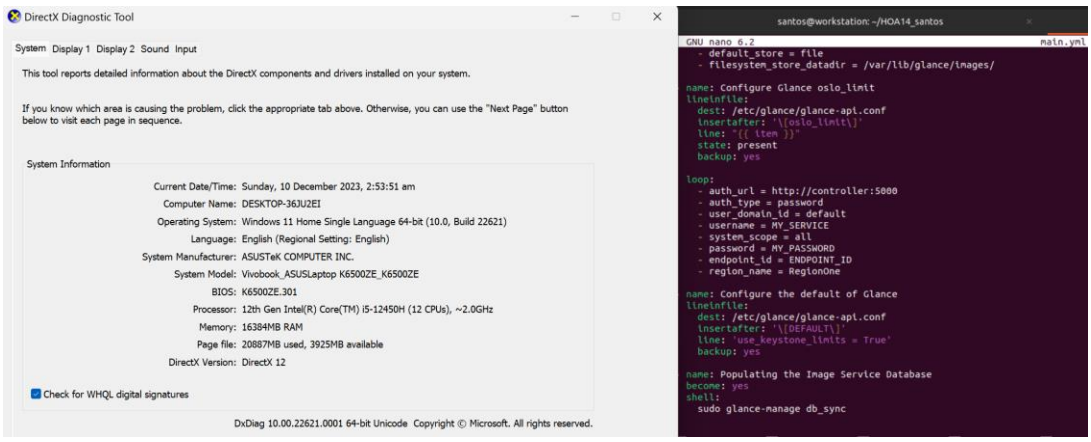


The screenshot above is the main.yml of keystone role. Contain the installation of keystone and also configuring of it to the remote server. It will help to properly install the keystone.

Glance

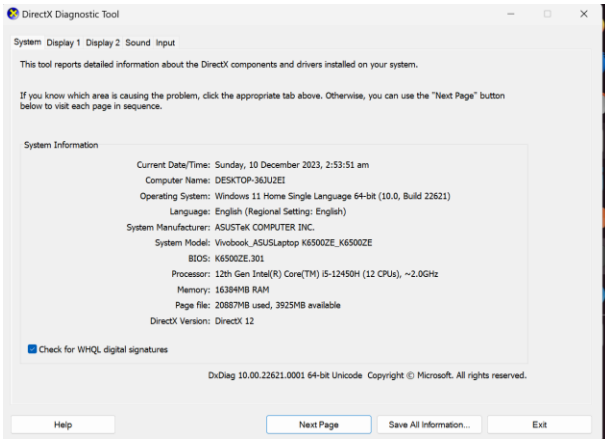


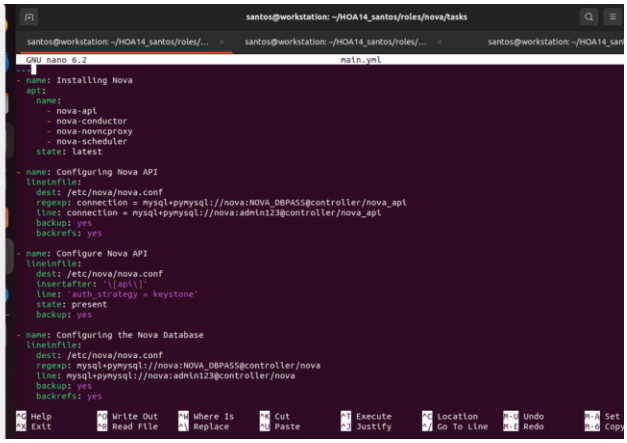


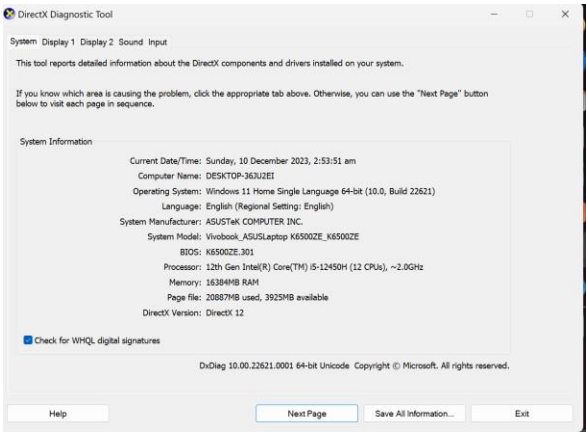


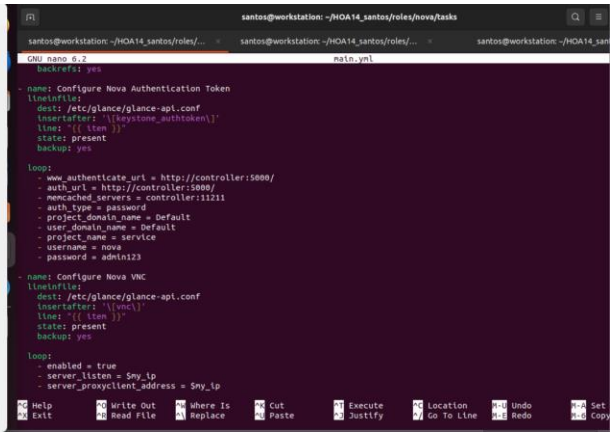
This is the content of main.yml for the glance. It contain the installation of glance and other task like configuring its access into database. Those things are needed to have a properly working glance.

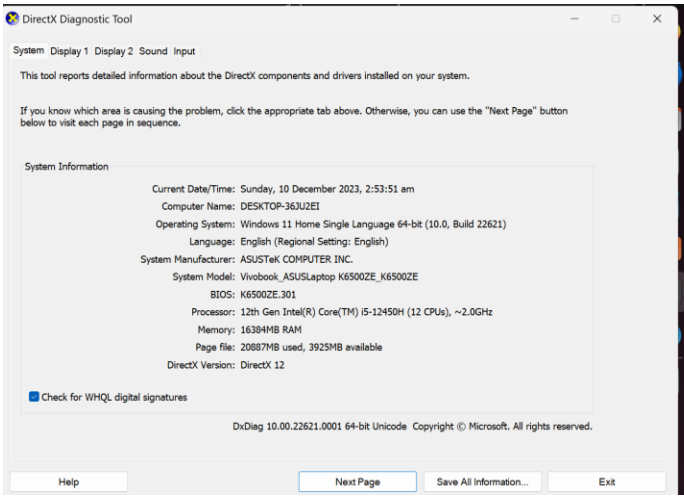
Nova

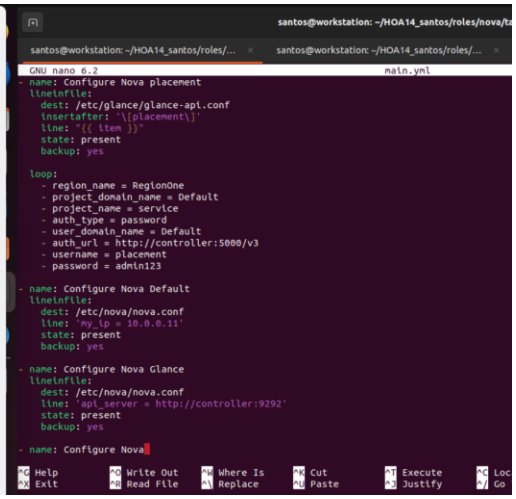


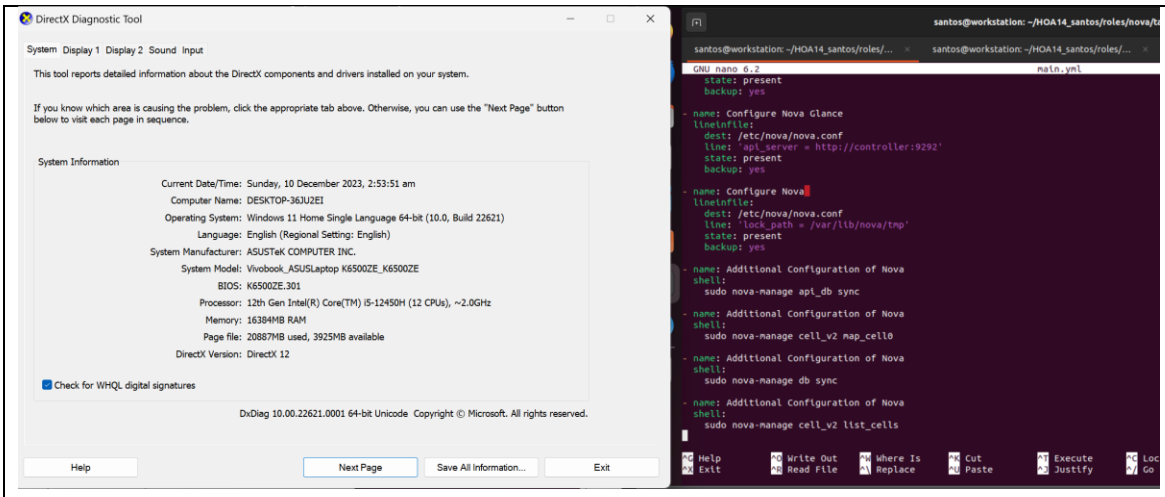






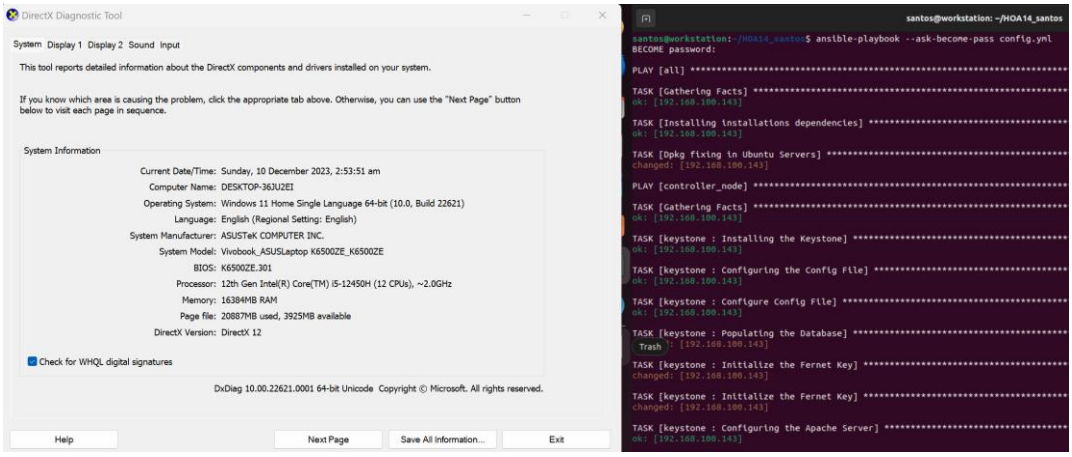


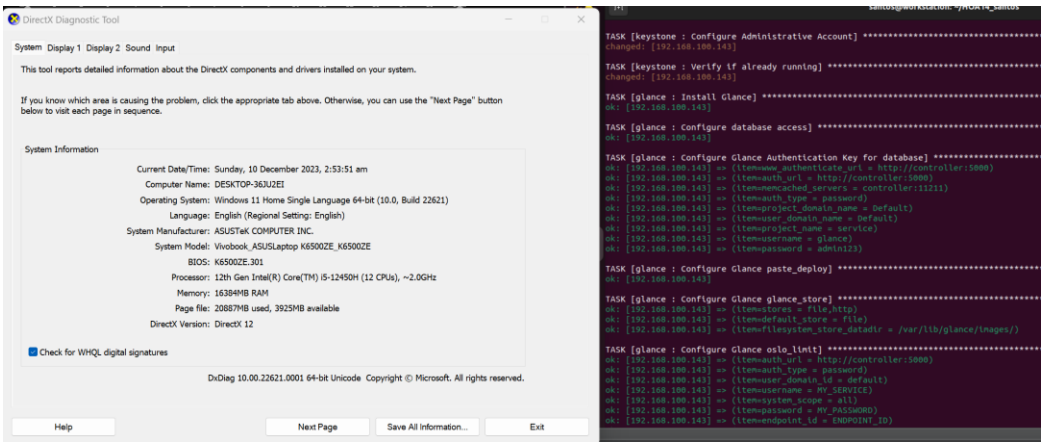


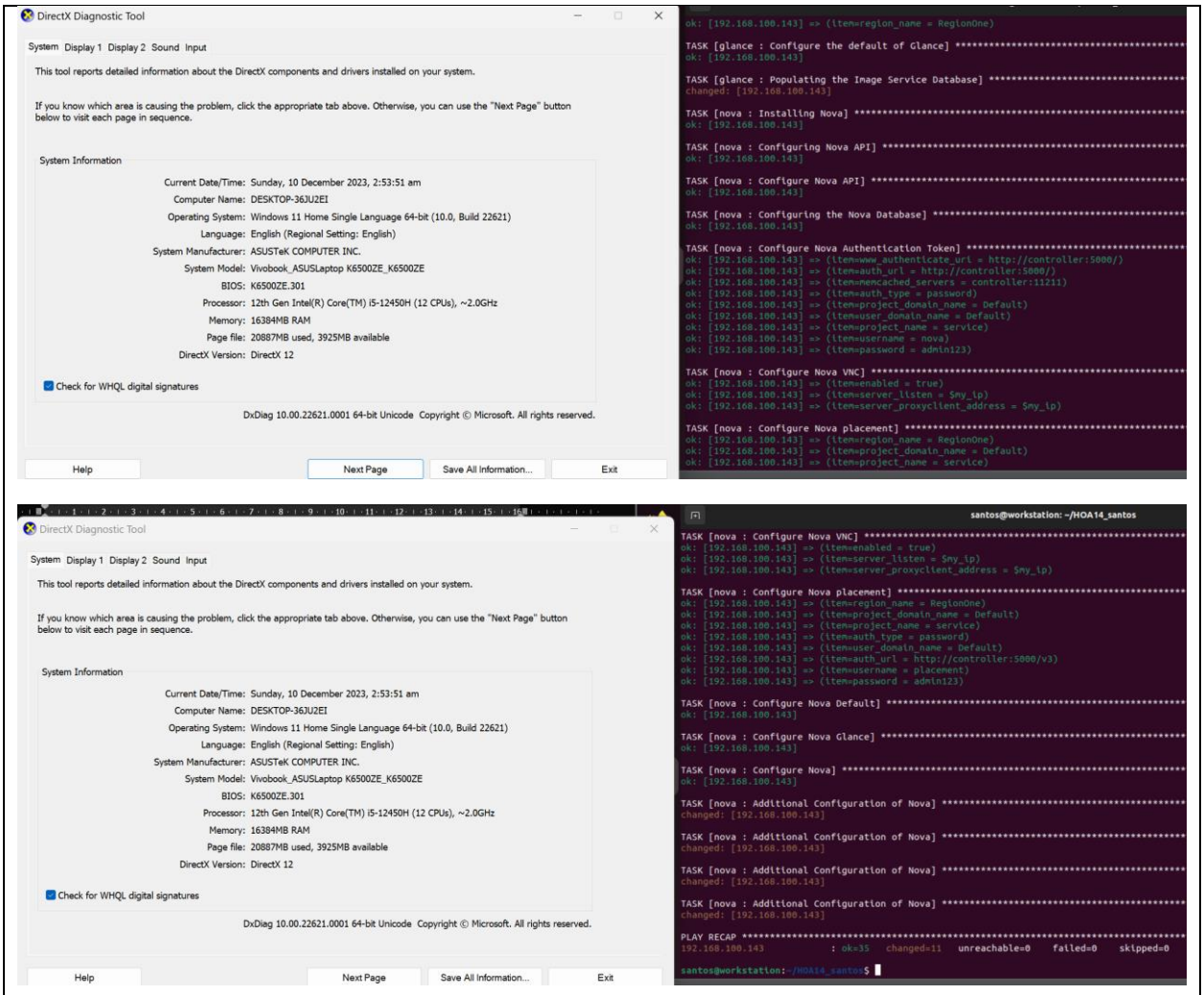


This is about the installation of nova to the remote server. This include the different task that is needed for the installation. It include the configuration of nova API and some configuration for nova.

Run the playbook



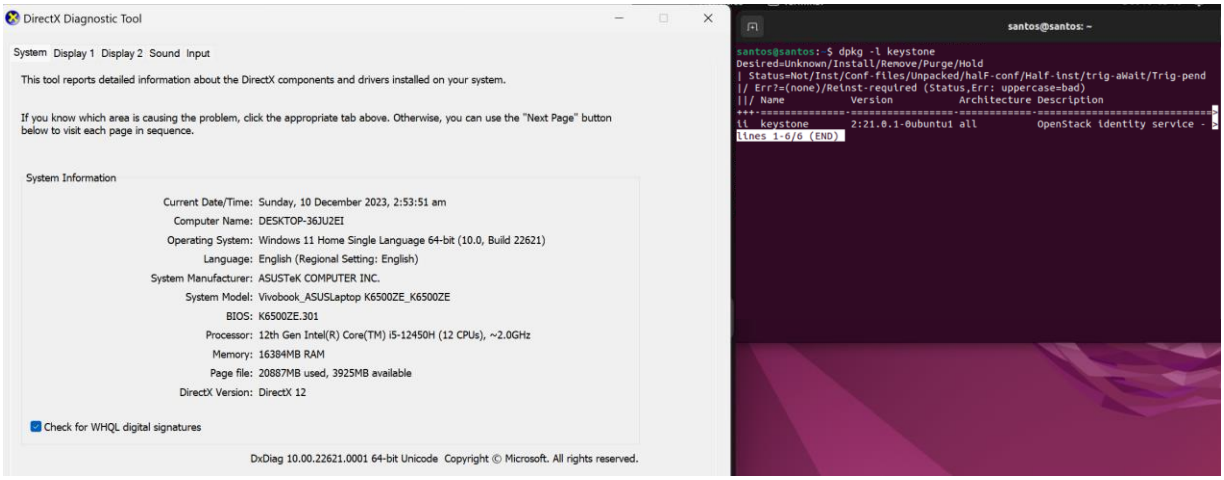




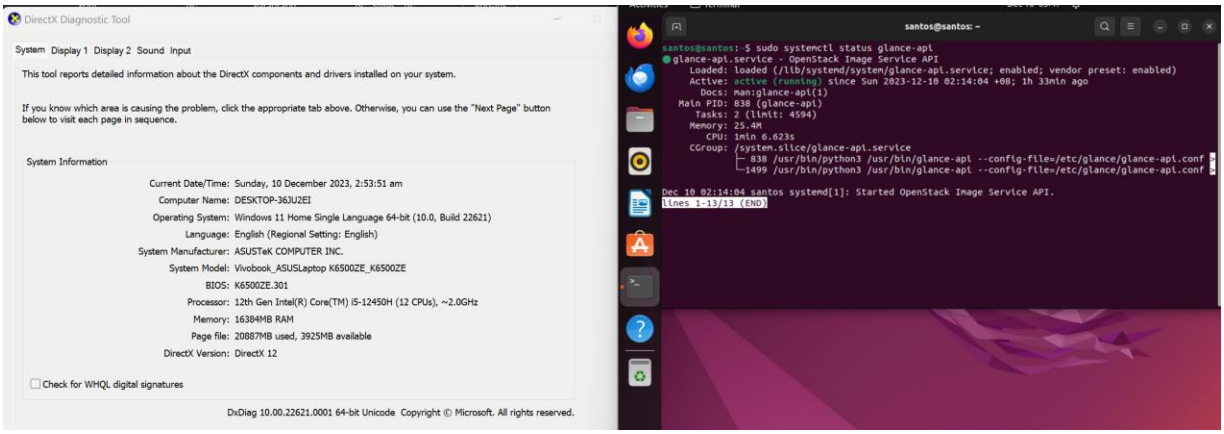
This is the result after I run the playbook. It shows that all the task is successfully executed and be able to install all the needed task for the remote server. It shows in the play recap that all are ok and changed and no task in the failed part.

Verification if all the things are installed properly

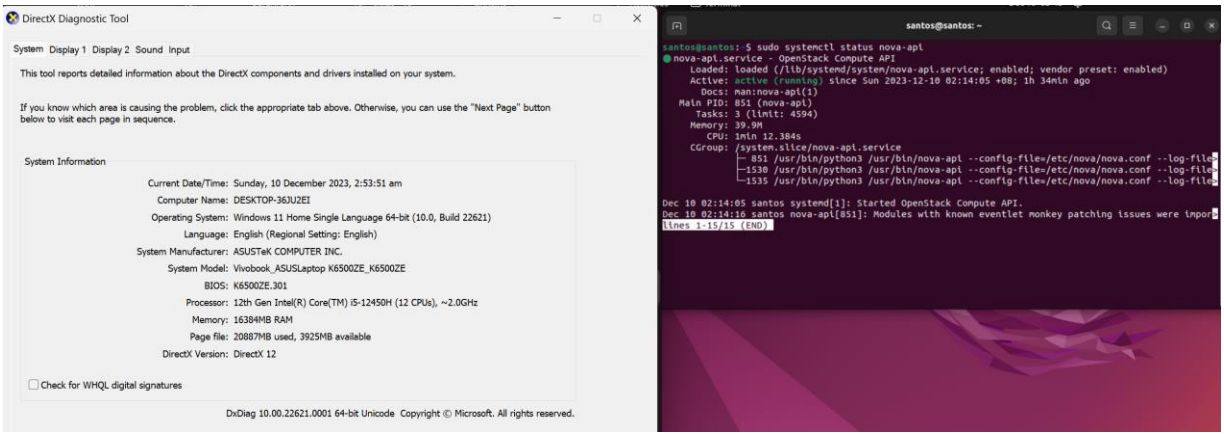
Keystone



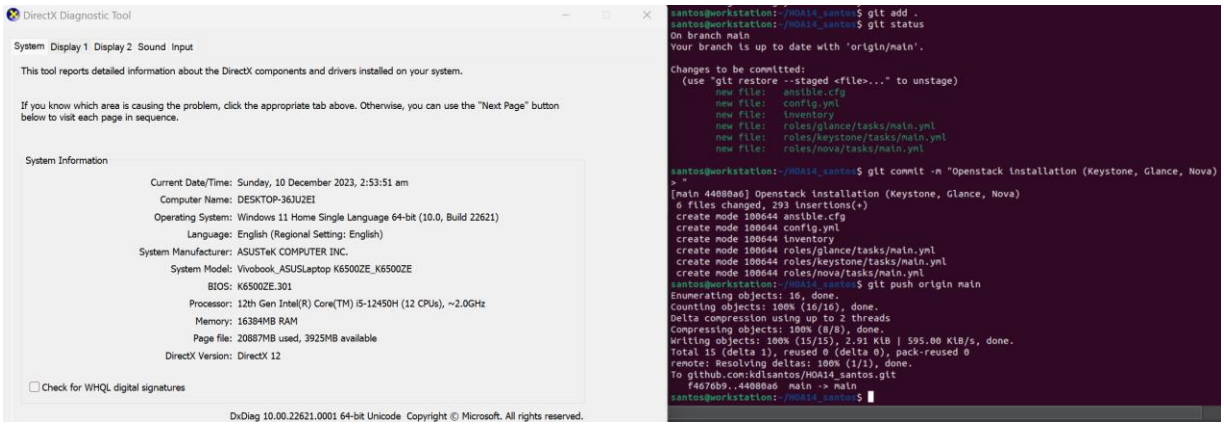
Glance

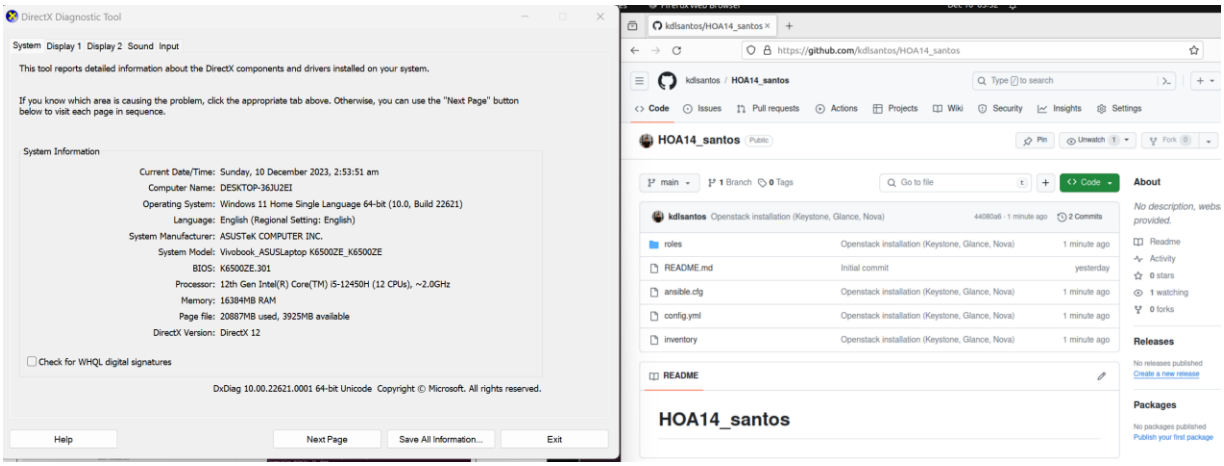


Nova



Pushing to the github





This shows that my github repository contain all the files and directory I used in this activity. Using the git push origin main in the terminal.

GitHub repository link:

https://github.com/kdlsantos/HOA14_santos

Reflections:

Answer the following:

1. Describe Keystone, Glance and Nova services
    - **Keystone:** It is identity service and its main purpose is to gives authentication and authorization services to the OpenStack services. It will manage the user and also the system data and make sure the security access to the OpenStack services.

- **Glance:** It is a computer service and its main role is to manage and categorized the virtual machine image used by OpenStack. Those images can be used in the virtual instances and also glance can enable the user to register a VM image.
- **Nova:** It is a computer service and its main purpose is to manage and also look after to the compute resources. It will help to allow the user to create and manage different virtual machine and gives feature for scaling.

Conclusions:

In this activity I able to expand my understanding and knowledge about OpenStack. In the procedure I are able to install the keystone, glance, and nova to the remoter server which is Ubuntu server. I able to install all the needed requirements and also be familiarize how to install those things and also troubleshoot an error if I encounter one. In the reflection, I able to learn the difference between the 3, like its role and also their individual purpose. I learned that keystone is more about identity and authentication, while glance is about managing the VMs and lastly the nova is about managing the compute resources. I hope to use this in the future activity and explore more about this topic.