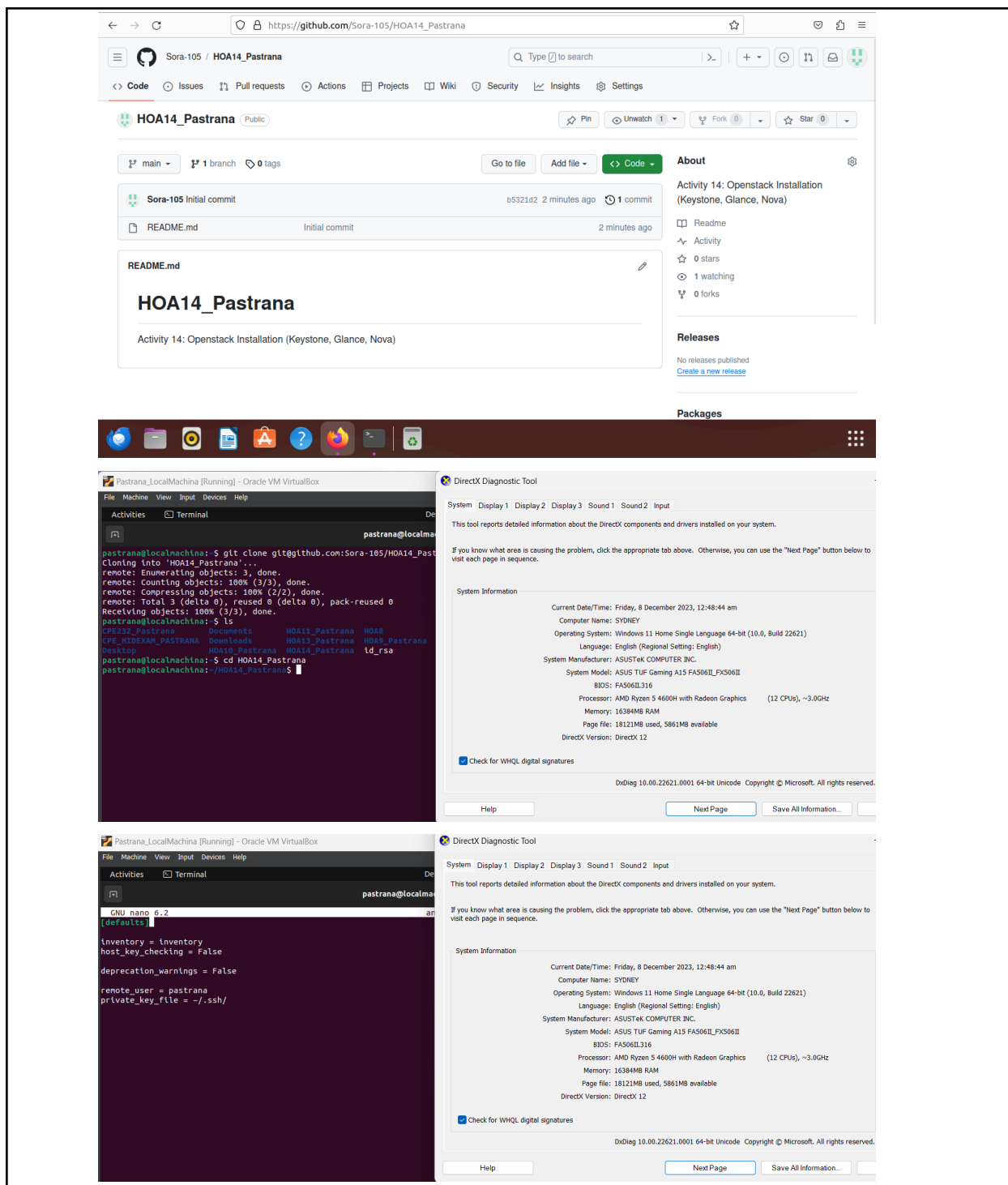
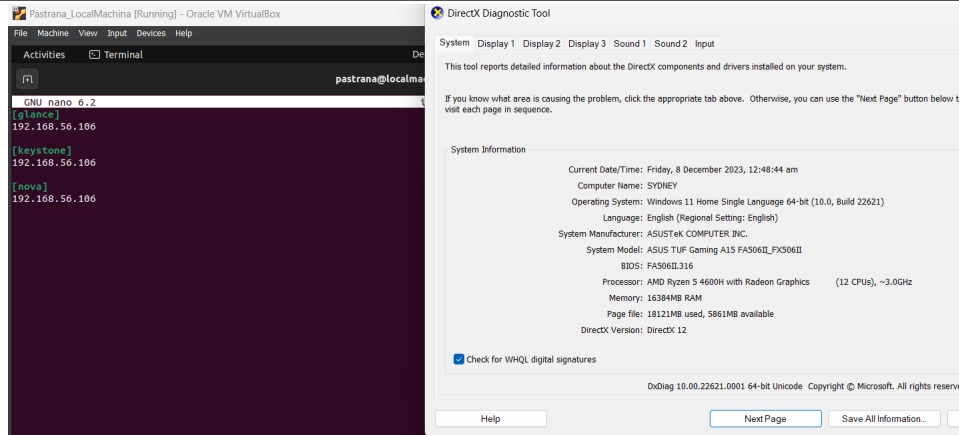


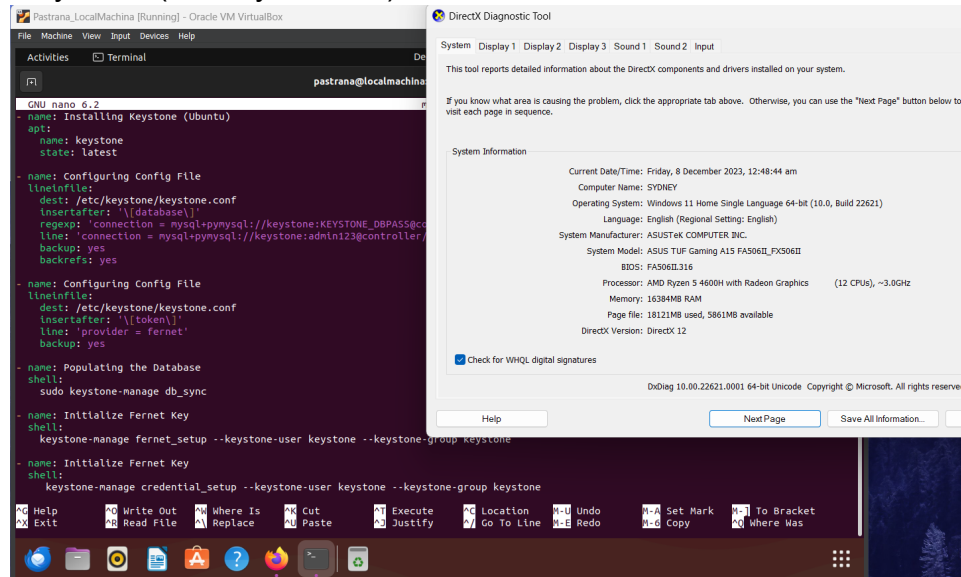
<b>Name: Pastrana, Mark Laurenz</b>	<b>Date Performed: Dec 7, 2023</b>
<b>Course/Section: CPE31S5</b>	<b>Date Submitted: Dec 7, 2023</b>
<b>Instructor: Engr. Richard Roman</b>	<b>Semester and SY: 2023-2024</b>
<b>Activity 14: OpenStack Installation (Keystone, Glance, Nova)</b>	
<b>1. Objectives</b>	
Create a workflow to install OpenStack using Ansible as your Infrastructure as Code (IaC).	
<b>2. Intended Learning Outcomes</b>	
<ol style="list-style-type: none"> <li>1. Analyze the advantages and disadvantages of cloud services</li> <li>2. Evaluate different Cloud deployment and service models</li> <li>3. Create a workflow to install and configure OpenStack base services using Ansible as documentation and execution.</li> </ol>	
<b>3. Resources</b>	
<p>Oracle VirtualBox (Hypervisor)</p> <p>1x Ubuntu VM or Centos VM</p>	
<b>4. Tasks</b>	
<ol style="list-style-type: none"> <li>1. Create a new repository for this activity.</li> <li>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> <ol style="list-style-type: none"> <li>a. Keystone (Identity Service)</li> <li>b. Glance (Imaging Service)</li> <li>c. Nova (Compute Service)</li> <li>d. Create different plays in installing per server type (controller, compute etc.) and identify it as a group in the Inventory file.</li> <li>e. Add, commit and push it to your GitHub repo.</li> </ol> </li> </ol>	
<b>5. Output</b> (screenshots and explanations)	
<ol style="list-style-type: none"> <li>1. Create a new repository for this activity.</li> </ol>	



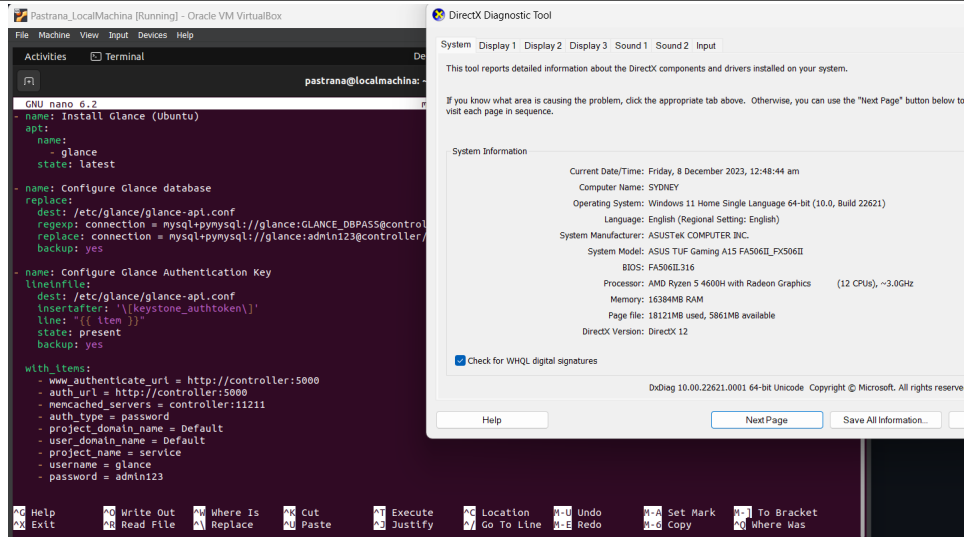


2. Create a playbook that converts the steps in the following items in <https://docs.openstack.org/install-guide/>

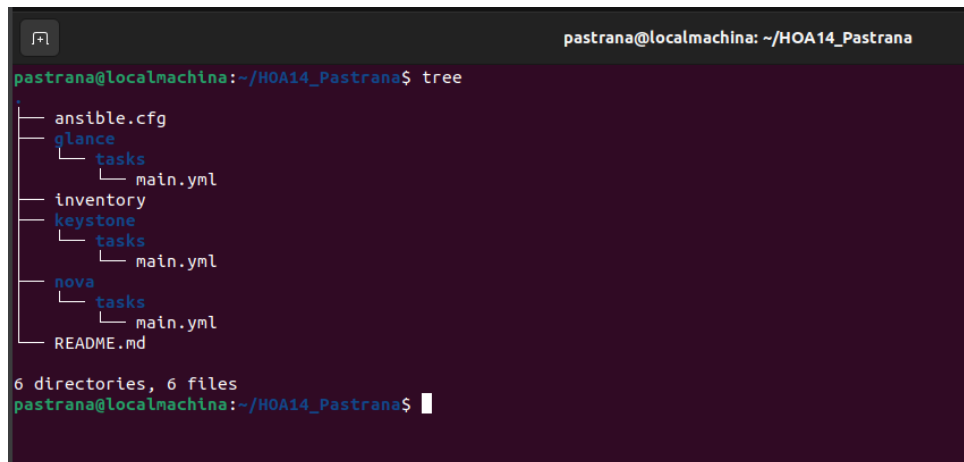
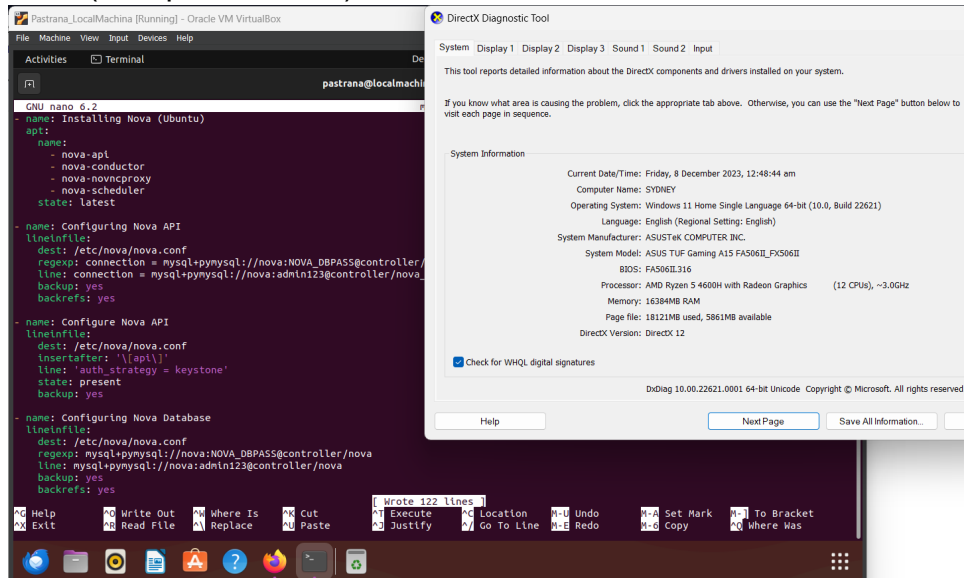
### a. Keystone (Identity Service)



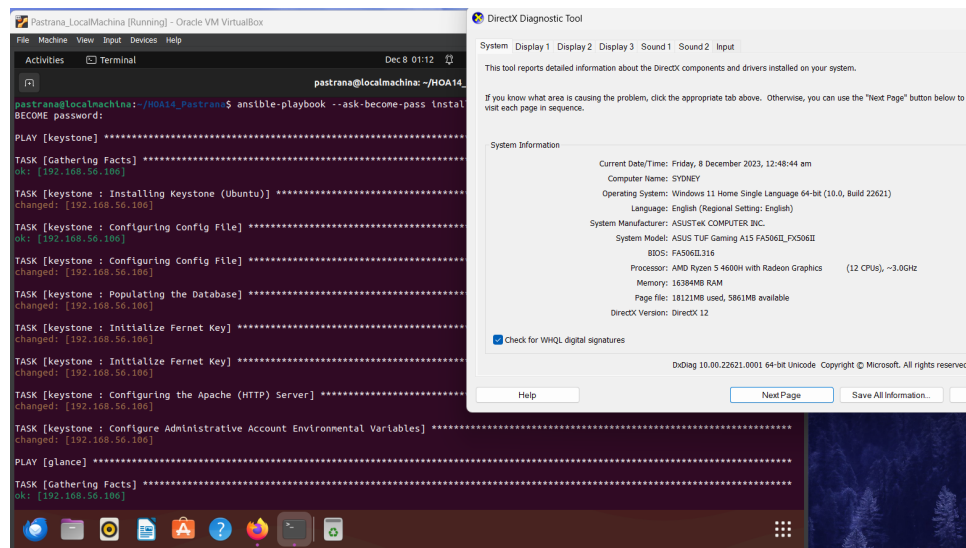
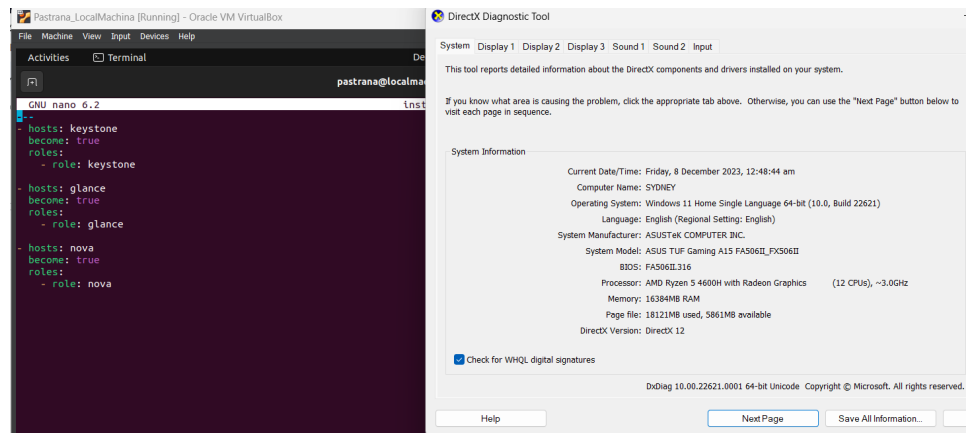
### b. Glance (Imaging Service)



### 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.



Pastrana\_LocalMachine [Running] - Oracle VM VirtualBox

FileMachineViewInputDevicesHelp

ActivitiesTerminal

Dec 8 01:12

pastrana@localmachina: ~/HOA14

```
TASK [glance : Install Glance (Ubuntu)] *****
changed: [192.168.56.106]
ok: [192.168.56.106]

TASK [glance : Configure Glance database] *****
changed: [192.168.56.106]
ok: [192.168.56.106]

TASK [glance : Configure Glance Authentication Key] *****
changed: [192.168.56.106] ==> (item=www_authenticate_url = http://controller:5000)
changed: [192.168.56.106] ==> (item=auth_url = http://controller:5000)
changed: [192.168.56.106] ==> (item=noncached_servers = controller:11211)
changed: [192.168.56.106] ==> (item=auth_type = password)
changed: [192.168.56.106] ==> (item=project_domain_name = Default)
changed: [192.168.56.106] ==> (item=user_domain_name = Default)
changed: [192.168.56.106] ==> (item=project_name = service)
changed: [192.168.56.106] ==> (item=username = glance)
changed: [192.168.56.106] ==> (item=password = admin123)
ok: [192.168.56.106]

TASK [glance : Configure Glance paste_deploy] *****
changed: [192.168.56.106]

TASK [glance : Configure Glance glance_store] *****
changed: [192.168.56.106] ==> (item=stores = file,http)
changed: [192.168.56.106] ==> (item=default_store = file)
changed: [192.168.56.106] ==> (item=filesystem_store_datadir = /var/lib/glance/una
ok: [192.168.56.106]

TASK [glance : Configure Glance oslo_limit] *****
changed: [192.168.56.106] ==> (item=auth_type = password)
changed: [192.168.56.106] ==> (item=user_domain_id = default)
changed: [192.168.56.106] ==> (item=username = MY_SERVICE)
changed: [192.168.56.106] ==> (item=system_scope = all)
changed: [192.168.56.106] ==> (item=password = MY_PASSWORD)
changed: [192.168.56.106] ==> (item=endpoint_id = ENDPOINT_ID)
changed: [192.168.56.106] ==> (item=region_name = RegionOne)
ok: [192.168.56.106]

TASK [glance : Configure Glance DEFAULT] *****
changed: [192.168.56.106]
ok: [192.168.56.106]
```

DirectX Diagnostic Tool

SystemDisplay1Display2Display3Sound1Sound2Input

This tool reports detailed information about the DirectX components and drivers installed on your system.

If you know what area is causing the problem, click the appropriate tab above. Otherwise, you can use the "Next Page" button below to visit each page in sequence.

System Information

Current Date/Time: Friday, 8 December 2023, 12:48:44 am  
Computer Name: SYDNEY  
Operating System: Windows 11 Home Single Language 64-bit (10.0, Build 22H2)
Language: English (Regional Setting: English)
System Manufacturer: ASUS TUF Gaming A15 FA506II\_FX506II
System Model: ASUS TUF Gaming A15 FA506II\_FX506II
BIOS: FA506II.316
Processor: AMD Ryzen 5 4600H with Radeon Graphics (12 CPUs), ~3.0GHz
Memory: 16384MB RAM
Page file: 18121MB used, 5861MB available
DirectX Version: DirectX 12

☒ Check for WHQL digital signatures

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HelpNext PageSave All Information...

Pastrana\_LocalMachine [Running] - Oracle VM VirtualBox

FileMachineViewInputDevicesHelp

ActivitiesTerminal

Dec 8 01:13

pastrana@localmachina: ~/HOA14

```
TASK [glance : Configure Glance DEFAULT] *****
changed: [192.168.56.106]

TASK [glance : Populating Image Service Database] *****
changed: [192.168.56.106]

PLAY [nova] *****
ok: [192.168.56.106]

TASK [nova : Installing Nova (Ubuntu)] *****
changed: [192.168.56.106]
ok: [192.168.56.106]

TASK [nova : Configuring Nova API] *****
changed: [192.168.56.106]

TASK [nova : Configuring Nova Database] *****
changed: [192.168.56.106]
ok: [192.168.56.106]

TASK [nova : Configure Nova Authentication Token (for Keystone)] *****
changed: [192.168.56.106] ==> (item=www_authenticate_url = http://controller:5000)
changed: [192.168.56.106] ==> (item=auth_url = http://controller:5000/)
ok: [192.168.56.106] ==> (item=noncached_servers = controller:11211)
ok: [192.168.56.106] ==> (item=auth_type = password)
ok: [192.168.56.106] ==> (item=project_domain_name = Default)
ok: [192.168.56.106] ==> (item=user_domain_name = Default)
ok: [192.168.56.106] ==> (item=project_name = service)
changed: [192.168.56.106] ==> (item=username = nova)
ok: [192.168.56.106] ==> (item=password = admin123)

TASK [nova : Configure Nova VNC] *****
changed: [192.168.56.106] ==> (item=enabled = true)
changed: [192.168.56.106] ==> (item=server_listen = 5m, 1s)
ok: [192.168.56.106]
```

DirectX Diagnostic Tool

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Pastrana\_LocalMachine [Running] - Oracle VM VirtualBox

FileMachineViewInputDevicesHelp

ActivitiesTerminal

Dec 8 01:13

pastrana@localmachina: ~/HOA14

```
TASK [nova : Configure Nova placement] *****
ok: [192.168.56.106] ==> (item=region_name = RegionOne)
ok: [192.168.56.106] ==> (item=project_domain_name = Default)
ok: [192.168.56.106] ==> (item=project_name = service)
ok: [192.168.56.106] ==> (item=auth_type = password)
ok: [192.168.56.106] ==> (item=user_domain_name = Default)
changed: [192.168.56.106] ==> (item=auth_url = http://controller:5000/v3)
changed: [192.168.56.106] ==> (item=username = placement)
ok: [192.168.56.106] ==> (item=password = admin123)

TASK [nova : Configure Nova Default] *****
changed: [192.168.56.106]

TASK [nova : Configure Nova Glance] *****
changed: [192.168.56.106]

TASK [nova : Configure Nova oslo_concurrency] *****
changed: [192.168.56.106]

TASK [nova : Additional Configuration of Nova] *****
changed: [192.168.56.106]

TASK [nova : Additional Configuration] *****
changed: [192.168.56.106]

TASK [nova : Additional Configuration] *****
changed: [192.168.56.106]

PLAY RECAP *****
192.168.56.106 : ok=33 changed=26 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0

pastrana@localmachina:~/HOA14_Pastrana$
```

DirectX Diagnostic Tool

SystemDisplay1Display2Display3Sound1Sound2Input

This tool reports detailed information about the DirectX components and drivers installed on your system.

If you know what area is causing the problem, click the appropriate tab above. Otherwise, you can use the "Next Page" button below to visit each page in sequence.

System Information

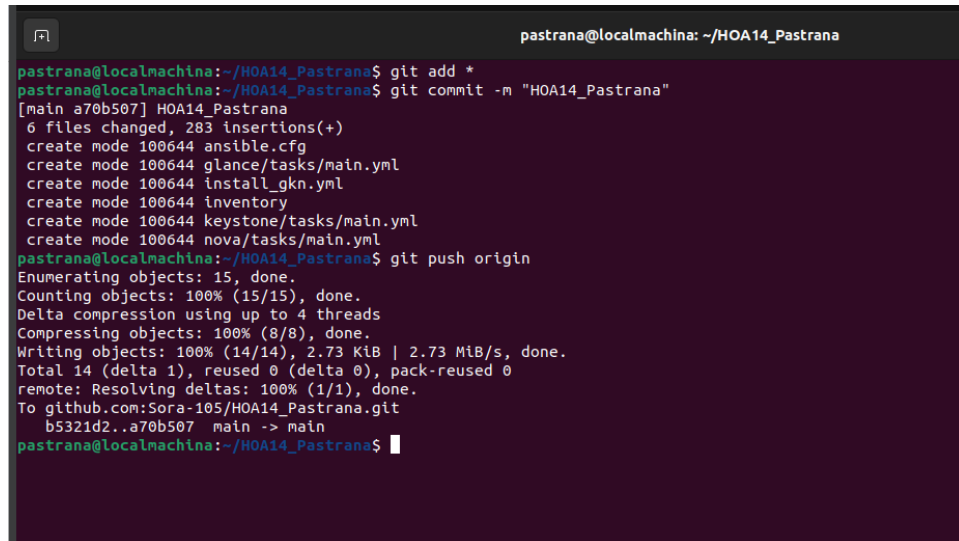
Current Date/Time: Friday, 8 December 2023, 12:48:44 am  
Computer Name: SYDNEY  
Operating System: Windows 11 Home Single Language 64-bit (10.0, Build 22H2)
Language: English (Regional Setting: English)
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☒ Check for WHQL digital signatures

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



```
pastrana@localmachina: ~/HOA14_Pastrana
pastrana@localmachina:~/HOA14_Pastrana$ git add *
pastrana@localmachina:~/HOA14_Pastrana$ git commit -m "HOA14_Pastrana"
[main a70b507] HOA14_Pastrana
6 files changed, 283 insertions(+)
create mode 100644 ansible.cfg
create mode 100644 glance/tasks/main.yml
create mode 100644 install_gkn.yml
create mode 100644 inventory
create mode 100644 keystone/tasks/main.yml
create mode 100644 nova/tasks/main.yml
pastrana@localmachina:~/HOA14_Pastrana$ git push origin
Enumerating objects: 15, done.
Counting objects: 100% (15/15), done.
Delta compression using up to 4 threads
Compressing objects: 100% (8/8), done.
Writing objects: 100% (14/14), 2.73 KiB | 2.73 MiB/s, done.
Total 14 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), done.
To github.com:Sora-105/HOA14_Pastrana.git
b5321d2..a70b507  main -> main
pastrana@localmachina:~/HOA14_Pastrana$
```

[https://github.com/Sora-105/HOA14\\_Pastrana.git](https://github.com/Sora-105/HOA14_Pastrana.git)

### Reflections:

Answer the following:

1. Describe Keystone, Glance and Nova services

- Identity and access management is handled by Keystone, image storage and retrieval is handled by Glance, and compute resources and virtual machine instances are managed by Nova. Together, these services offer an all-inclusive cloud computing architecture under the OpenStack framework. Identity and access management is handled by Keystone, image storage and retrieval is handled by Glance, and compute resources and virtual machine instances are managed by Nova. Together, these services offer an all-inclusive cloud computing architecture under the OpenStack framework.

### Conclusions:

The objective of this Hands-On Activity is to install OpenStack on a CentOS or Ubuntu system. Glance, Keystone, and Nova are among the installations. Since the workstation is an Ubuntu, I decided to utilize Ubuntu for the procedure because I am more comfortable with its operation. I used reference github repositories, online tutorials, and resources. I was successful in completing the task, which required me to use a Playbook to install the specified services.