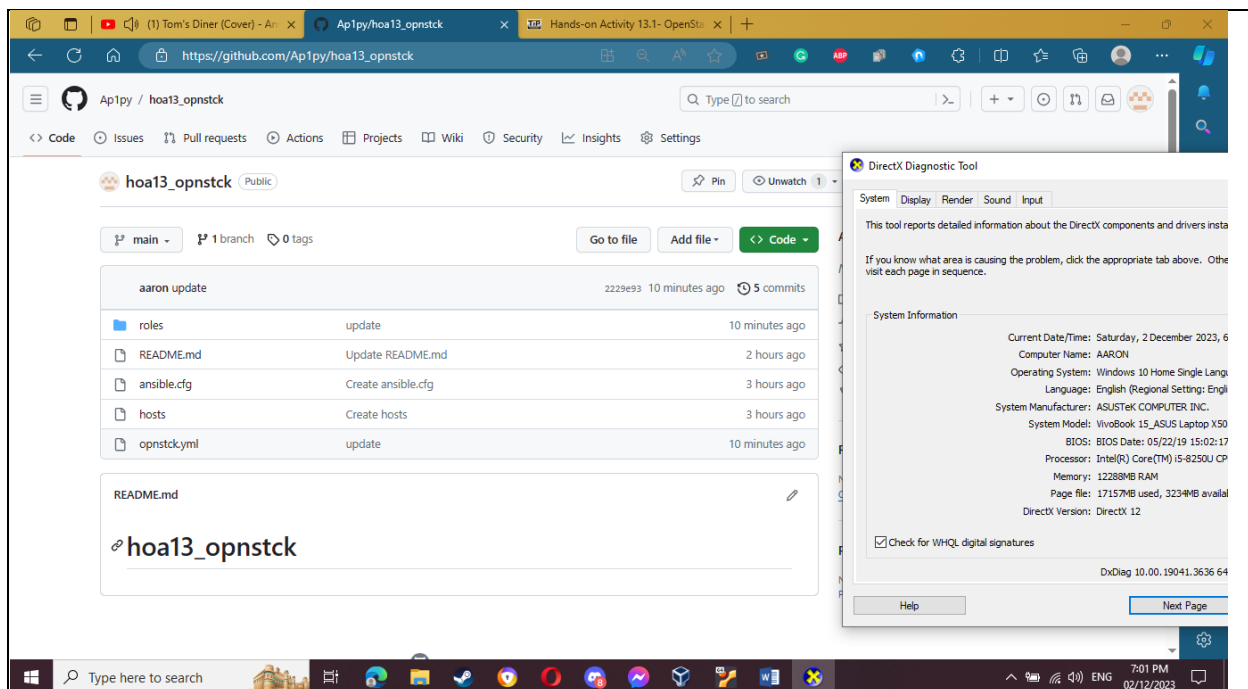
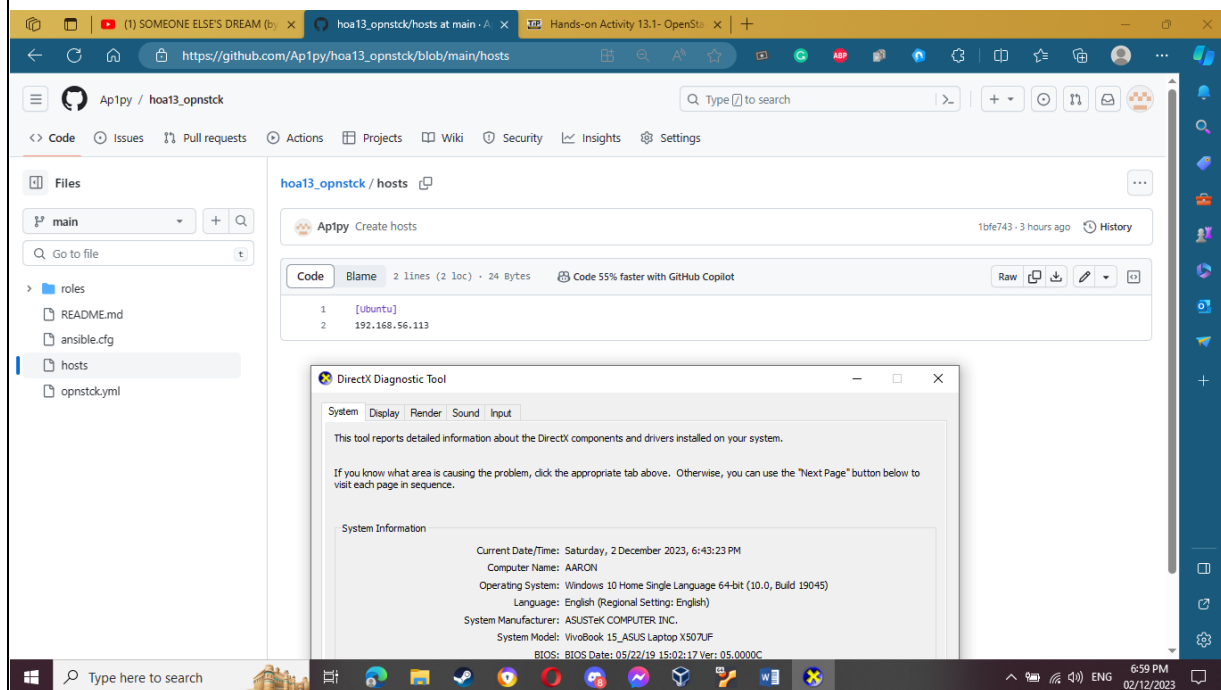


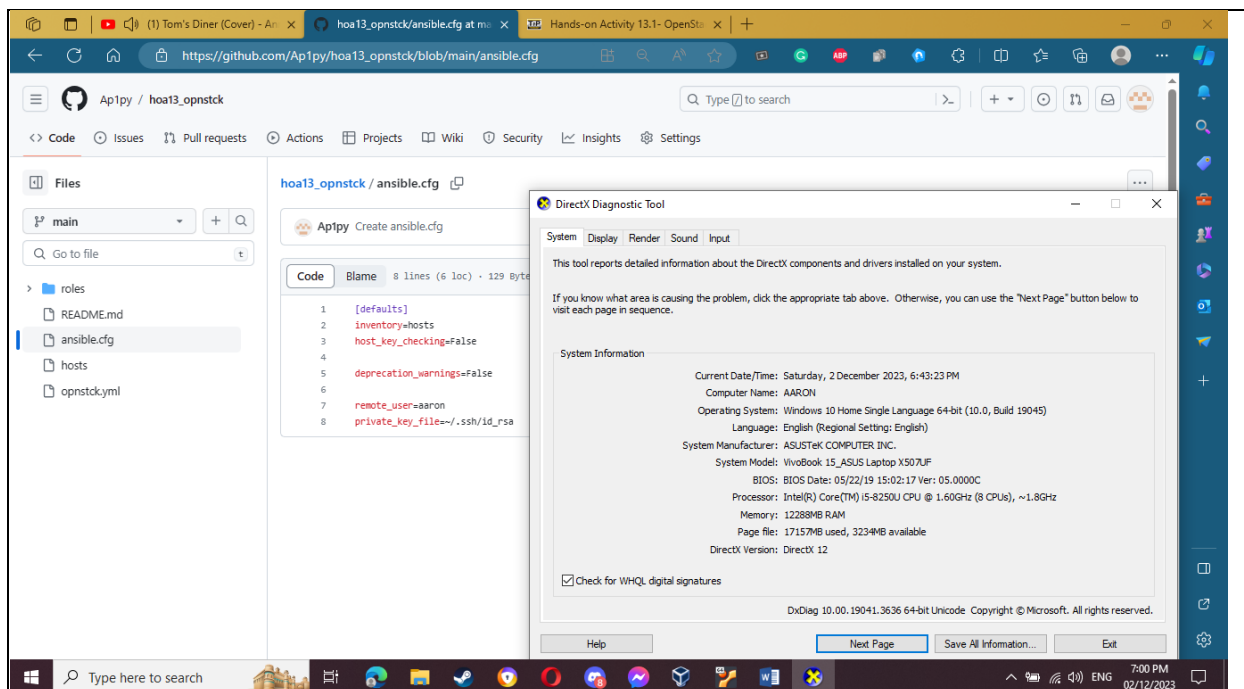
<b>Name: Aaron Martin P. Caro</b>	<b>Date Performed: 02/12/2023</b>
<b>Course/Section: CPE232-CPE31S5</b>	<b>Date Submitted: 02/12/2023</b>
<b>Instructor: Prof. Roman Richard</b>	<b>Semester and SY: 1<sup>st</sup> sem 2023-2024</b>
<b>Activity 13: OpenStack Prerequisite Installation</b>	
<b>1. Objectives</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. NTP</li> <li>b. OpenStack packages</li> <li>c. SQL Database</li> <li>d. Message Queue</li> <li>e. Memcached</li> <li>f. Etcd</li> <li>g. Create different plays in installing per server type (controller, compute etc.) and identify it as a group in Inventory file.</li> <li>h. Add, commit and push it to your GitHub repo.</li> </ol> </li> </ol>	
<b>5. Output</b> (screenshots and explanations)	



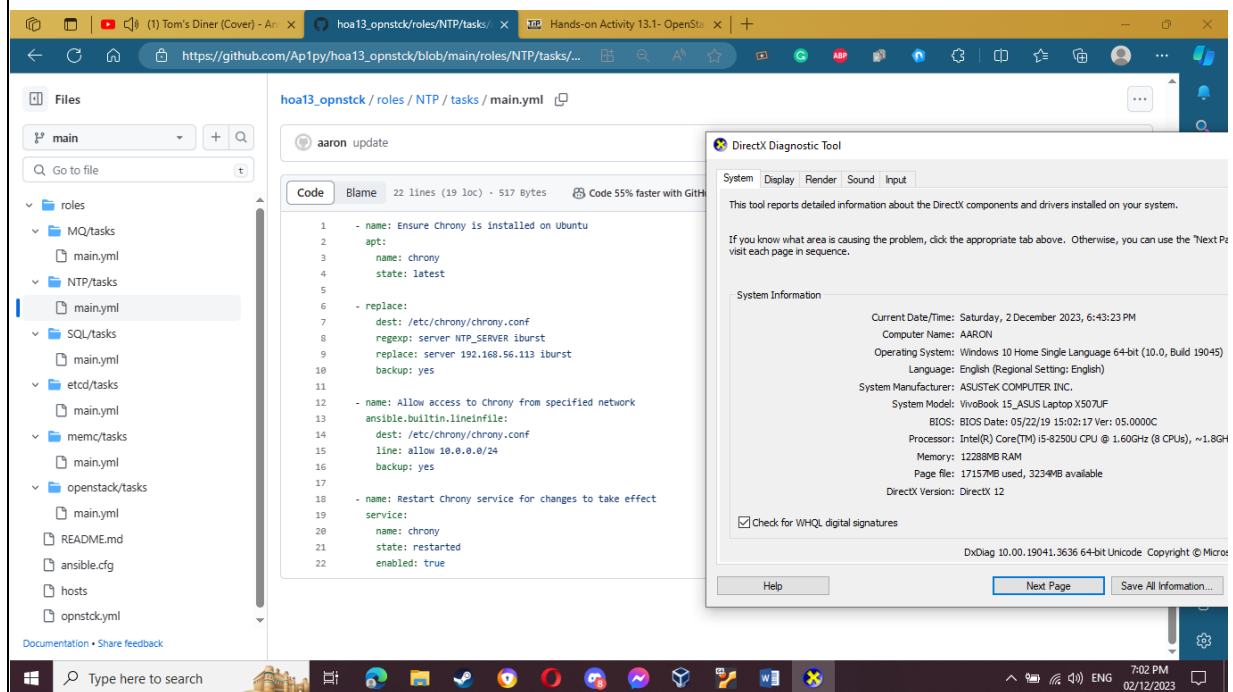
Created the repository the basic configurations for the host and ansible is copied from the previous activities.



Hosts configuration copied from previous activity



Ansible.cfg configuration copied from previous activity



NTP configuration

Screenshot of a Windows desktop showing a GitHub repository for OpenStack tasks. The repository is `hoa13_opnstck/roles/openstack/tasks/main.yml`. The file content is:

```
1 - name: Ensure OpenStack components are installed on Ubuntu
2   apt:
3     name:
4       - nova-compute
5       - python3-openstackclient
6     state: latest
```

A "DirectX Diagnostic Tool" window is open, displaying system information:

- Current Date/Time: Saturday, 2 December 2023, 6:43:23 PM
- Computer Name: AARON
- Operating System: Windows 10 Home Single Language 64-bit (10.0, Build 19045)
- Language: English (Regional Setting: English)
- System Manufacturer: ASUSTek COMPUTER INC.
- System Model: VivoBook 15\_ASUS Laptop X507UF
- BIOS: BIOS Date: 05/22/19 15:02:17 Ver: 05.0000C
- Processor: Intel(R) Core(TM) i5-8250U CPU @ 1.60GHz (8 CPUs), ~1.8GHz
- Memory: 12288MB RAM
- Page file: 17157MB used, 3234MB available
- DirectX Version: DirectX 12

The task is titled "aaron update" and was last updated 11 minutes ago.

## Openstack configuration

Screenshot of a Windows desktop showing a GitHub repository for OpenStack tasks. The repository is `hoa13_opnstck/roles/SQL/tasks/main.yml`. The file content is:

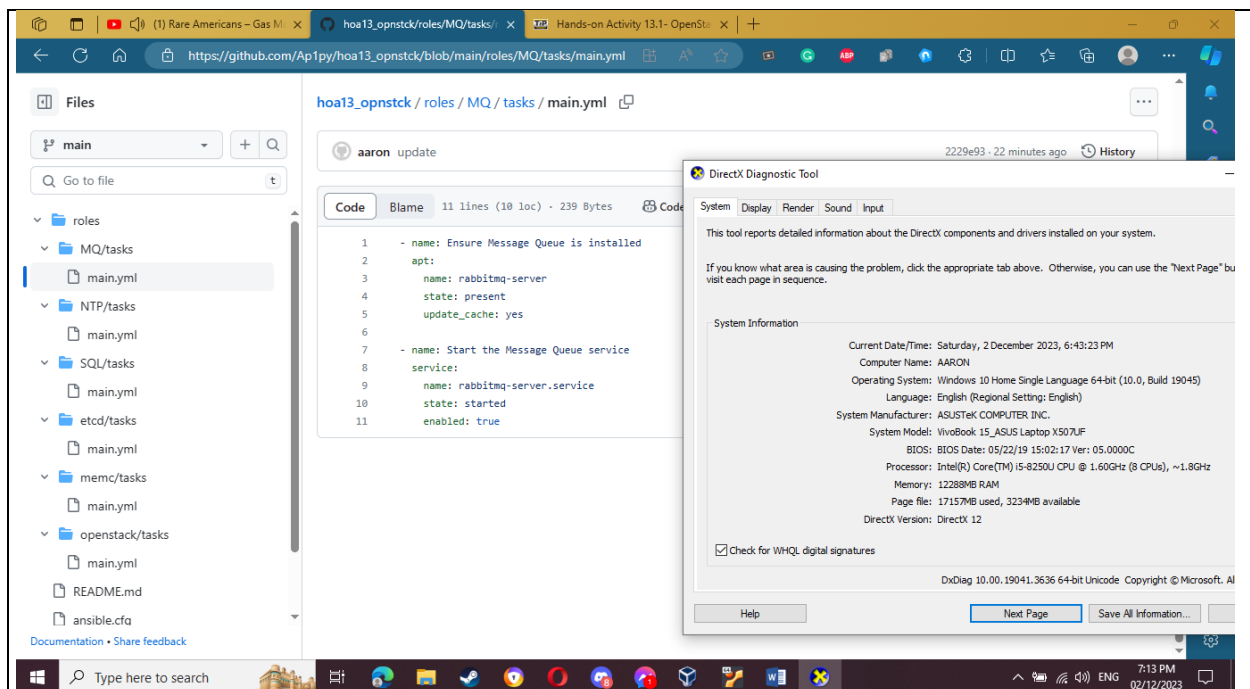
```
1 - name: Install SQL Packages for Ubuntu
2   apt:
3     name:
4       - mariadb-server
5       - python3-mysqldb
6     state: latest
7
8 - name: Create SQL Config File
9   file:
10    path: /etc/mysql/mariadb.conf.d/99-openstack.cnf
11    state: touch
12    owner: root
13    group: root
14    mode: 0777
15
16 - name: Edit SQL Config File
17   lineinfile:
18     dest: /etc/mysql/mariadb.conf.d/99-openstack.cnf
19     line: "[[ ! -f ]]>"
20     state: present
21     backup: yes
22     with_items:
23       - '[mysqld]'
24       - '[mysqld]'
25       - '[mysqld]'
26       - '[mysqld]'
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98       - '[mysqld]'
99       - '[mysqld]'
100      - '[mysqld]'
```

A "DirectX Diagnostic Tool" window is open, displaying system information:

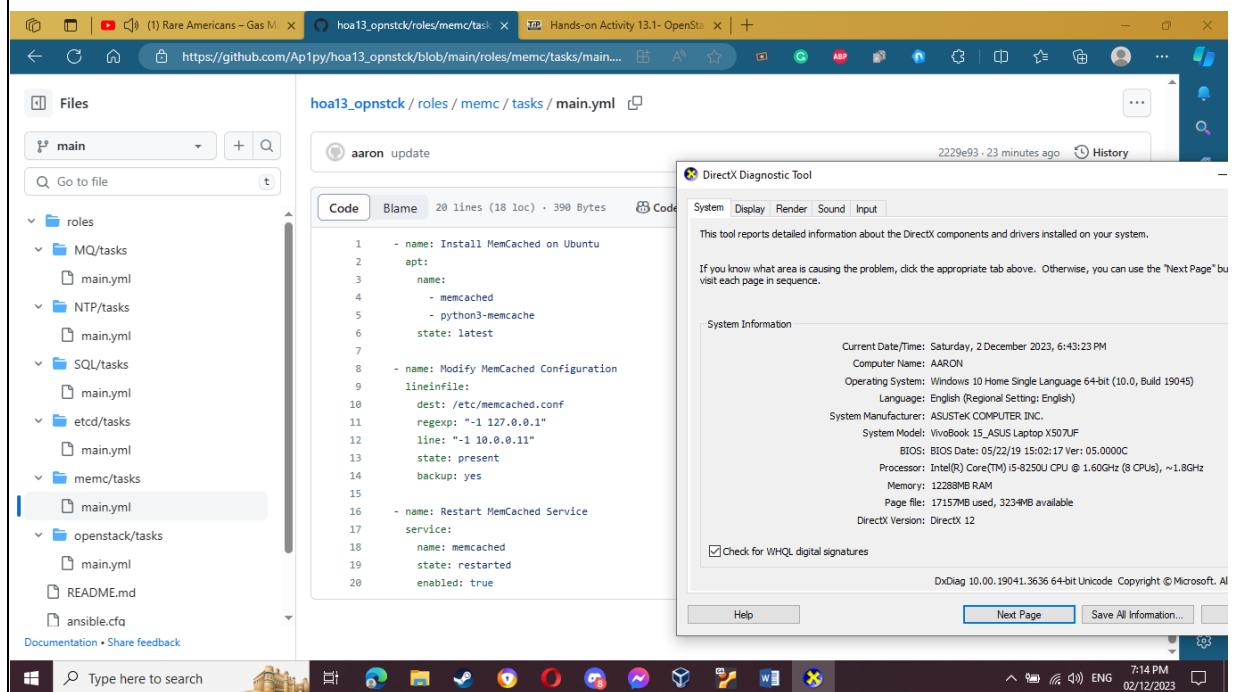
- Current Date/Time: Saturday, 2 December 2023, 6:43:23 PM
- Computer Name: AARON
- Operating System: Windows 10 Home Single Language 64-bit (10.0, Build 19045)
- Language: English (Regional Setting: English)
- System Manufacturer: ASUSTek COMPUTER INC.
- System Model: VivoBook 15\_ASUS Laptop X507UF
- BIOS: BIOS Date: 05/22/19 15:02:17 Ver: 05.0000C
- Processor: Intel(R) Core(TM) i5-8250U CPU @ 1.60GHz (8 CPUs), ~1.8GHz
- Memory: 12288MB RAM
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The task is titled "aaron update" and was last updated 11 minutes ago.

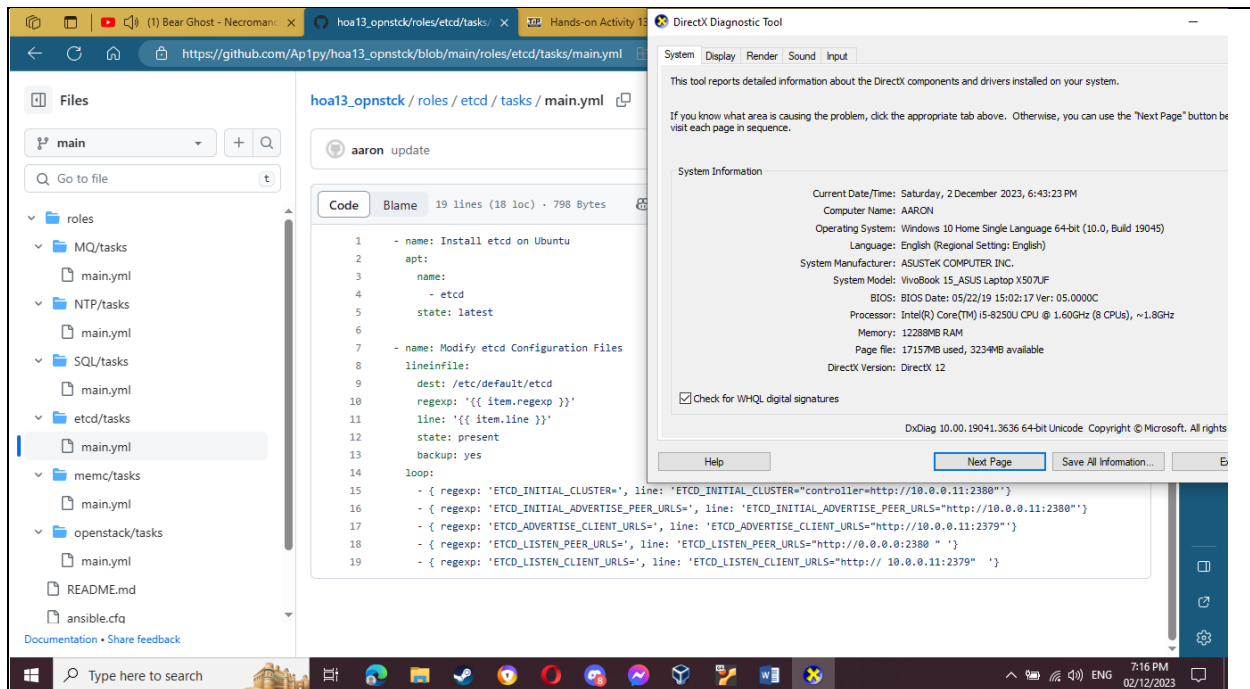
## SQL configuration



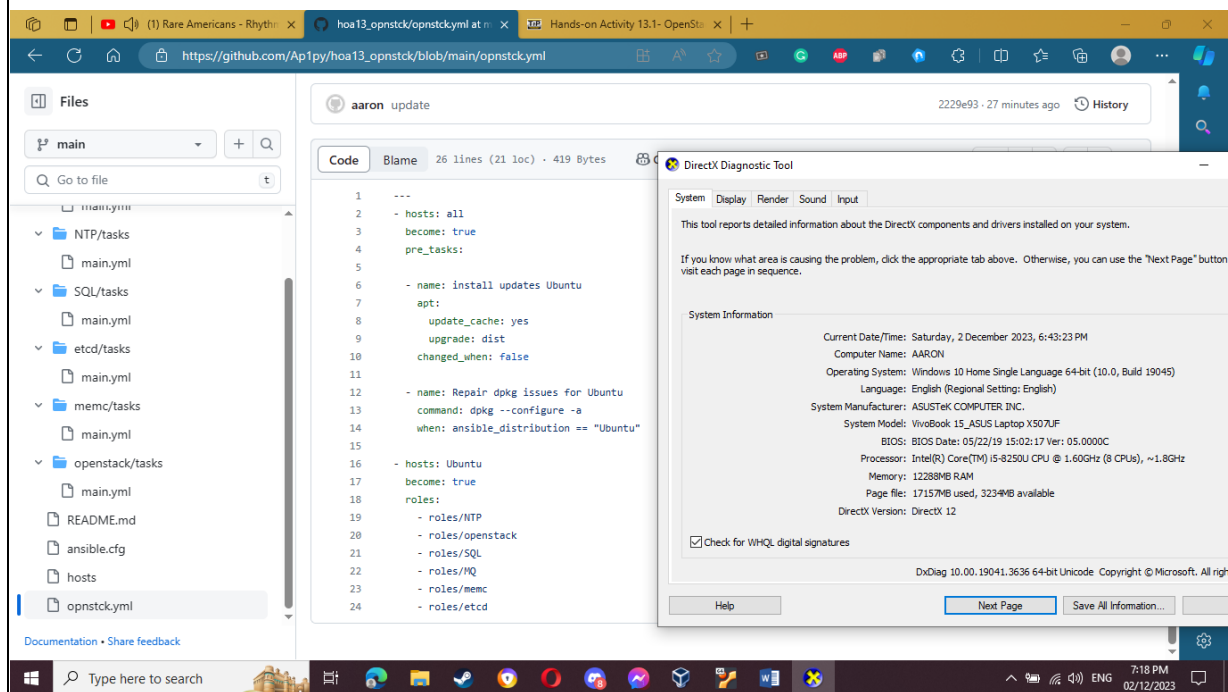
## Message que configuration



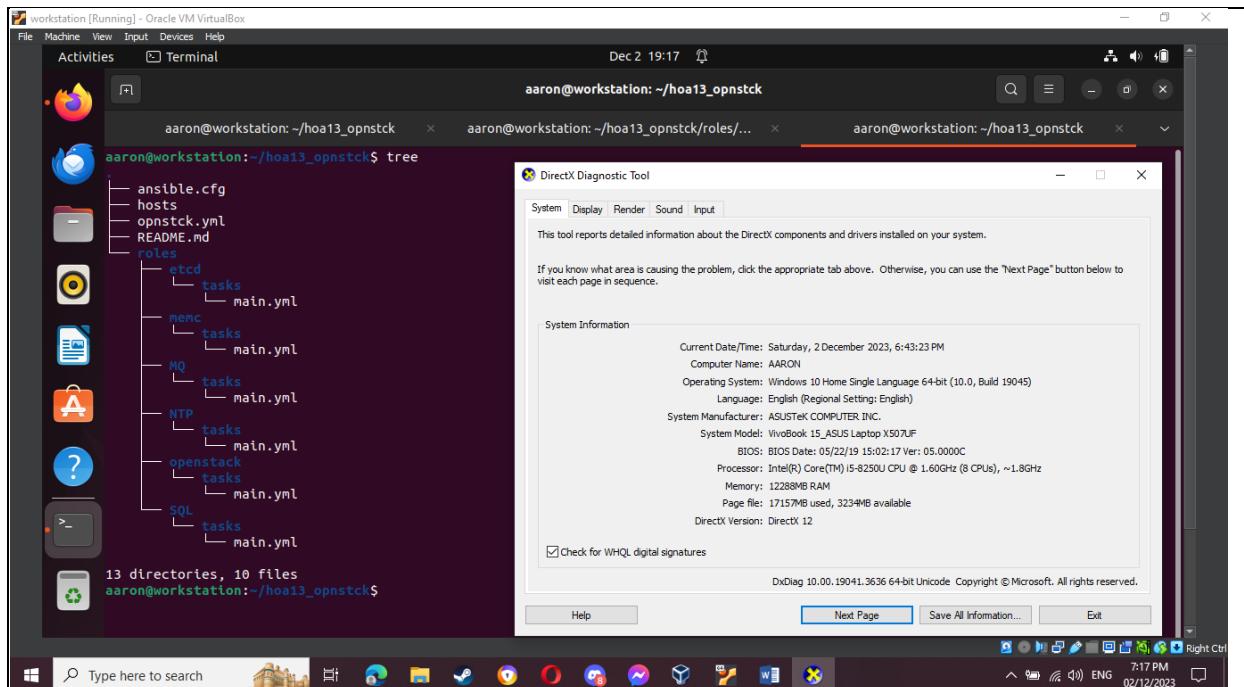
## Memcached installation configuration



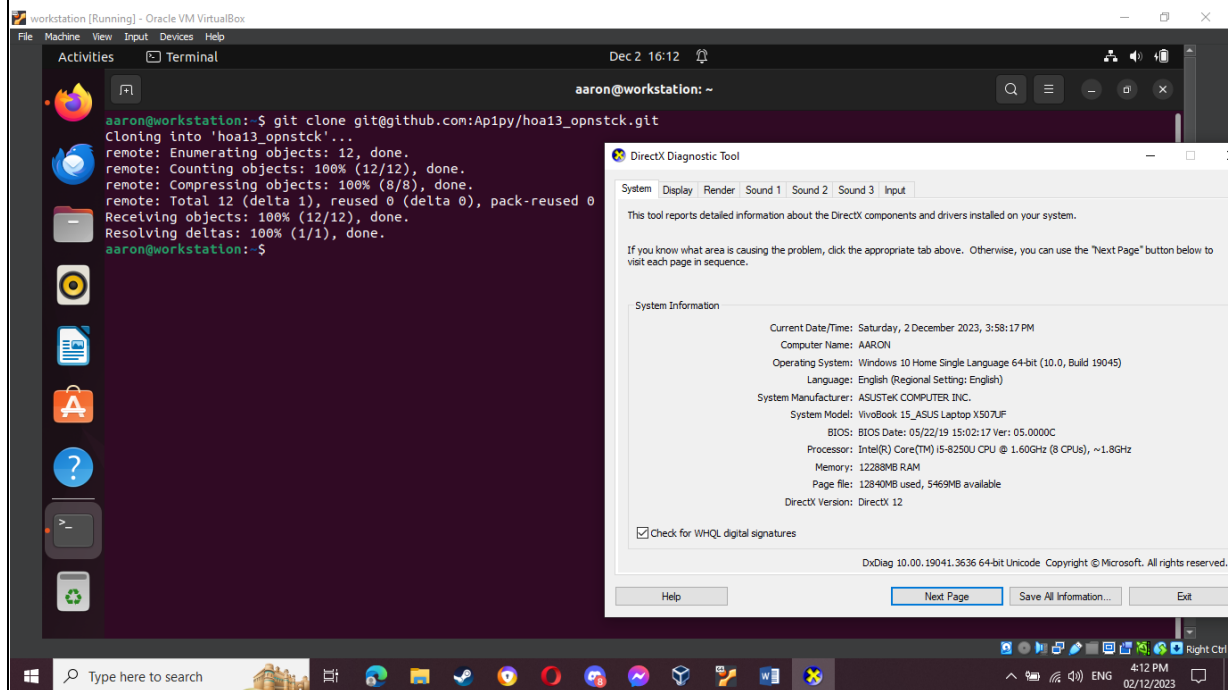
## Etcd installation configuration



The configuration for the playbook that will call the roles.

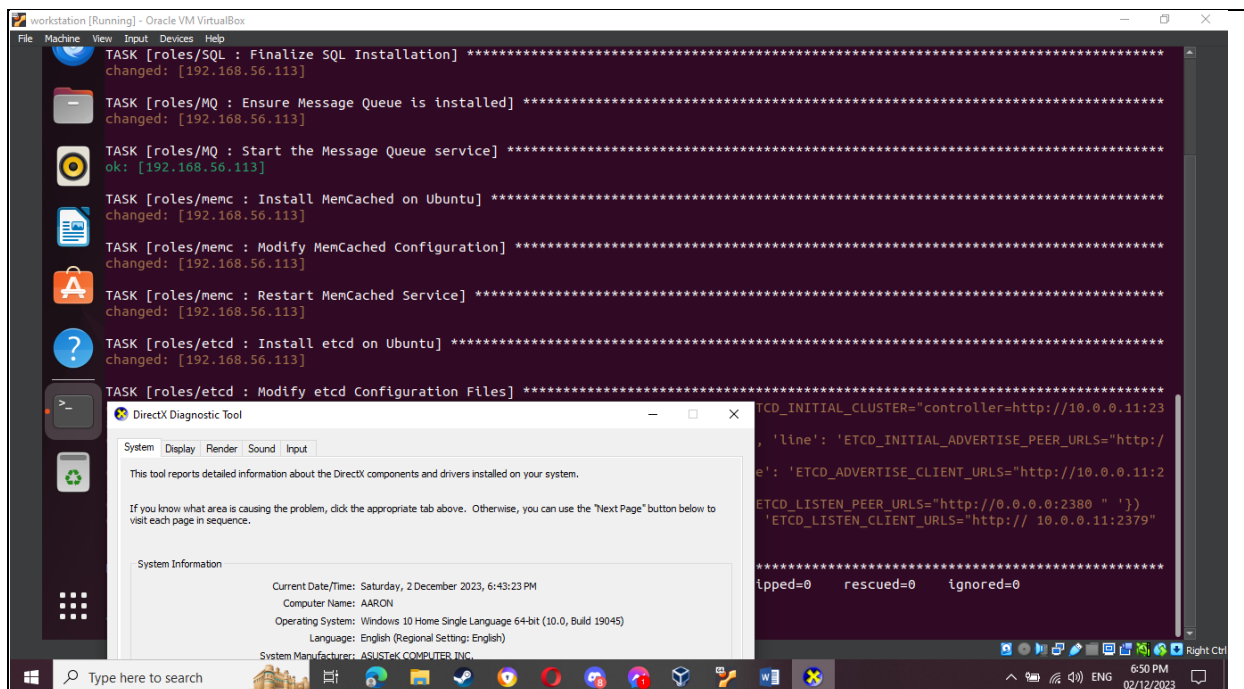


## Repository structure

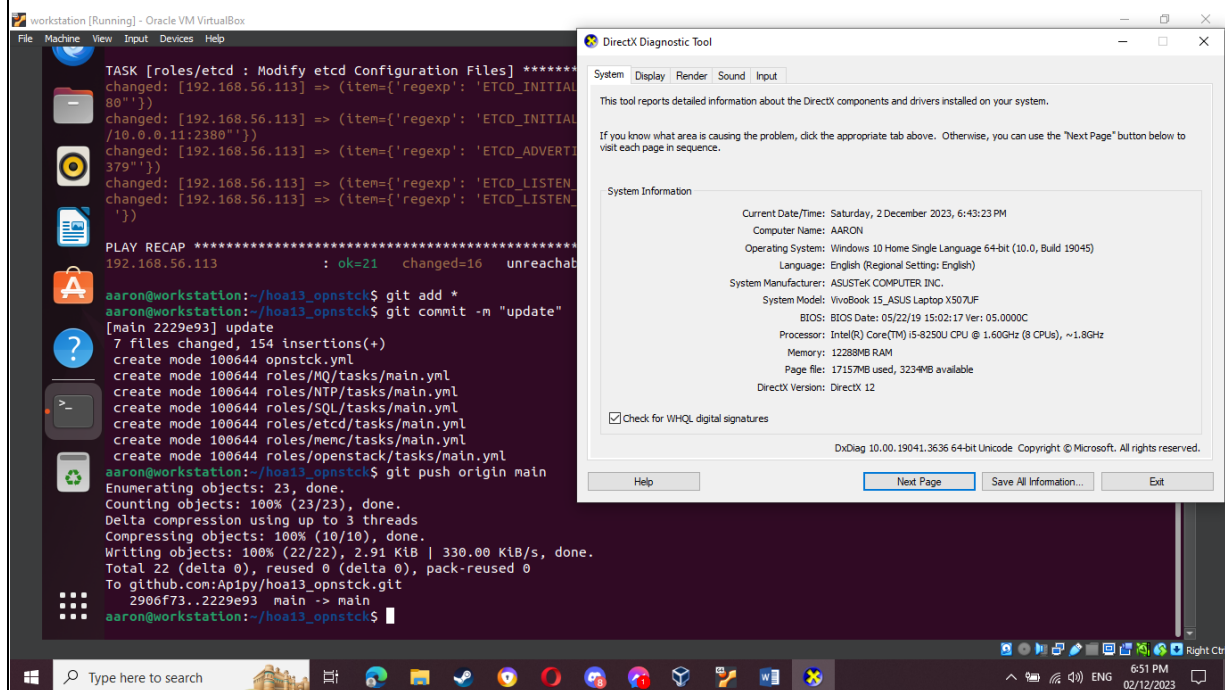


## Cloning the repository.



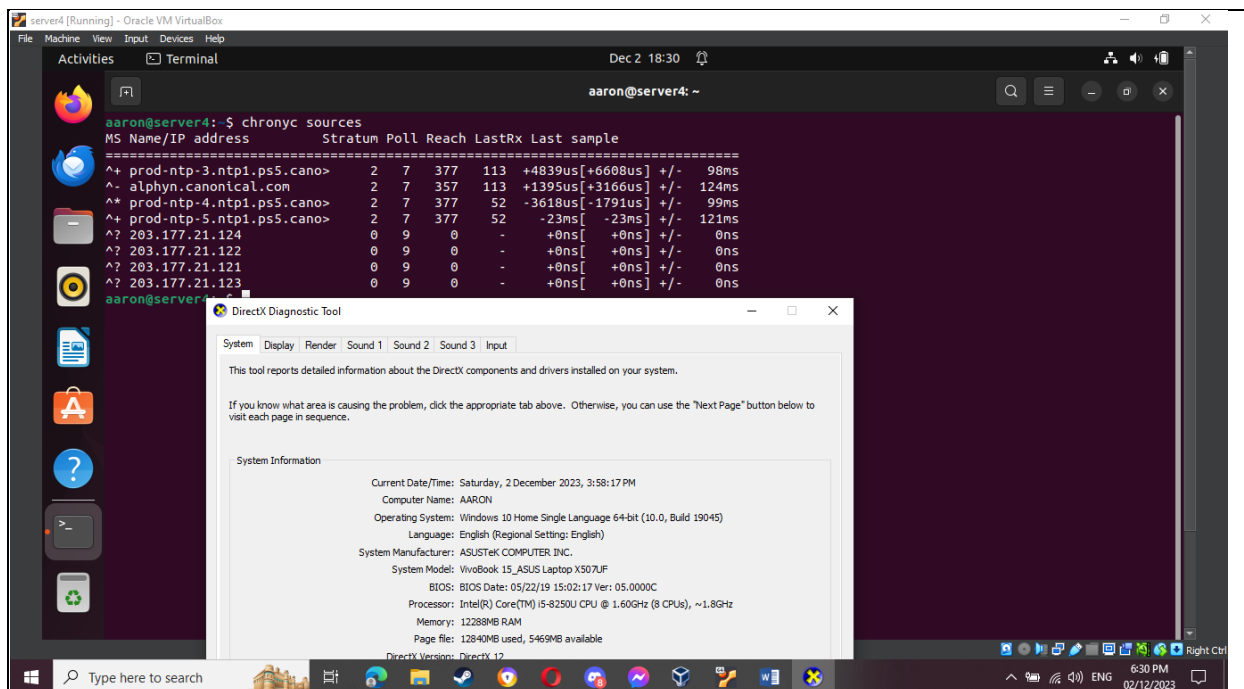


## running the playbook

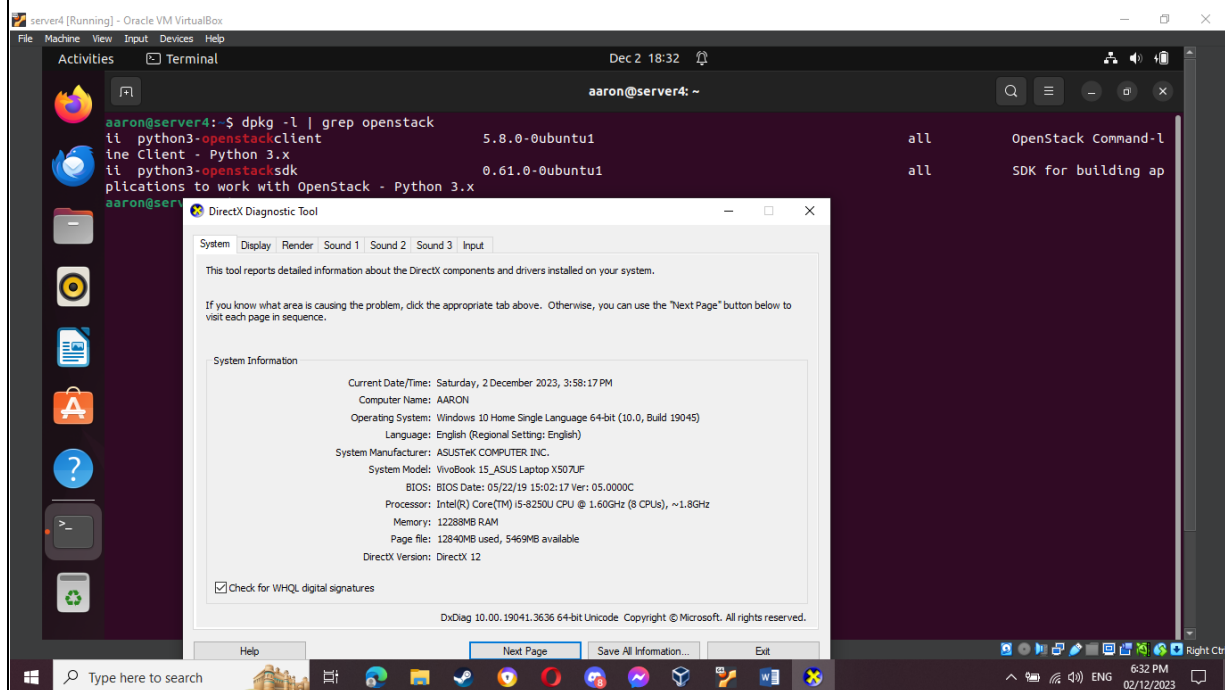


## updating the repository

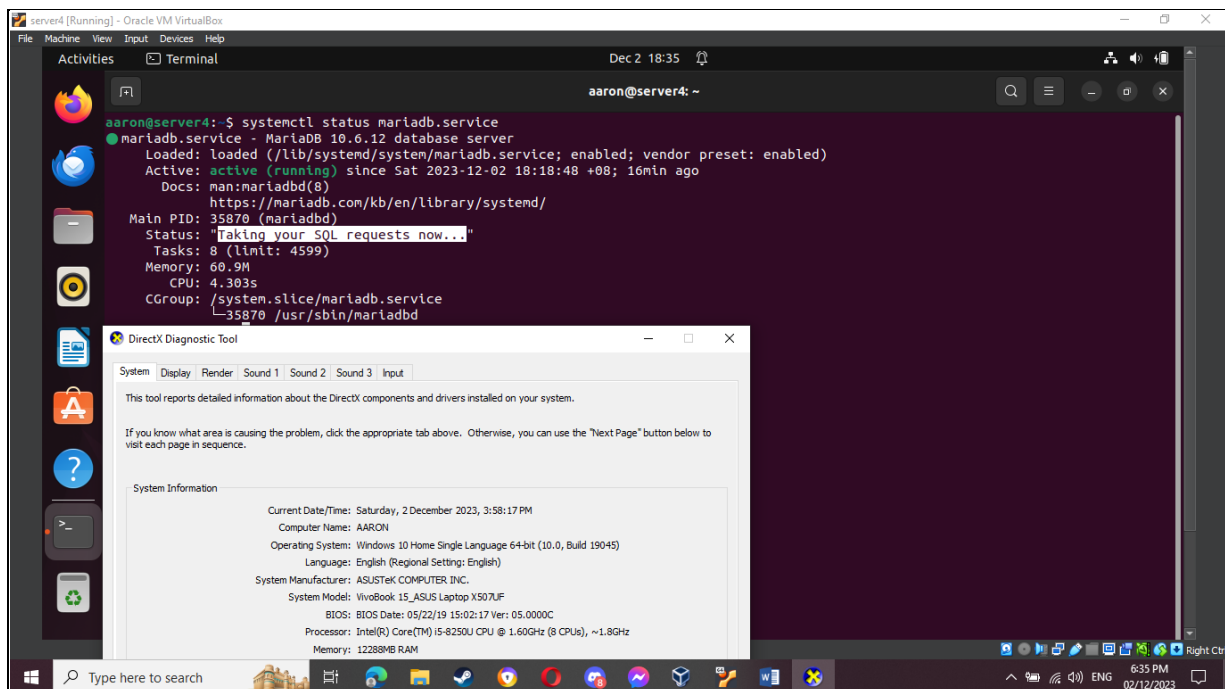




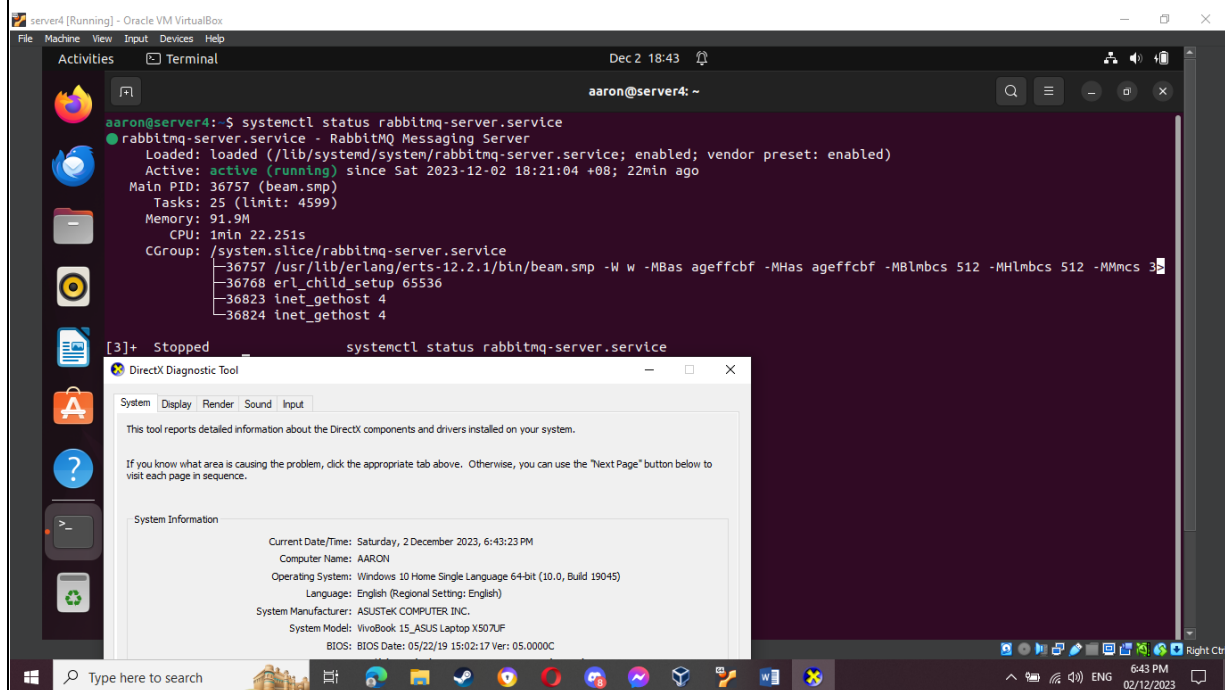
## NTP installation confirmation



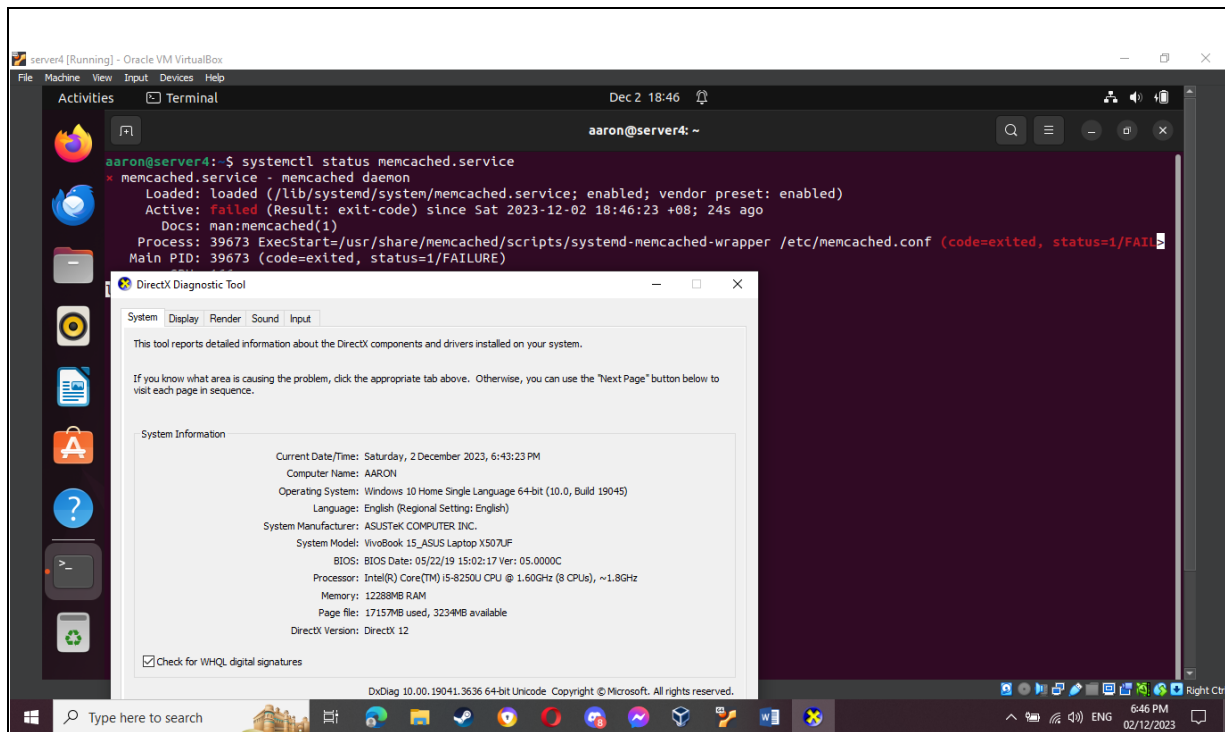
## openstack installation confirmation



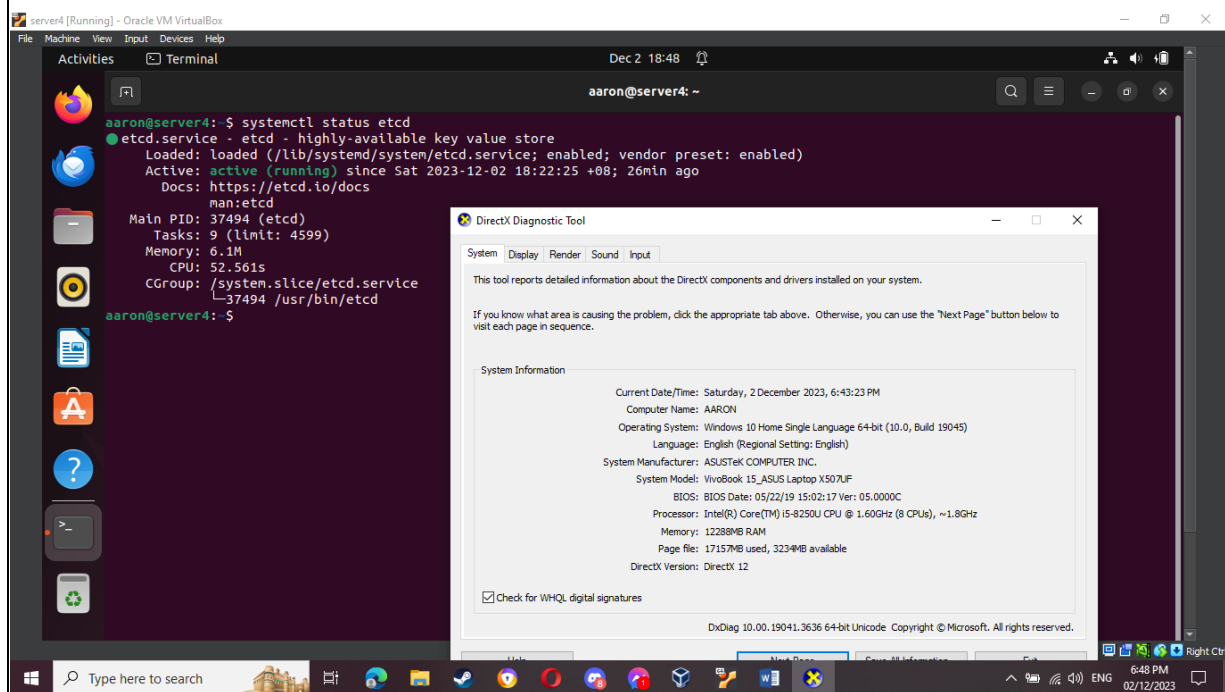
## SQL installation confirmation



## Message Que installation confirmation



memcached installation confirmation



ETCd installation confirmation

**Reflections:**

Answer the following:

1. What are the benefits of implementing OpenStack?

Executing OpenStack gives associations a versatile, adaptable, and cost-productive distributed computing stage. It prevents vendor lock-in by providing freedom of choice for hardware and software. OpenStack upholds private cloud organizations, empowering upgraded command over information security and consistency. With crossover cloud support, associations can incorporate assets flawlessly across open and confidential mists. Autonomy and coordination abilities smooth out activities, diminishing manual mediation and helping effectiveness. Regular updates and enhancements are made possible by the active open-source community, and API compatibility makes it easier to integrate with other cloud services. The open standards, customization options, and security features of OpenStack make it appealing to businesses looking for a robust cloud infrastructure solution. Effective execution requires cautious preparation and progressing the board.

**Conclusions:**

In conclusion, businesses looking for a flexible and effective cloud computing platform will find that OpenStack is an effective option. Scalability, adaptability, cost-effectiveness, vendor neutrality, and support for private and hybrid cloud deployments are among its advantages. Organizations can use the platform's automation capabilities, security features, and the active open-source community to build and manage cloud infrastructure tailored to their specific requirements. Nonetheless, effective execution requires cautious preparation and continuous administration to understand the upsides of this open-source arrangement completely. As the distributed computing scene develops, OpenStack remains a convincing decision for those focusing on customization, control, and similarity in their cloud surroundings.