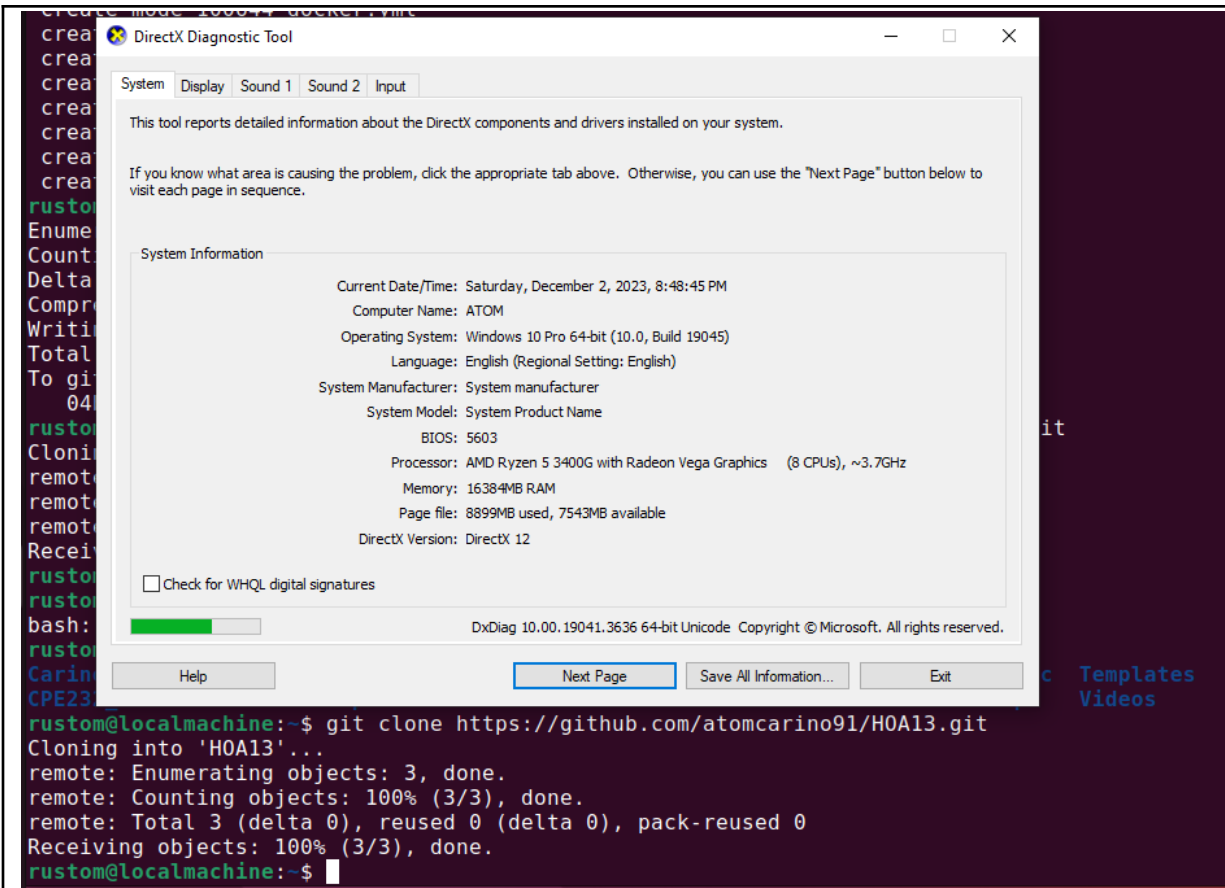
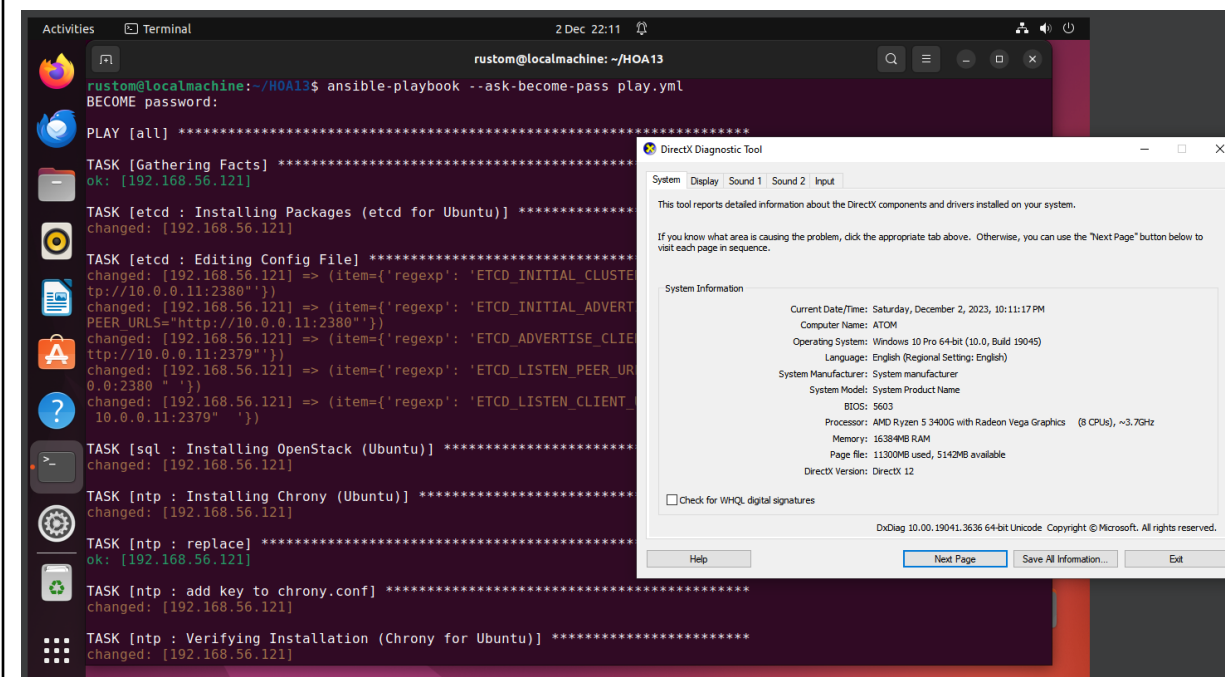
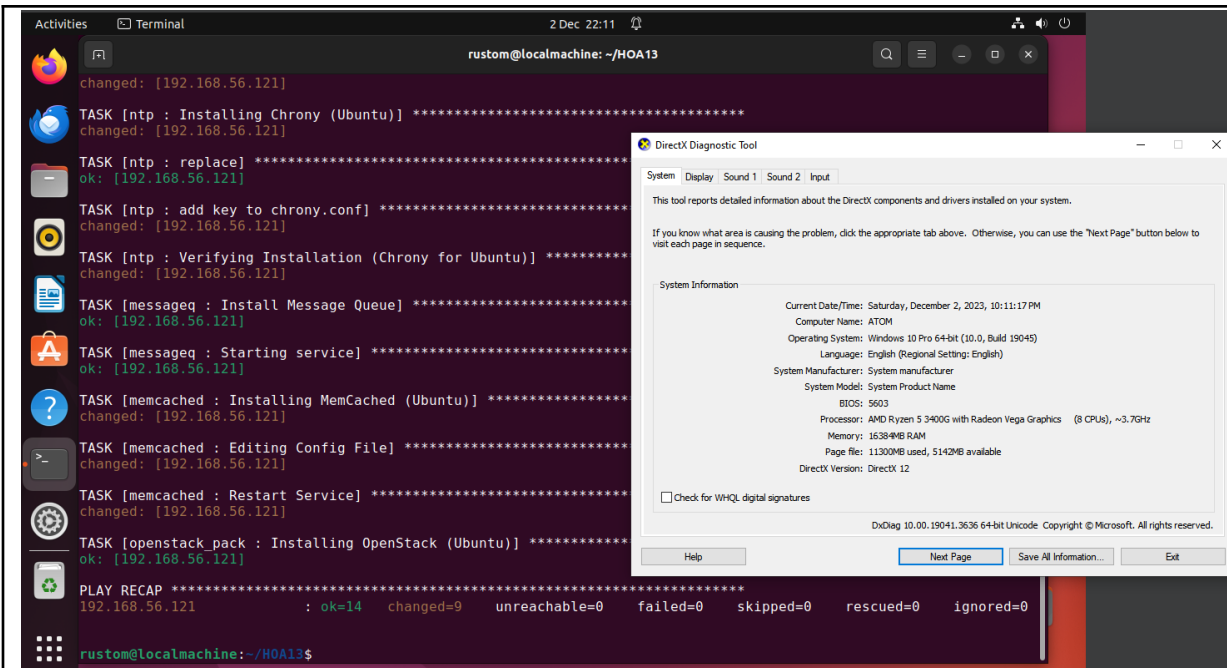


Name: Rustom C. Cariño	Date Performed: 12/2/2023
Course/Section: CPE232/CPE31S5	Date Submitted: 12/2/2023
Instructor: Engr. Roman Richard	Semester and SY: 1st sem 2023-2024
Activity 13: OpenStack Prerequisite Installation	
1. Objectives	
Create a workflow to install OpenStack using Ansible as your Infrastructure as Code (IaC).	
2. Intended Learning Outcomes	
<ol style="list-style-type: none"> 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	
<ol style="list-style-type: none"> 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/ <ol style="list-style-type: none"> 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)	



- creating new repository





- Executing the playbook that install the NTP, OpenStack packages, SQL Database, Message Queue, Memcached and Etc.

ActivitiesTerminal2 Dec 22:15rustom@localmachine: ~/HOA13

GNU nano 6.2play.yml

```
--
- hosts: all
  become: true

roles:
- role: etcd
- role: sql
- role: ntp
- role: messageq
- role: memcached
- role: openstack_pack
```

DirectX Diagnostic Tool

SystemDisplaySound 1Sound 2Input

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: Saturday, December 2, 2023, 10:11:17 PM

Computer Name: ATOM

Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)

Language: English (Regional Setting: English)

System Manufacturer: System manufacturer

System Model: System Product Name

BIOS: 5603

Processor: AMD Ryzen 5 3400G with Radeon Vega Graphics (8 CPUs), ~3.7GHz

Memory: 16384MB RAM

Page file: 11300MB used, 5142MB available

DirectX Version: DirectX 12

☐ Check for WHQL digital signatures

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HelpNext PageSave All Information...Exit

Read 14 lines

^G Help

^O Write Out

^W Where Is

^K Cut

^T Execute

^C Location

M-U Undo

^X Exit

^R Read File

^_ Replace

^U Paste

^J Justify

^/ Go To Line

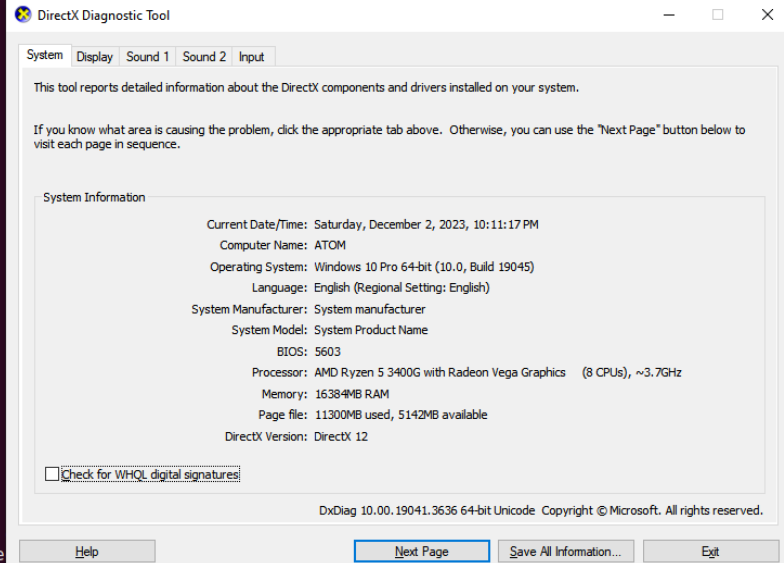
M-E Redo

- The main playbook that execute the content of different roles

- The main playbook that execute the content of different roles

```
├── tasks
│   └── main.yml
├── play.yml
├── README.md
└── sql
    └── tasks
        └── main.yml

12 directories, 10 files
rustom@localmachine:~/H0A13$
rustom@localmachine:~/H0A13$ sudo nano ansible.cfg
rustom@localmachine:~/H0A13$ sudo nano ansible.cfg
rustom@localmachine:~/H0A13$ sudo nano play.yml
rustom@localmachine:~/H0A13$ git add *
rustom@localmachine:~/H0A13$ git commit -m "wahooo"
[main a3c00e3] wahooo
9 files changed, 115 insertions(+)
create mode 100644 ansible.cfg
create mode 100644 etcd/tasks/main.yml
create mode 100644 inventory
create mode 100644 memcached/tasks/main.yml
create mode 100644 messageq/tasks/main.yml
create mode 100644 ntp/tasks/main.yml
create mode 100644 openstack_pack/tasks/main.yml
create mode 100644 play.yml
create mode 100644 sql/tasks/main.yml
rustom@localmachine:~/H0A13$ git push origin
Username for 'https://github.com': atomcarino91
Password for 'https://atomcarino91@github.com':
remote: Support for password authentication was removed
remote: Please see https://docs.github.com/en/get-started
g-with-https-urls for information on currently recommended
```



```
ities [~] Terminal 2 Dec 22:23 11
DirectX Diagnostic Tool
System Display Sound 1 Sound 2 Input
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☐ Check for WHQL digital signatures
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Help Next Page Save All Information... Exit
rustom@localmachine:~/H0A13$ git push origin
Username for 'https://github.com': @atomcarino91
Password for 'https://@atomcarino91@github.com':
Enumerating objects: 21, done.
Counting objects: 100% (21/21), done.
Delta compression using up to 2 threads
Compressing objects: 100% (9/9), done.
Writing objects: 100% (20/20), 2.18 KiB | 123.00 KiB/s, done.
Total 20 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/atomcarino91/H0A13.git
d59f5d3..a3c00e3 main -> main
rustom@localmachine:~/H0A13$
```

- Adding, commit and push into my GitHub repo.

Proof that the objectives was installed:

DirectX Diagnostic Tool

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Help

Next Page

Save All Information...

Exit

```
rustom@server3:~$ chronyc sources
MS Name/IP address         Stratum Poll Reach LastRx Last sample
=====
^* prod-ntp-3.ntp4.ps5.cano> 2 6 377 13 -6543us[-6895us] +/- 102ms
^+ prod-ntp-4.ntp4.ps5.cano> 2 6 377 74 -1343us[-1615us] +/- 99ms
^+ alphyn.canonical.com     2 6 377 13 +5106us[+4755us] +/- 144ms
^+ prod-ntp-5.ntp4.ps5.cano> 2 6 377 9 +24ms[ +24ms] +/- 128ms
^? 203.177.21.122          0 8 0 - +0ns[ +0ns] +/- 0ns
^? 203.177.21.123          0 8 0 - +0ns[ +0ns] +/- 0ns
^? 203.177.21.121          0 8 0 - +0ns[ +0ns] +/- 0ns
^? 203.177.21.124          0 8 0 - +0ns[ +0ns] +/- 0ns
rustom@server3:~$
```

DirectX Diagnostic Tool

System

Display

Sound 1

Sound 2

Input

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Help

Next Page

Save All Information...

Exit

=====
102ms
99ms
144ms
128ms
0ns
0ns
0ns
0ns

```
rustom@server3:~$ openstack --version
openstack 5.8.0
rustom@server3:~$
```



```
Dec 02 22:32:19 server3 mariadbadd[19715]: Version: '10.6.12-MariaDB-0ubuntu2
Dec 02 22:32:19 server3 systemd[1]: Started MariaDB 10.6.12 database serv
Dec 02 22:32:19 server3 /etc/mysql/debian-start[19732]: Upgrading MySQL ta
Dec 02 22:32:19 server3 /etc/mysql/debian-start[19735]: Looking for 'maria
Dec 02 22:32:19 server3 /etc/mysql/debian-start[19735]: Looking for 'maria
Dec 02 22:32:19 server3 /etc/mysql/debian-start[19735]: This installation
Dec 02 22:32:19 server3 /etc/mysql/debian-start[19735]: There is no need t
Dec 02 22:32:19 server3 /etc/mysql/debian-start[19735]: You can use --forc
Dec 02 22:32:19 server3 /etc/mysql/debian-start[19743]: Checking for inco
```

DirectX Diagnostic Tool

System Display Sound 1 Sound 2 Input

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Help Next Page Save All Information... Exit

```
rustom@server3:~$ systemctl status memcached
x memcached.service - memcached daemon
   Loaded: loaded (/lib/systemd/system/memcached.service; enabled; vendor preset: enabled)
   Active: failed (Result: exit-code) since Sat 2023-12-02 22:37:18 CST; 12s ago
     Docs: man:memcached(1)
   Process: 20267 ExecStart=/usr/share/memcached/scripts/systemd-memcached-wrapper /etc/memcached.conf (code=exited, status=1/FAILURE)
  Main PID: 20267 (code=exited, status=1/FAILURE)
    CPU: 125ms

lines 1-7/7 (END)
```

DirectX Diagnostic Tool

System | Display | Sound 1 | Sound 2 | Input

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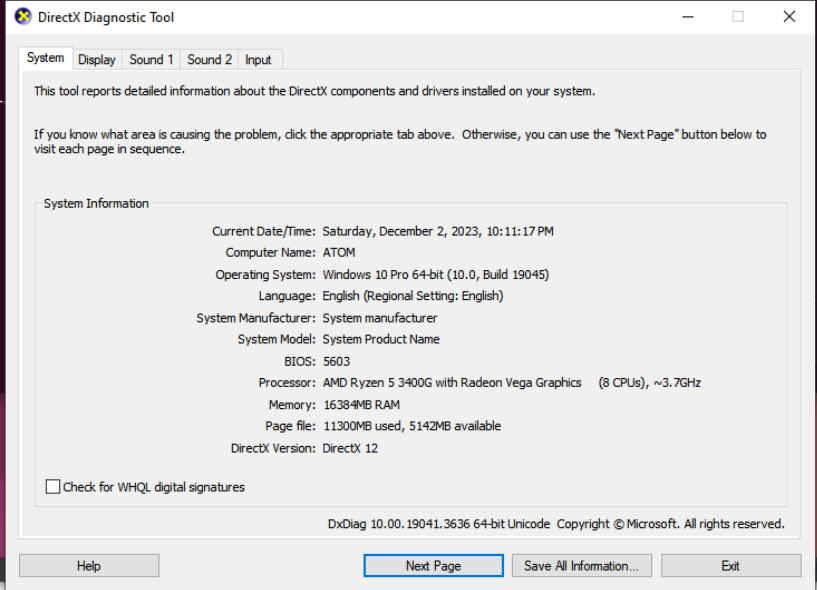
Help | Next Page | Save All Information... | Exit

```

rustom@server3:~$ sudo systemctl status etcd
sudo: systemctl: command not found
rustom@server3:~$ sudo systemctl status etcd
● etcd.service - etcd - highly-available key value store
   Loaded: loaded (/lib/systemd/system/etcd.service; enabled; vendor preset: enabled)
   Active: active (running) since Sat 2023-12-02 22:07:02 CST; 31min ago
     Docs: https://etcd.io/docs
           man:etcd
   Main PID: 2339 (etcd)
      Tasks: 8 (limit: 2261)
     Memory: 11.5M
        CPU: 10.877s
    CGroup: /system.slice/etcd.service
            └─2339 /usr/bin/etcd

Dec 02 22:07:02 server3 etcd[2339]:
Dec 02 22:07:02 server3 etcd[2339]:
Dec 02 22:07:02 server3 etcd[2339]:
Dec 02 22:07:02 server3 etcd[2339]:
Dec 02 22:07:02 server3 etcd[2339]:
Dec 02 22:07:02 server3 etcd[2339]:
Dec 02 22:07:02 server3 etcd[2339]:
Dec 02 22:07:02 server3 etcd[2339]:
Dec 02 22:07:02 server3 systemd[1]:
Dec 02 22:07:02 server3 etcd[2339]:
lines 1-22/22 (END)

```



Reflections:

Answer the following:

1. What are the benefits of implementing OpenStack?

- OpenStack is a flexible, robust cloud infrastructure solution that offers business agility, rapid innovation, scalability, adaptability, efficiency, automation, centralized management, self-service provisioning, high availability, and disaster recovery. It is open-source, vendor-agnostic, and secure. It can be used in private, public, and hybrid cloud environments. However, complex installation and ongoing maintenance are potential challenges.

Conclusions:

- In this activity I will be able to analyze the advantages and disadvantages of cloud services and evaluate different cloud deployment and service models cloud deployment offers cost savings, flexibility, innovation, collaboration, and disaster recovery, but also presents security concerns, vendor lock-in, limited control, and network latency. Ansible is an open-source automation tool that automates the installation and configuration of openstack base services, involving inventory definition, playbook development, execution, and verification.

Github Link: <https://github.com/atomcarino91/HOA13>