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Course/Section: CPE31S5	Date Submitted: 10/12/2023
Instructor: Engr. Roman Richard	Semester and SY: 1 st semester & 2023-2024

Activity 6: Targeting Specific Nodes and Managing Services

1. Objectives:

- 1.1 Individualize hosts
- 1.2 Apply tags in selecting plays to run
- 1.3 Managing Services from remote servers using playbooks

2. Discussion:

In this activity, we try to individualize hosts. For example, we don't want apache on all our servers, or maybe only one of our servers is a web server, or maybe we have different servers like database or file servers running different things on different categories of servers and that is what we are going to take a look at in this activity.

We also try to manage services that do not automatically run using the automations in playbook. For example, when we install web servers or httpd for CentOS, we notice that the service did not start automatically.

Requirement:

In this activity, you will need to create another Ubuntu VM and name it Server 3. Likewise, you need to activate the second adapter to a host-only adapter after the installations. Take note of the IP address of the Server 3. Make sure to use the command **ssh-copy-id** to copy the public key to Server 3. Verify if you can successfully SSH to Server 3.

Task 1: Targeting Specific Nodes

1. Create a new playbook and named it site.yml. Follow the commands as shown in the image below. Make sure to save the file and exit.

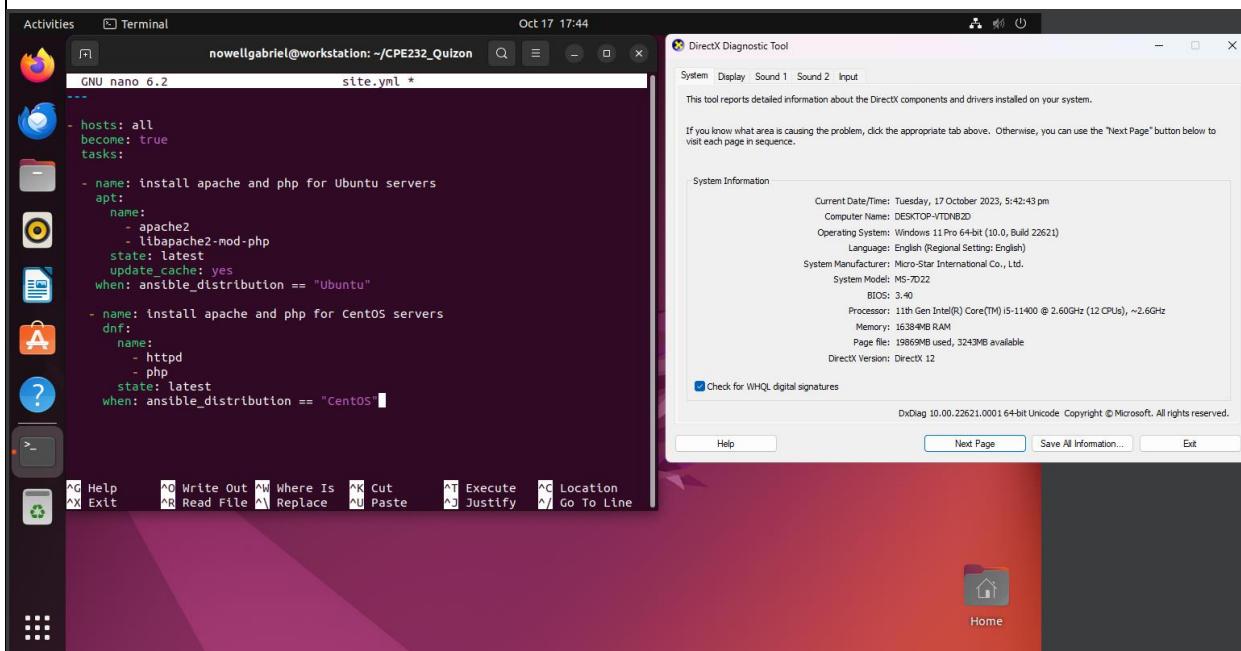
```

---
- hosts: all
  become: true
  tasks:

    - name: install apache and php for Ubuntu servers
      apt:
        name:
          - apache2
          - libapache2-mod-php
        state: latest
        update_cache: yes
      when: ansible_distribution == "Ubuntu"

    - name: install apache and php for CentOS servers
      dnf:
        name:
          - httpd
          - php
        state: latest
      when: ansible_distribution == "CentOS"

```



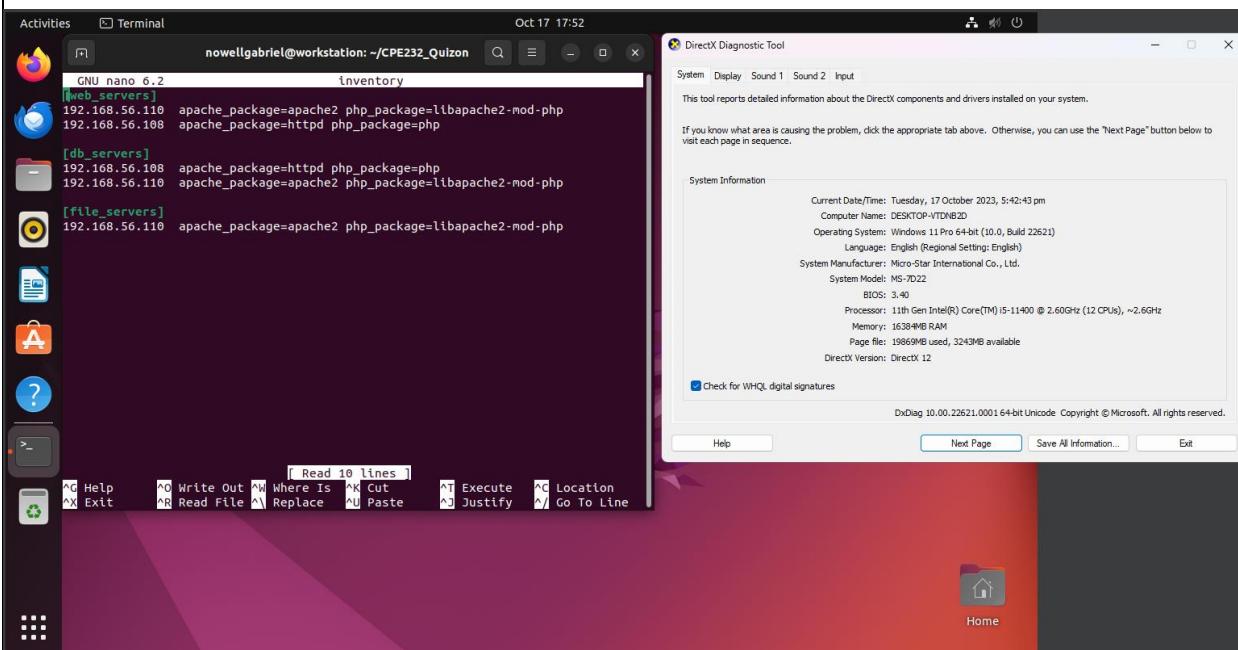
2. Edit the inventory file. Remove the variables we put in our last activity and group according to the image shown below:

```
[web_servers]
192.168.56.120
192.168.56.121

[db_servers]
192.168.56.122

[file_servers]
192.168.56.123
```

Make sure to save the file and exit.



Right now, we have created groups in our inventory file and put each server in its own group. In other cases, you can have a server be a member of multiple groups, for example you have a test server that is also a web server.

3. Edit the *site.yml* by following the image below:

```
---  
- hosts: all  
  become: true  
  pre_tasks:  
    - name: install updates (CentOS)  
      dnf:  
        update_only: yes  
        update_cache: yes  
      when: ansible_distribution == "CentOS"  
  
    - name: install updates (Ubuntu)  
      apt:  
        upgrade: dist  
        update_cache: yes  
      when: ansible_distribution == "Ubuntu"  
  
- hosts: web_servers  
  become: true  
  tasks:  
    - name: install apache and php for Ubuntu servers  
      apt:  
        name:  
          - apache2  
          - libapache2-mod-php  
        state: latest  
      when: ansible_distribution == "Ubuntu"  
  
    - name: install apache and php for CentOS servers  
      dnf:  
        name:  
          - httpd  
          - php  
        state: latest  
      when: ansible_distribution == "CentOS"
```

Make sure to save the file and exit.

The screenshot shows a Linux desktop environment with a terminal window and a DirectX Diagnostic Tool window.

Terminal Window Content:

```
nowellgabriel@workstation:~/CPE232_Quizon$ nano site.yml
GNU nano 6.2          site.yml
dnf:
  update_only: yes
  update_cache: yes
when: ansible_distribution == "CentOS"
- name: install updates (Ubuntu)
  apt:
    upgrade: dist
    update_cache: yes
  when: ansible_distribution == "Ubuntu"
- hosts: web_servers
  become: true
  tasks:
    - name: install apache and php for Ubuntu servers
      apt:
        name:
          - apache2
          - libapache2-mod-php
        state: latest
      when: ansible_distribution == "Ubuntu"
    - name: install apache and php for CentOS servers
      dnf:
        name:
```

DirectX Diagnostic Tool Window:

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

System Information:

- Current Date/Time: Tuesday, 17 October 2023, 5:42:43 pm
- Computer Name: DESKTOP-VTNB2D
- Operating System: Windows 11 Pro 64-bit (10.0, Build 22621)
- Language: English (Regional Setting: English)
- System Manufacturer: Micro-Star International Co., Ltd.
- System Model: MS-7022
- BIOS: 3.40
- Processor: 11th Gen Intel(R) Core(TM) i5-11400 @ 2.60GHz (12 CPUs), ~2.6GHz
- Memory: 16384MB RAM
- Page file: 19869MB used, 3243MB available
- DirectX Version: DirectX 12

Buttons:

- Check for WHQL digital signatures
- Help
- Next Page
- Save All Information...
- Exit

The **pre-tasks** command tells the ansible to run it before any other thing. In the **pre-tasks**, CentOS will install updates while Ubuntu will upgrade its distribution package. This will run before running the second play, which is targeted at **web_servers**. In the second play, apache and php will be installed on both Ubuntu servers and CentOS servers.

Run the **site.yml** file and describe the result.

The screenshot shows a Linux desktop environment with a terminal window and a DirectX Diagnostic Tool window.

Terminal Window Content:

```
nowellgabriel@workstation:~/CPE232_Quizon$ sudo nano site.yml
nowellgabriel@workstation:~/CPE232_Quizon$ ansible-playbook --ask-become-pass site.yml
BECOME password:
PLAY [all] *****
TASK [Gathering Facts] *****
ok: [192.168.56.110]
ok: [192.168.56.108]

TASK [Install updates (CentOS)] *****
skipping: [192.168.56.110]
ok: [192.168.56.108]

TASK [Install updates (Ubuntu)] *****
skipping: [192.168.56.108]
ok: [192.168.56.110]

PLAY [web_servers] *****
TASK [Gathering Facts] *****
ok: [192.168.56.110]
ok: [192.168.56.108]

TASK [Install apache and php for Ubuntu servers] *****
skipping: [192.168.56.108]
ok: [192.168.56.110]

TASK [Install apache and php for CentOS servers] *****
skipping: [192.168.56.110]
ok: [192.168.56.108]

PLAY RECAP *****
192.168.56.108 : ok=4    changed=0   unreachable=0   failed=0   skipped=2   rescued=0   ignored=0
192.168.56.110 : ok=4    changed=0   unreachable=0   failed=0   skipped=2   rescued=0   ignored=0
```

DirectX Diagnostic Tool Window:

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

System Information:

- Current Date/Time: Tuesday, 17 October 2023, 5:42:43 pm
- Computer Name: DESKTOP-VTNB2D
- Operating System: Windows 11 Pro 64-bit (10.0, Build 22621)
- Language: English (Regional Setting: English)
- System Manufacturer: Micro-Star International Co., Ltd.
- System Model: MS-7022
- BIOS: 3.40
- Processor: 11th Gen Intel(R) Core(TM) i5-11400 @ 2.60GHz (12 CPUs), ~2.6GHz
- Memory: 16384MB RAM
- Page file: 19869MB used, 3243MB available
- DirectX Version: DirectX 12

Buttons:

- Check for WHQL digital signatures
- Help
- Next Page
- Save All Information...
- Exit

- After running the file, I saw that it did the tasks according to its order.
4. Let's try to edit again the *site.yml* file. This time, we are going to add plays targeting the other servers. This time we target the *db_servers* by adding it on the current *site.yml*. Below is an example: (Note add this at the end of the playbooks from task 1.3.

```
- hosts: db_servers
become: true
tasks:

- name: install mariadb package (Centos)
  yum:
    name: mariadb-server
    state: latest
  when: ansible_distribution == "CentOS"

- name: "Mariadb- Restarting/Enabling"
  service:
    name: mariadb
    state: restarted
    enabled: true

- name: install mariadb packege (Ubuntu)
  apt:
    name: mariadb-server
    state: latest
  when: ansible_distribution == "Ubuntu"
```

Make sure to save the file and exit.

The screenshot shows a Linux desktop environment with a terminal window open. The terminal window title is "nowellgabriel@workstation: ~/CPE232_Quizon" and it contains the following Ansible playbooks:

```
GNU nano 6.2          site.yml

hosts: all
become: true
pre_tasks:
- name: install updates (CentOS)
  yum:
    update_only: yes
    update_cache: yes
  when: ansible_distribution == "CentOS"
- name: install updates (Ubuntu)
  apt:
    upgrade: dist
    update_cache: yes
  when: ansible_distribution == "Ubuntu"
hosts: web_servers
become: true
tasks:
- name: install apache and php for Ubuntu servers
  apt:
    - apache2
    - libapache2-mod-php
  state: latest
  when: ansible_distribution == "Ubuntu"
- name: install apache and php for CentOS servers
  yum:
    name:
      - httpd
      - php
```

Below the terminal window is a menu bar with icons for various applications like a browser, file manager, and system tools. A status bar at the bottom shows keyboard shortcuts for operations like Help, Write Out, Read File, Where Is, Replace, Cut, Paste, Execute, Justify, Location, and Go To Line.

A separate window titled "DirectX Diagnostic Tool" is also visible, displaying system information and processor details.

Run the **site.yml** file and describe the result.

The screenshot shows the same Linux desktop environment after running the "site.yml" file. The terminal window now displays the execution log of the Ansible playbooks:

```
TASK [Gathering Facts] *****
ok: [192.168.56.108]
ok: [192.168.56.109]

TASK [install apache and php for Ubuntu servers] *****
skipping: [192.168.56.108]
ok: [192.168.56.109]

TASK [install apache and php for CentOS servers] *****
skipping: [192.168.56.109]
ok: [192.168.56.108]

PLAY [db_servers] *****
TASK [Gathering Facts] *****
ok: [192.168.56.108]
ok: [192.168.56.109]

TASK [install mariadb package (Ubuntu)] *****
skipping: [192.168.56.108]
ok: [192.168.56.109]

TASK [Mariadb - Restart/Enabling] *****
changed: [192.168.56.109]
changed: [192.168.56.108]

TASK [install mariadb package (CentOS)] *****
skipping: [192.168.56.109]
ok: [192.168.56.108]

PLAY RECAP *****
192.168.56.108      : ok=7    changed=1    unreachable=0    failed=0    skipped=3    resp=0
192.168.56.109      : ok=7    changed=1    unreachable=0    failed=0    skipped=3    resp=0
```

The terminal prompt shows the command "sudo nano site.yml" and the password entry field.

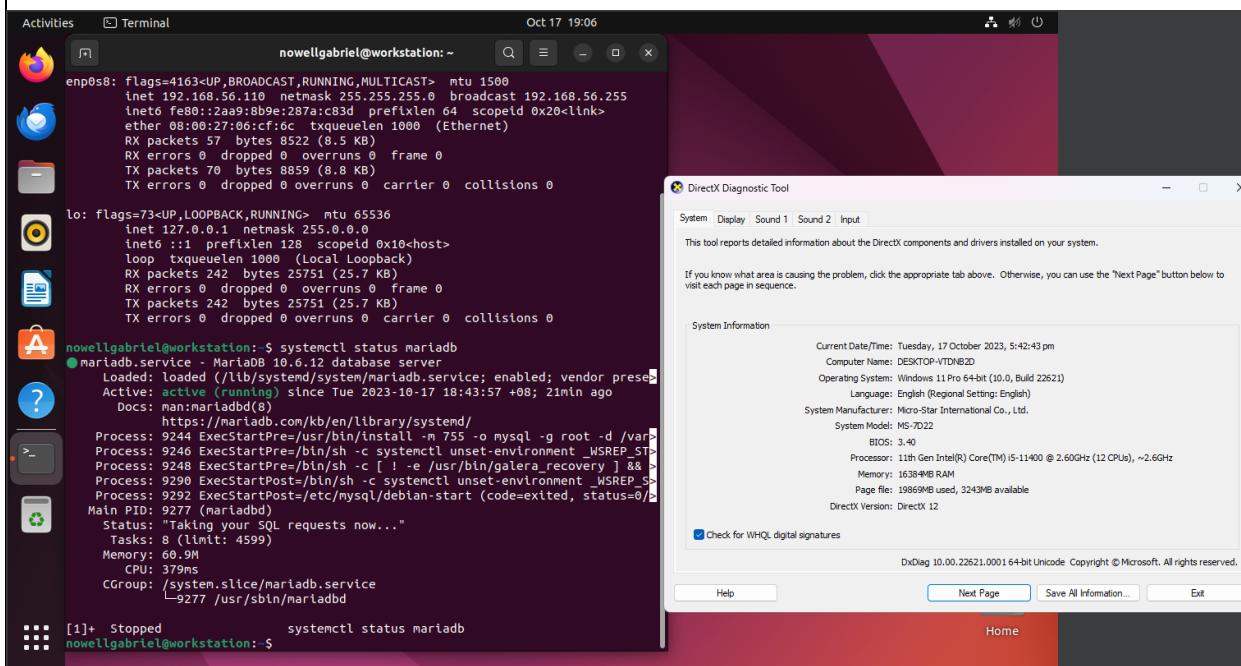
The "DirectX Diagnostic Tool" window remains open, showing the same system information and processor details as before.

5. Go to the remote server (Ubuntu) terminal that belongs to the db_servers group and check the status for mariadb installation using the command: ***systemctl status mariadb***. Do this on the CentOS server also.

Describe the output.

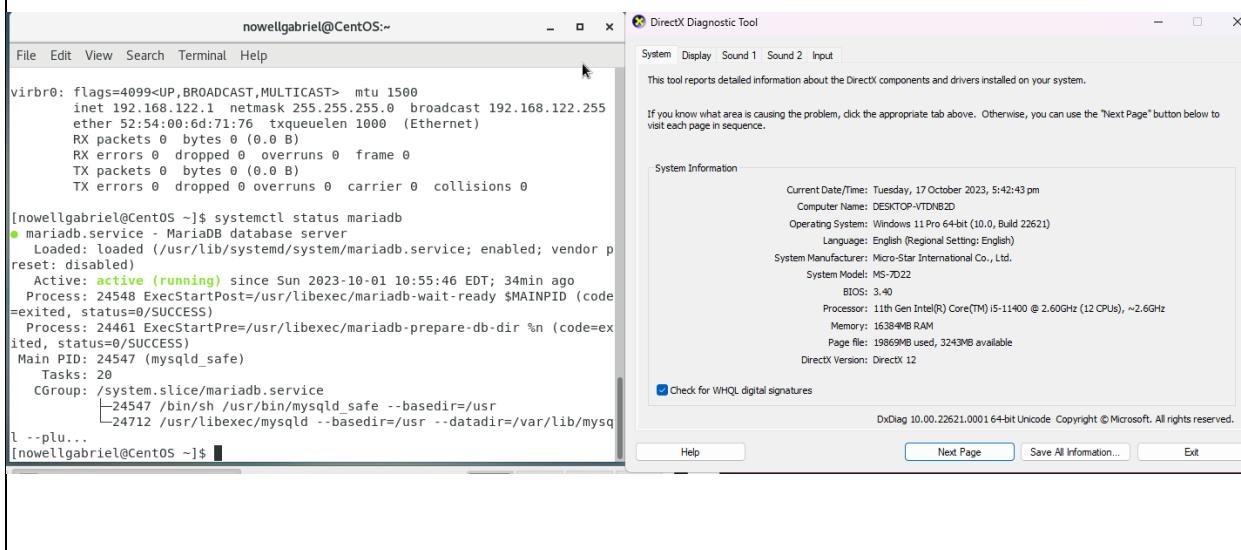
Ubuntu:

It showed that the mariadb is present and active.



CentOS:

Same as the one for Ubuntu, it showed that mariadb is installed and also active.

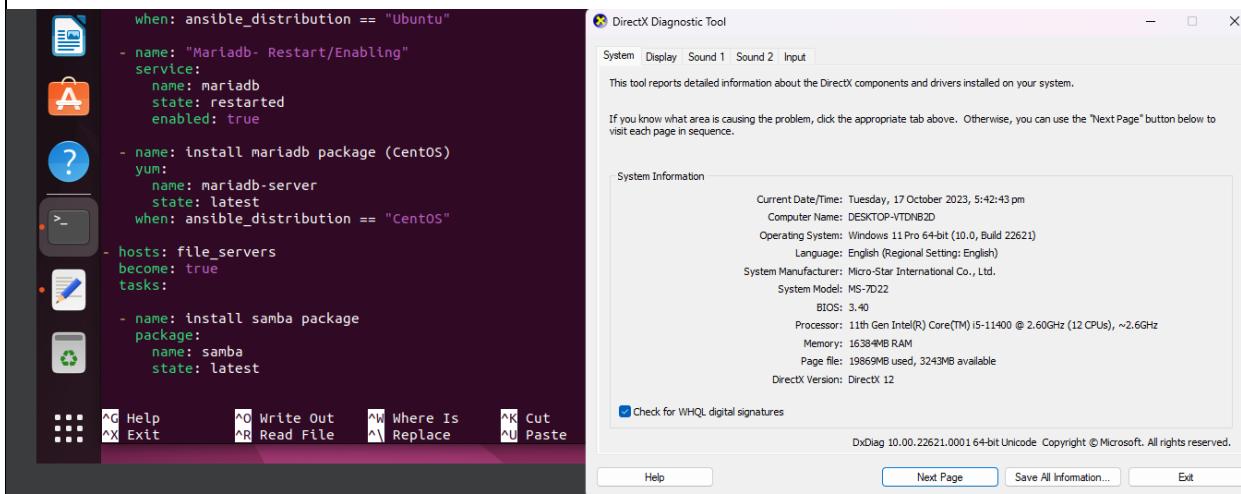


6. Edit the *site.yml* again. This time we will append the code to configure installation on the *file_servers* group. We can add the following on our file.

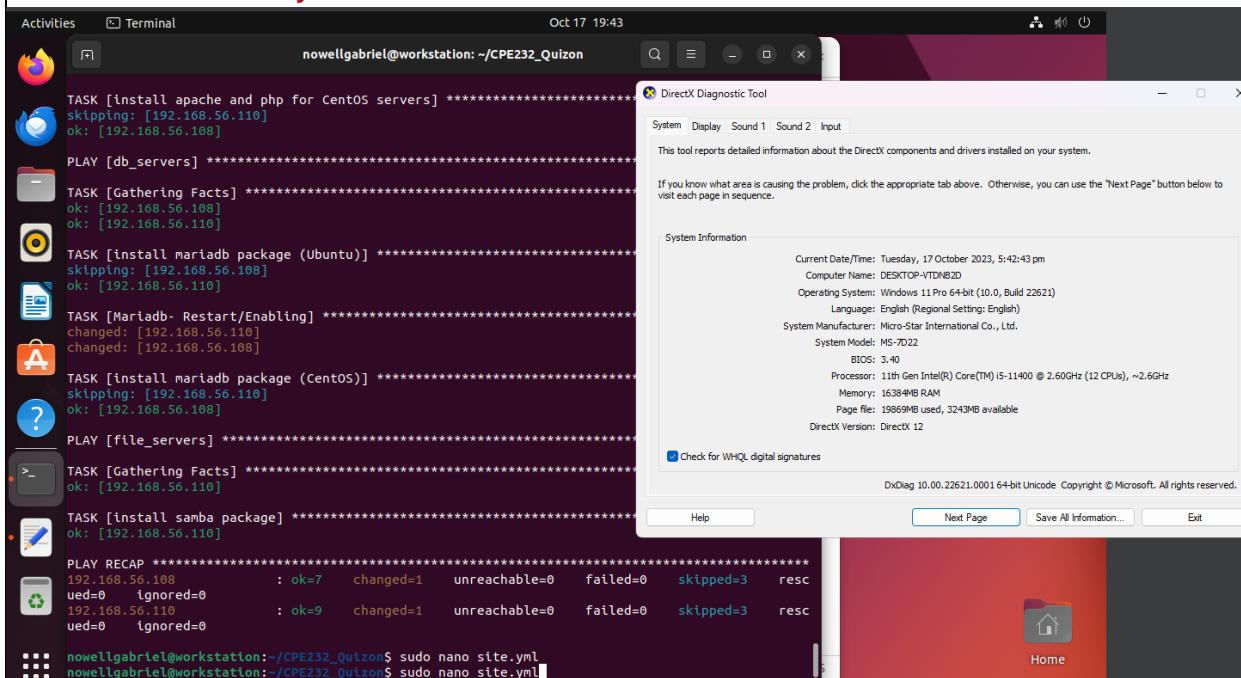
```
- hosts: file_servers
  become: true
  tasks:

    - name: install samba package
      package:
        name: samba
        state: latest
```

Make sure to save the file and exit.



Run the *site.yml* file and describe the result.



- It only installs samba on the servers that are included in the group `file_servers`.

The testing of the `file_servers` is beyond the scope of this activity, and as well as our topics and objectives. However, in this activity we were able to show that we can target hosts or servers using grouping in ansible playbooks.

Task 2: Using Tags in running playbooks

In this task, our goal is to add metadata to our plays so that we can only run the plays that we want to run, and not all the plays in our playbook.

1. Edit the `site.yml` file. Add tags to the playbook. After the name, we can place the tags: `name_of_tag`. This is an arbitrary command, which means you can use any name for a tag.

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

    - name: install updates (CentOS)
      tags: always
      dnf:
        update_only: yes
        update_cache: yes
      when: ansible_distribution == "CentOS"

    - name: install updates (Ubuntu)
      tags: always
      apt:
        upgrade: dist
        update_cache: yes
      when: ansible_distribution == "Ubuntu"
```

```
- hosts: web_servers
become: true
tasks:

- name: install apache and php for Ubuntu servers
  tags: apache,apache2,ubuntu
  apt:
    name:
      - apache2
      - libapache2-mod-php
    state: latest
  when: ansible_distribution == "Ubuntu"

- name: install apache and php for CentOS servers
  tags: apache,centos,httpd
  dnf:
    name:
      - httpd
      - php
    state: latest
  when: ansible_distribution == "CentOS"
```

```
- hosts: db_servers
become: true
tasks:

- name: install mariadb package (Centos)
tags: centos, db,mariadb
dnf:
    name: mariadb-server
    state: latest
when: ansible_distribution == "CentOS"

- name: "Mariadb- Restarting/Enabling"
service:
    name: mariadb
    state: restarted
    enabled: true

- name: install mariadb packege (Ubuntu)
tags: db, mariadb,ubuntu
apt:
    name: mariadb-server
    state: latest
when: ansible_distribution == "Ubuntu"

- hosts: file_servers
become: true
tasks:

- name: install samba package
tags: samba
package:
    name: samba
    state: latest
```

Make sure to save the file and exit.

Activities Terminal Oct 17 19:50 nowellgabriel@workstation:~/CPE232_Quizon

```
GNU nano 6.2 site.yml
---
- hosts: all
  become: true
  pre_tasks:

  - name: install updates (CentOS)
    tags: always
    yum:
      update_only: yes
      update_cache: yes
      when: ansible_distribution == "CentOS"

  - name: install updates (Ubuntu)
    tags: always
    apt:
      upgrade: dist
      update_cache: yes
      when: ansible_distribution == "Ubuntu"

- hosts: web_servers
  become: true
  tasks:

  - name: install apache and php for Ubuntu servers
    tags: apache,apache2,ubuntu
    apt:
      name:
        - apache2
        - libapache2-mod-php
      state: latest
      when: ansible_distribution == "Ubuntu"

  - name: install apache and php for CentOS servers
    tags: apache,centos,httpd
```

Help Write Out Read File Where Is Replace Cut Paste Execute Justify Go To Line

Activities Terminal Oct 17 19:51 nowellgabriel@workstation:~/CPE232_Quizon

```
GNU nano 6.2 site.yml
when: ansible_distribution == "Ubuntu"
- name: install apache and php for CentOS servers
  tags: apache,centos,httpd
  yum:
    name:
      - httpd
      - php
    state: latest
    when: ansible_distribution == "CentOS"

- hosts: db_servers
  become: true
  tasks:

  - name: install mariadb package (Ubuntu)
    tags: centos,db,mariadb
    apt:
      name: mariadb-server
      state: latest
      when: ansible_distribution == "Ubuntu"

  - name: "Mariadb- Restart/Enabling"
    service:
      name: mariadb
      state: restarted
      enabled: true

  - name: install mariadb package (CentOS)
    tags: db,mariadb,ubuntu
    yum:
      name: mariadb-server
      state: latest
      when: ansible_distribution == "CentOS"

- hosts: file_servers
  become: true
  tasks:

  - name: install mariadb package (CentOS)
    tags: db,mariadb,ubuntu
    yum:
      name: mariadb-server
      state: latest
      when: ansible_distribution == "CentOS"

  - hosts: file_servers
    become: true
    tasks:

    - name: install samba package
      tags: samba
      package:
        name: samba
        state: latest
```

Help Write Out Read File Where Is Replace Cut Paste Execute Justify Go To Line

DirectX Diagnostic Tool

System Display Sound 1 Sound 2 Input

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: Tuesday, 17 October 2023, 5:42:43 pm
Computer Name: DESKTOP-VTDN8ZD
Operating System: Windows 11 Pro 64-bit (10.0, Build 22621)
Language: English (Regional Setting: English)
System Manufacturer: Micro-Star International Co., Ltd.
System Model: MS-7022
BIOS: 3.40
Processor: 11th Gen Intel(R) Core(TM) i5-11400 @ 2.60GHz (12 CPUs), ~2.6GHz
Memory: 16384MB RAM
Page file: 19869MB used, 3243MB available
DirectX Version: DirectX 12

Check for WHQL digital signatures

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Help Next Page Save All Information... Exit

Home

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Check for WHQL digital signatures

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Help Next Page Save All Information... Exit

Home

Run the *site.yml* file and describe the result.

```
nowellgabriel@workstation:~/CPE232_Qulzon$ ansible-playbook --ask-become-pass site.yml
BECOME password:

PLAY [all] ****
TASK [Gathering Facts] ****
ok: [192.168.56.110]
ok: [192.168.56.108]

TASK [install updates (CentOS)] ****
skipping: [192.168.56.110]
ok: [192.168.56.108]

TASK [install updates (Ubuntu)] ****
skipping: [192.168.56.108]
ok: [192.168.56.110]

PLAY [web_servers] ****
TASK [Gathering Facts] ****
ok: [192.168.56.108]
ok: [192.168.56.110]

TASK [install apache and php for Ubuntu servers] ****
skipping: [192.168.56.108]
ok: [192.168.56.110]

TASK [install apache and php for CentOS servers] ****
skipping: [192.168.56.110]
ok: [192.168.56.108]

PLAY [db_servers] ****
TASK [Gathering Facts] ****
ok: [192.168.56.108]
ok: [192.168.56.110]

Oct 17 20:03
Activities Terminal nowellgabriel@workstation: ~/CPE232_Qulzon
ok: [192.168.56.110]

TASK [install apache and php for CentOS servers] ****
skipping: [192.168.56.110]
ok: [192.168.56.108]

PLAY [db_servers] ****
TASK [Gathering Facts] ****
ok: [192.168.56.108]
ok: [192.168.56.110]

TASK [install mariadb package (Ubuntu)] ****
skipping: [192.168.56.108]
ok: [192.168.56.110]

TASK [Mariadb- Restart/Enabling] ****
changed: [192.168.56.110]
changed: [192.168.56.108]

TASK [install mariadb package (CentOS)] ****
skipping: [192.168.56.110]
ok: [192.168.56.108]

PLAY [file_servers] ****
TASK [Gathering Facts] ****
ok: [192.168.56.110]

TASK [install samba package] ****
ok: [192.168.56.110]

PLAY RECAP ****
192.168.56.108 : ok=7    changed=1    unreachable=0    failed=0    skipped=3    resp
192.168.56.110 : ok=9    changed=1    unreachable=0    failed=0    skipped=3    resp
192.168.56.110 : ok=0    ignored=0   resp

nowellgabriel@workstation:~/CPE232_Qulzon$ sudo nano site.yml
nowellgabriel@workstation:~/CPE232_Qulzon$
```

DirectX Diagnostic Tool

System Display Sound 1 Sound 2 Input

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Current Date/Time: Tuesday, 17 October 2023, 5:42:43 pm
Computer Name: DESKTOP-VTDN8ZD
Operating System: Windows 11 Pro 64-bit (10.0, Build 22621)
Language: English (Regional Setting: English)
System Manufacturer: Micro-Star International Co., Ltd.
System Model: MS-7D22
BIOS: 3.40
Processor: 11th Gen Intel(R) Core(TM) i5-11400 @ 2.60GHz (12 CPUs), ~2.6GHz
Memory: 16384MB RAM
Page file: 19869MB used, 3243MB available
DirectX Version: DirectX 12

Check for WHQL digital signatures

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Help Next Page Save All Information... Exit

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System Information

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BIOS: 3.40
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Memory: 16384MB RAM
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DirectX Version: DirectX 12

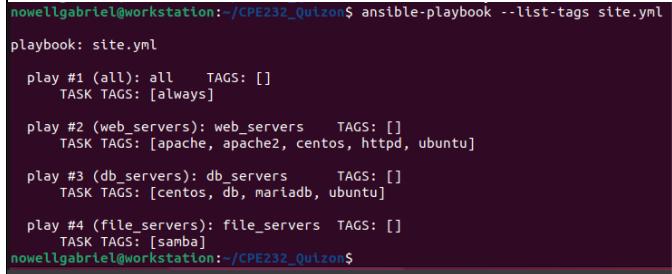
Check for WHQL digital signatures

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Help Next Page Save All Information... Exit

2. On the local machine, try to issue the following commands and describe each result:

2.1 *ansible-playbook --list-tags site.yml*



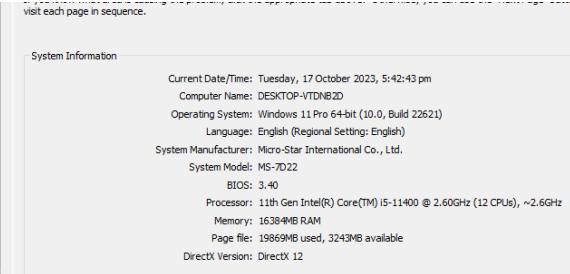
```
nowellgabriel@workstation:~/CPE232_Quizon$ ansible-playbook --list-tags site.yml
playbook: site.yml

play #1 (all): all      TAGS: []
  TASK TAGS: [always]

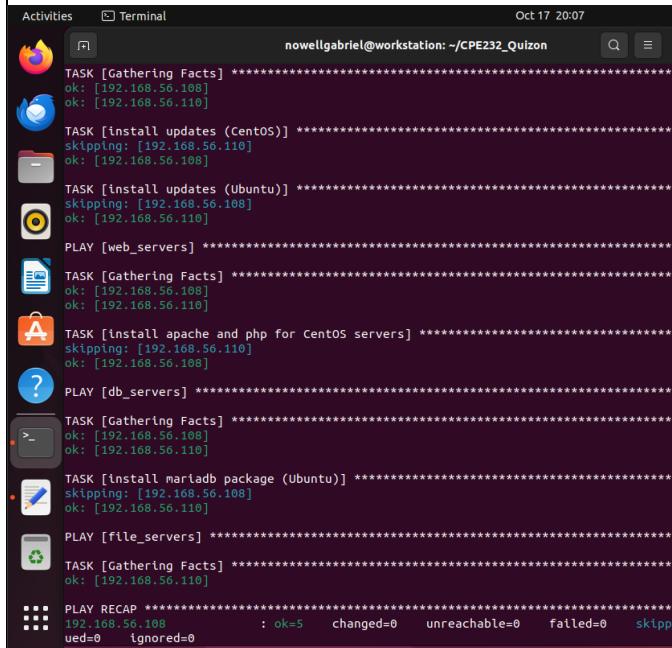
play #2 (web_servers): web_servers    TAGS: []
  TASK TAGS: [apache, apache2, centos, httpd, ubuntu]

play #3 (db_servers): db_servers      TAGS: []
  TASK TAGS: [centos, db, mariadb, ubuntu]

play #4 (file_servers): file_servers TAGS: []
  TASK TAGS: [samba]
nowellgabriel@workstation:~/CPE232_Quizon$
```



2.2 *ansible-playbook --tags centos --ask-become-pass site.yml*



```
nowellgabriel@workstation:~/CPE232_Quizon$ Oct 17 20:07
TASK [Gathering Facts] *****
ok: [192.168.56.108]
ok: [192.168.56.110]

TASK [install updates (CentOS)] *****
skipping: [192.168.56.110]
ok: [192.168.56.108]

TASK [install updates (Ubuntu)] *****
skipping: [192.168.56.108]
ok: [192.168.56.110]

PLAY [web_servers] *****
TASK [Gathering Facts] *****
ok: [192.168.56.108]
ok: [192.168.56.110]

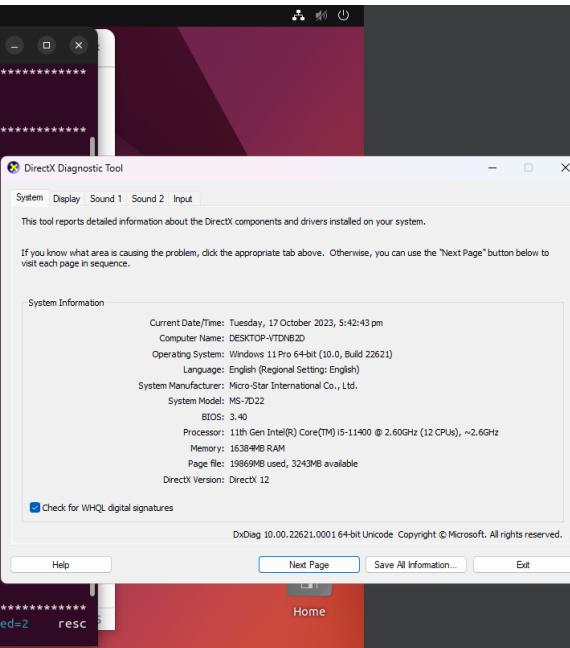
TASK [Install apache and php for CentOS servers] *****
skipping: [192.168.56.110]
ok: [192.168.56.108]

PLAY [db_servers] *****
TASK [Gathering Facts] *****
ok: [192.168.56.108]
ok: [192.168.56.110]

TASK [Install mariadb package (Ubuntu)] *****
skipping: [192.168.56.108]
ok: [192.168.56.110]

PLAY [file_servers] *****
TASK [Gathering Facts] *****
ok: [192.168.56.110]

PLAY RECAP *****
192.168.56.108 : ok=5    changed=0    unreachable=0    failed=0    skipped=2    rescued=0    ignored=0
192.168.56.110 : ok=5    changed=0    unreachable=0    failed=0    skipped=2    rescued=0    ignored=0
```



DirectX Diagnostic Tool

System Information

Current Date/Time: Tuesday, 17 October 2023, 5:42:43 pm
Computer Name: DESKTOP-VTDB2D
Operating System: Windows 11 Pro 64-bit (10.0, Build 22621)
Language: English (Regional Setting: English)
System Manufacturer: Micro-Star International Co., Ltd.
System Model: MS-7022
BIOS: 3.40
Processor: 11th Gen Intel(R) Core(TM) i5-11400 @ 2.60GHz (12 CPUs), ~2.6GHz
Memory: 16384MB RAM
Page file: 19869MB used, 3243MB available
DirectX Version: DirectX 12

Check for WHQL digital signatures

2.3 *ansible-playbook --tags db --ask-become-pass site.yml*

Activities Terminal Oct 17 20:09

```
nowellgabriel@workstation:~/CPE232_Quizon
TASK [install updates (CentOS)] ****
skipping: [192.168.56.108]
ok: [192.168.56.108]

TASK [install updates (Ubuntu)] ****
skipping: [192.168.56.108]
ok: [192.168.56.110]

PLAY [web_servers] ****
TASK [Gathering Facts]
ok: [192.168.56.108]
ok: [192.168.56.110]

PLAY [db_servers] ****
TASK [Gathering Facts]
ok: [192.168.56.108]
ok: [192.168.56.110]

TASK [install mariadb package (Ubuntu)] ****
skipping: [192.168.56.108]
ok: [192.168.56.110]

TASK [install mariadb package (centos)] ****
skipping: [192.168.56.108]
ok: [192.168.56.108]

PLAY [file_servers] ****
TASK [Gathering Facts]
ok: [192.168.56.110]

PLAY RECAP ****
192.168.56.108 : ok=5    changed=0   unreachable=0   failed=0   skipped=2   resc
ued=0  ignored=0
192.168.56.110 : ok=6    changed=0   unreachable=0   failed=0   skipped=2   resc
ued=0  ignored=0
nowellgabriel@workstation:~/CPE232_Quizon$
```

DirectX Diagnostic Tool

System Display Sound 1 Sound 2 Input

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: Tuesday, 17 October 2023, 5:42:43 pm
Computer Name: DESKTOP-VTDNB2D
Operating System: Windows 11 Pro 64-bit (10.0, Build 22621)
Language: English (Regional Setting: English)
System Manufacturer: Micro-Star International Co., Ltd.
System Model: MS-7022
BIOS: 3.40
Processor: 11th Gen Intel(R) Core(TM) i5-11400 @ 2.60GHz (12 CPUs), ~2.6GHz
Memory: 16384MB RAM
Page file: 19669MB used, 3243MB available
DirectX Version: DirectX 12

Check for WHQL digital signatures

DxDiag 10.00.22621.0001 64-bit Unicode Copyright © Microsoft. All rights reserved.

Help Next Page Save All Information... Exit

2.4 ansible-playbook --tags apache --ask-become-pass site.yml

Activities Terminal Oct 17 20:11

```
nowellgabriel@workstation:~/CPE232_Quizon
TASK [install updates (CentOS)] ****
skipping: [192.168.56.108]
ok: [192.168.56.108]

TASK [install updates (Ubuntu)] ****
skipping: [192.168.56.108]
ok: [192.168.56.110]

PLAY [web_servers] ****
TASK [Gathering Facts]
ok: [192.168.56.108]
ok: [192.168.56.110]

TASK [install apache and php for Ubuntu servers] ****
skipping: [192.168.56.108]
ok: [192.168.56.110]

TASK [install apache and php for CentOS servers] ****
skipping: [192.168.56.108]
ok: [192.168.56.108]

PLAY [db_servers] ****
TASK [Gathering Facts]
ok: [192.168.56.108]
ok: [192.168.56.110]

PLAY [file_servers] ****
TASK [Gathering Facts]
ok: [192.168.56.110]

PLAY RECAP ****
192.168.56.108 : ok=5    changed=0   unreachable=0   failed=0   skipped=2   resc
ued=0  ignored=0
192.168.56.110 : ok=6    changed=0   unreachable=0   failed=0   skipped=2   resc
ued=0  ignored=0
nowellgabriel@workstation:~/CPE232_Quizon$
```

DirectX Diagnostic Tool

System Display Sound 1 Sound 2 Input

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: Tuesday, 17 October 2023, 5:42:43 pm
Computer Name: DESKTOP-VTDNB2D
Operating System: Windows 11 Pro 64-bit (10.0, Build 22621)
Language: English (Regional Setting: English)
System Manufacturer: Micro-Star International Co., Ltd.
System Model: MS-7022
BIOS: 3.40
Processor: 11th Gen Intel(R) Core(TM) i5-11400 @ 2.60GHz (12 CPUs), ~2.6GHz
Memory: 16384MB RAM
Page file: 19669MB used, 3243MB available
DirectX Version: DirectX 12

Check for WHQL digital signatures

DxDiag 10.00.22621.0001 64-bit Unicode Copyright © Microsoft. All rights reserved.

Help Next Page Save All Information... Exit

2.5 *ansible-playbook --tags "apache,db" --ask-become-pass site.yml*

```
nowellgabriel@workstation:~/CPE232_Quizon$ ansible-playbook --tags "apache,db" --ask-become-pass site.yml

PLAY [all] ****
  TASK [Gathering Facts] ****
    ok: [192.168.56.108]
    ok: [192.168.56.109]

  TASK [install updates (CentOS)] ****
    skipping: [192.168.56.108]
    ok: [192.168.56.109]

  TASK [install updates (Ubuntu)] ****
    skipping: [192.168.56.108]
    ok: [192.168.56.109]

PLAY [web_servers] ****
  TASK [Gathering Facts] ****
    ok: [192.168.56.108]
    ok: [192.168.56.109]

  PLAY [db_servers] ****
    TASK [Gathering Facts] ****
      ok: [192.168.56.108]
      ok: [192.168.56.109]

    PLAY [file_servers] ****
      TASK [Gathering Facts] ****
        ok: [192.168.56.109]

PLAY RECAP ****
192.168.56.108 : ok=4    changed=0    unreachable=0    failed=0    skipped=1    resc...
192.168.56.109 : ok=5    changed=0    unreachable=0    failed=0    skipped=1    resc...
ued=0  ignored=0
ued=0  ignored=0

nowellgabriel@workstation:~/CPE232_Quizon$
```

Task 3: Managing Services

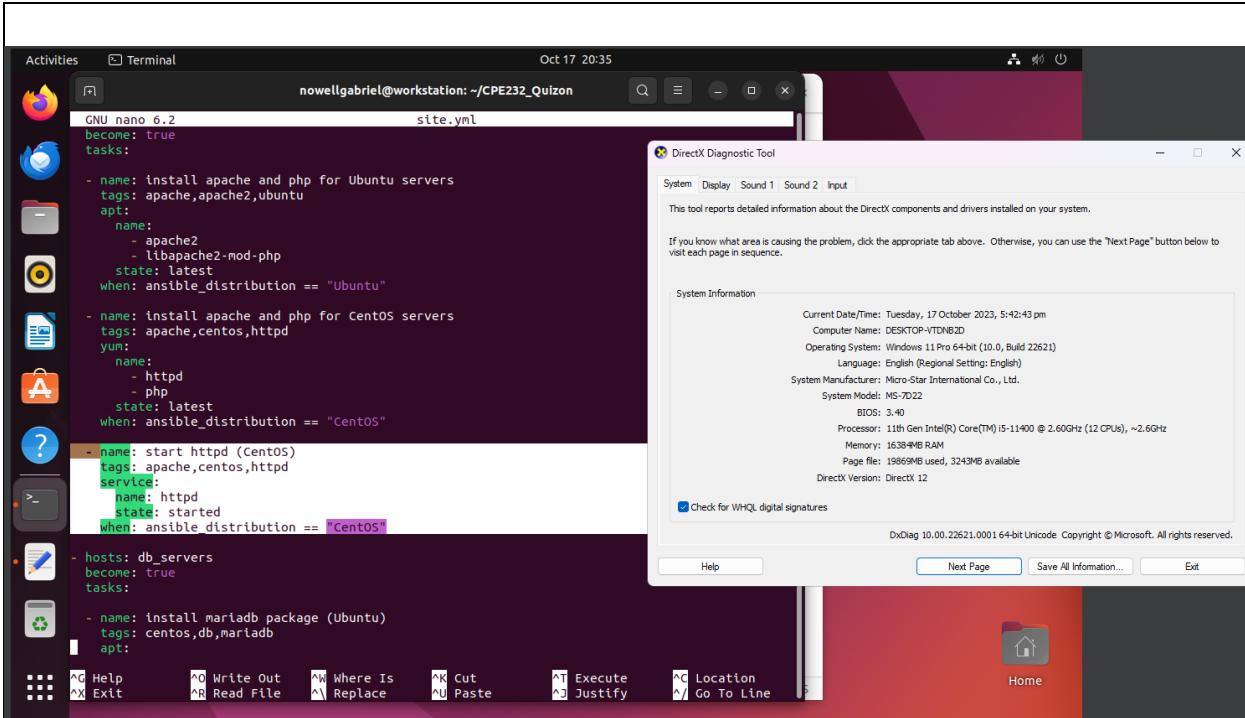
1. Edit the file `site.yml` and add a play that will automatically start the `httpd` on CentOS server.

```
- name: install apache and php for CentOS servers
  tags: apache,centos,httpd
  dnf:
    name:
      - httpd
      - php
    state: latest
  when: ansible_distribution == "CentOS"

  - name: start httpd (Centos)
    tags: apache, centos,httpd
    service:
      name: httpd
      state: started
  when: ansible_distribution == "CentOS"
```

Figure 3.1.1

Make sure to save the file and exit.



You would also notice from our previous activity that we already created a module that runs a service.

```
- hosts: db_servers
become: true
tasks:

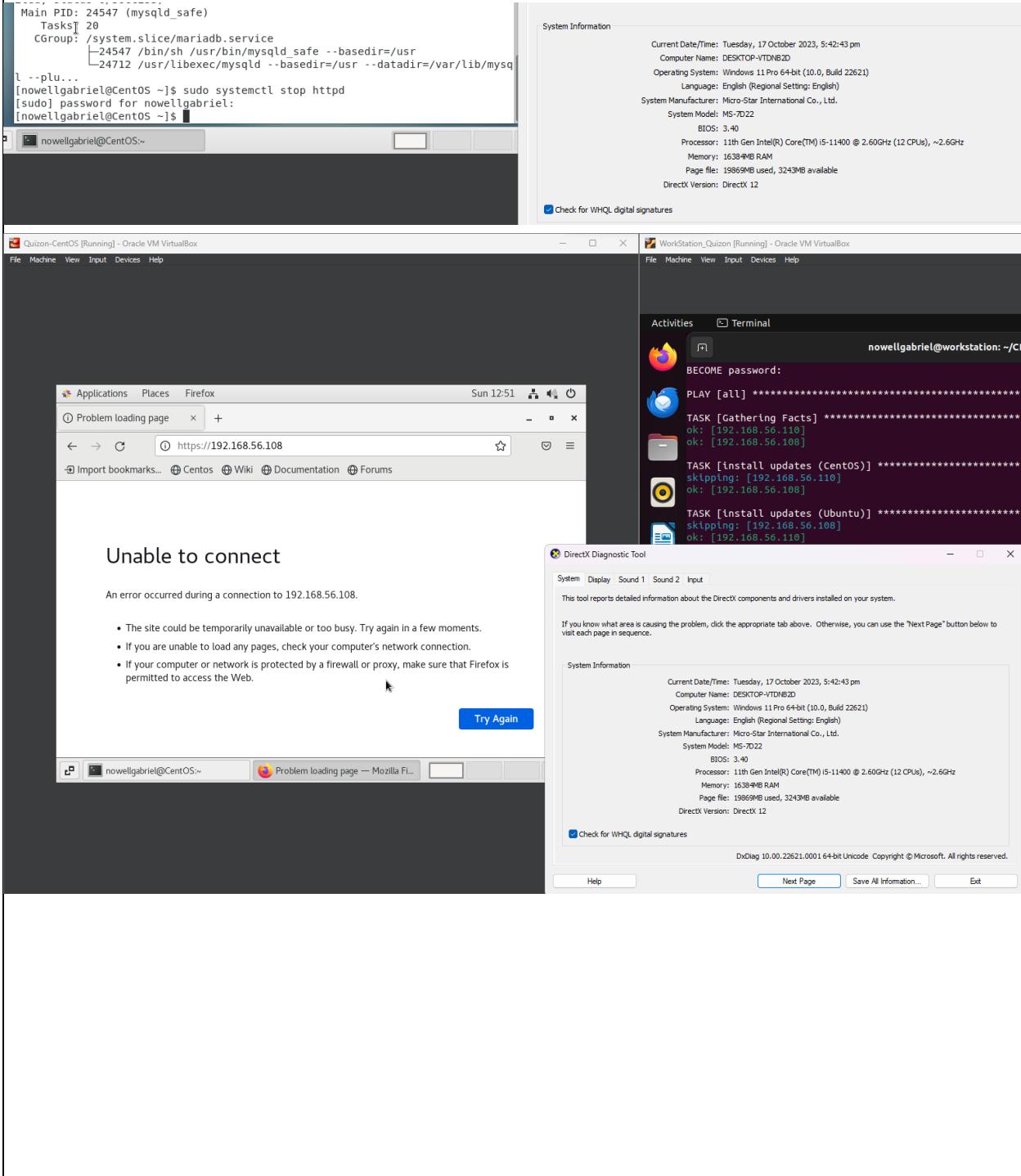
- name: install mariadb package (Centos)
tags: centos, db,mariadb
dnf:
    name: mariadb-server
    state: latest
when: ansible_distribution == "CentOS"

- name: "Mariadb- Restarting/Enabling"
service:
    name: mariadb
    state: restarted
    enabled: true
```

Figure 3.1.2

This is because in CentOS, installed packages' services are not run automatically. Thus, we need to create the module to run it automatically.

2. To test it, before you run the saved playbook, go to the CentOS server and stop the currently running httpd using the command `sudo systemctl stop httpd`. When prompted, enter the sudo password. After that, open the browser and enter the CentOS server's IP address. You should not be getting a display because we stopped the httpd service already.



3. Go to the local machine and this time, run the `site.yml` file. Then after running the file, go again to the CentOS server and enter its IP address on the browser. Describe the result.

To automatically enable the service every time we run the playbook, use the command `enabled: true` similar to Figure 7.1.2 and save the playbook.

The screenshot shows a Linux desktop environment with a terminal window and a DirectX Diagnostic Tool window. The terminal window displays the execution of a Ansible playbook named `site.yml`. The output shows tasks for installing updates, gathering facts, installing apache and php for Ubuntu servers, starting httpd on CentOS, and installing mariadb packages. The `start httpd` task is shown as skipped. The DirectX Diagnostic Tool window provides system information for a Windows 11 Pro 64-bit system, including processor (11th Gen Intel(R) Core(TM) i5-11400 @ 2.60GHz), memory (16384MB RAM), and disk usage (19869MB used, 3243MB available). The system model is MS-7D22.

```

nowellgabriel@workstation: ~/CPE232_Quizon
TASK [Install updates (Ubuntu)] *****
skipping: [192.168.56.108]
ok: [192.168.56.108]

PLAY [web_servers] *****
TASK [Gathering Facts] *****
ok: [192.168.56.108]
ok: [192.168.56.108]

TASK [Install apache and php for Ubuntu servers] *****
skipping: [192.168.56.108]
ok: [192.168.56.108]

TASK [Install apache and php for CentOS servers] *****
skipping: [192.168.56.110]
ok: [192.168.56.108]

TASK [start httpd (CentOS)] *****
skipping: [192.168.56.110]
changed: [192.168.56.108]

PLAY [db_servers] *****
TASK [Gathering Facts] *****
ok: [192.168.56.108]
ok: [192.168.56.108]

TASK [Install mariadb package (Ubuntu)] *****
skipping: [192.168.56.108]
ok: [192.168.56.110]

TASK [Mariadb - Restart/Enabling] *****
changed: [192.168.56.110]
changed: [192.168.56.108]

TASK [Install mariadb package (CentOS)] *****
skipping: [192.168.56.110]
ok: [192.168.56.108]

```

The screenshot shows a CentOS desktop environment with a terminal window and a DirectX Diagnostic Tool window. The terminal window shows the user stopping and then starting the Apache HTTPD service using `sudo systemctl`. The service status command shows it is active and running. The `start httpd` command in the terminal is shown as skipped. The DirectX Diagnostic Tool window provides system information for a Windows 11 Pro 64-bit system, including processor (11th Gen Intel(R) Core(TM) i5-11400 @ 2.60GHz), memory (16384MB RAM), and disk usage (19869MB used, 3243MB available). The system model is MS-7D22.

```

nowellgabriel@CentOS:~
File Edit View Search Terminal Help
l --plu...
[nowellgabriel@CentOS ~]$ sudo systemctl stop httpd
[sudo] password for nowellgabriel:
[nowellgabriel@CentOS ~]$ sudo systemctl stop httpd
[nowellgabriel@CentOS ~]$ sudo systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: disabled)
   Active: active (running) since Sun 2023-10-01 12:53:59 EDT; 45s ago
     Docs: man:httpd(8)
           man:apachectl(8)
   Main PID: 7319 (httpd)
      Status: "Total requests: 0; Current requests/sec: 0; Current traffic: 0 B/sec"
      Tasks: 6
     CGroup: /system.slice/httpd.service
             └─7319 /usr/sbin/httpd -DFOREGROUND
                ├─7323 /usr/sbin/httpd -DFOREGROUND
                ├─7324 /usr/sbin/httpd -DFOREGROUND
                ├─7325 /usr/sbin/httpd -DFOREGROUND
                ├─7326 /usr/sbin/httpd -DFOREGROUND
                └─7327 /usr/sbin/httpd -DFOREGROUND

Oct 01 12:53:59 CentOS systemd[1]: Starting The Apache HTTP Server...
Oct 01 12:53:59 CentOS httpd[7319]: AH00558: httpd: Could not reliably d...ge

```

Reflections:

Answer the following:

1. What is the importance of putting our remote servers into groups?

Grouping can also help you to improve the performance and reliability of your server infrastructure. For example, you can use grouping to load balance traffic between your web servers, so that no one server is overloaded. This can help to improve the performance of your website or web application. Grouping can also be used to create a disaster recovery plan. If one of your servers fails, you can quickly switch over to another server in the group, minimizing downtime.

2. What is the importance of tags in playbooks?

Additionally, tags can speed up debugging, boost documentation, make rollbacks easier, and improve testing and resource allocation. Use tags, for instance, to find and correct defects in your playbooks or to create documentation that explains how to use and organize your playbooks. Tags may also be utilized to make resource allocation during playbook execution more efficient and to streamline the rollback procedure if something goes wrong with a playbook.

3. Why do think some services need to be managed automatically in playbooks?

Playbooks allow for rapid alterations and remote administration while serving as essential documentation for audits and compliance.

