Name: Mark Andrei Ponayo	**Date Performed:** Oct 17, 2023
Course/Section: BSCPE31S5	**Date Submitted:** Oct 18, 2023
Instructor: Engr. Roman Richard	**Semester and SY:** 1st sem 2022-2023

Activity 7: Managing Files and Creating Roles in Ansible

1. **Objectives:**

1.1 Manage files in remote servers

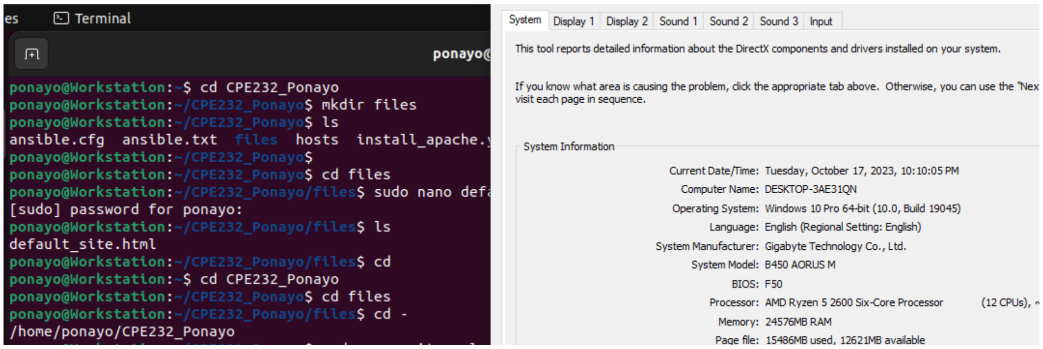
1.2 Implement roles in ansible

2. **Discussion**:

In this activity, we look at the concept of copying a file to a server. We are going to create a file into our git repository and use Ansible to grab that file and put it into a particular place so that we could do things like customize a default website, or maybe install a default configuration file. We will also implement roles to consolidate plays.

Task 1: Create a file and copy it to remote servers

1. Using the previous directory we created, create a directory, and named it "*files*." Create a file inside that directory and name it "*default_site.html*." Edit the file and put basic HTML syntax. Any content will do, as long as it will display text later. Save the file and exit.



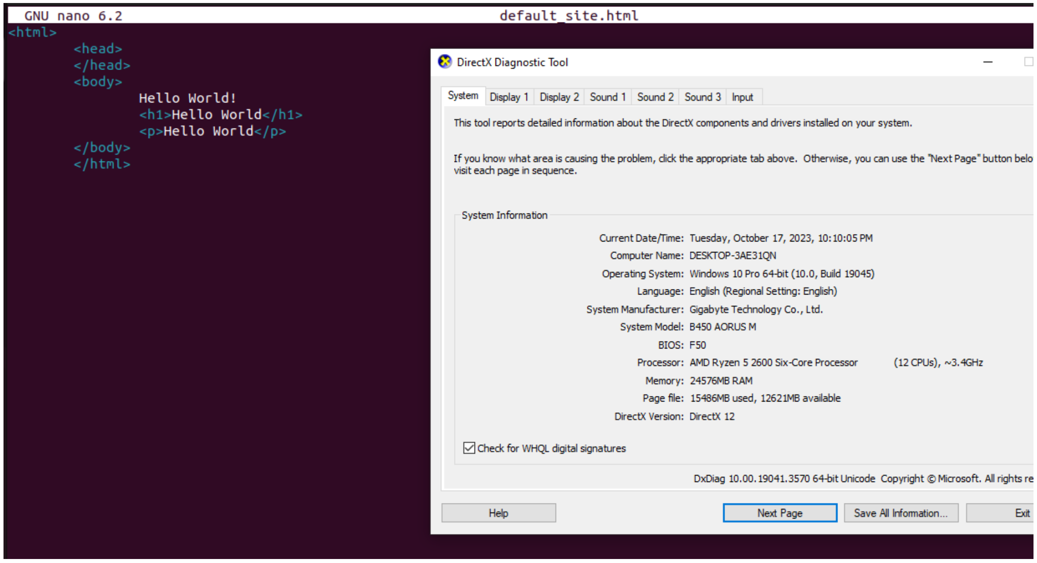
```
ponayo@Workstation:~$ cd CPE232_Ponayo
ponayo@Workstation:~/CPE232_Ponayo$ mkdir files
ponayo@Workstation:~/CPE232_Ponayo$ ls
ansible.cfg  ansible.txt  files  hosts  install_apache.y
ponayo@Workstation:~/CPE232_Ponayo$
ponayo@Workstation:~/CPE232_Ponayo$ cd files
ponayo@Workstation:~/CPE232_Ponayo/files$ sudo nano defa
[sudo] password for ponayo:
ponayo@Workstation:~/CPE232_Ponayo/files$ ls
default_site.html
ponayo@Workstation:~/CPE232_Ponayo/files$ cd
ponayo@Workstation:~$ cd CPE232_Ponayo
ponayo@Workstation:~/CPE232_Ponayo$ cd files
ponayo@Workstation:~/CPE232_Ponayo/files$ cd -
/home/ponayo/CPE232_Ponayo
```

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 "Nex
visit each page in sequence.

System Information

Current Date/Time: Tuesday, October 17, 2023, 10:10:05 PM
Computer Name: DESKTOP-3AE31QN
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: Gigabyte Technology Co., Ltd.
System Model: B450 AORUS M
BIOS: F50
Processor: AMD Ryzen 5 2600 Six-Core Processor (12 CPUs), ~
Memory: 24576MB RAM
Page file: 15486MB used, 12621MB available



```
  GNU nano 6.2                                default_site.html
<html>
        <head>
        </head>
        <body>
                Hello World!
                <h1>Hello World</h1>
                <p>Hello World</p>
        </body>
        </html>
```

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 belo visit each page in sequence.

System Information

```
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  Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
          Language: English (Regional Setting: English)
System Manufacturer: Gigabyte Technology Co., Ltd.
      System Model: B450 AORUS M
              BIOS: F50
         Processor: AMD Ryzen 5 2600 Six-Core Processor        (12 CPUs), ~3.4GHz
            Memory: 24576MB RAM
         Page file: 15486MB used, 12621MB available
   DirectX Version: DirectX 12
```

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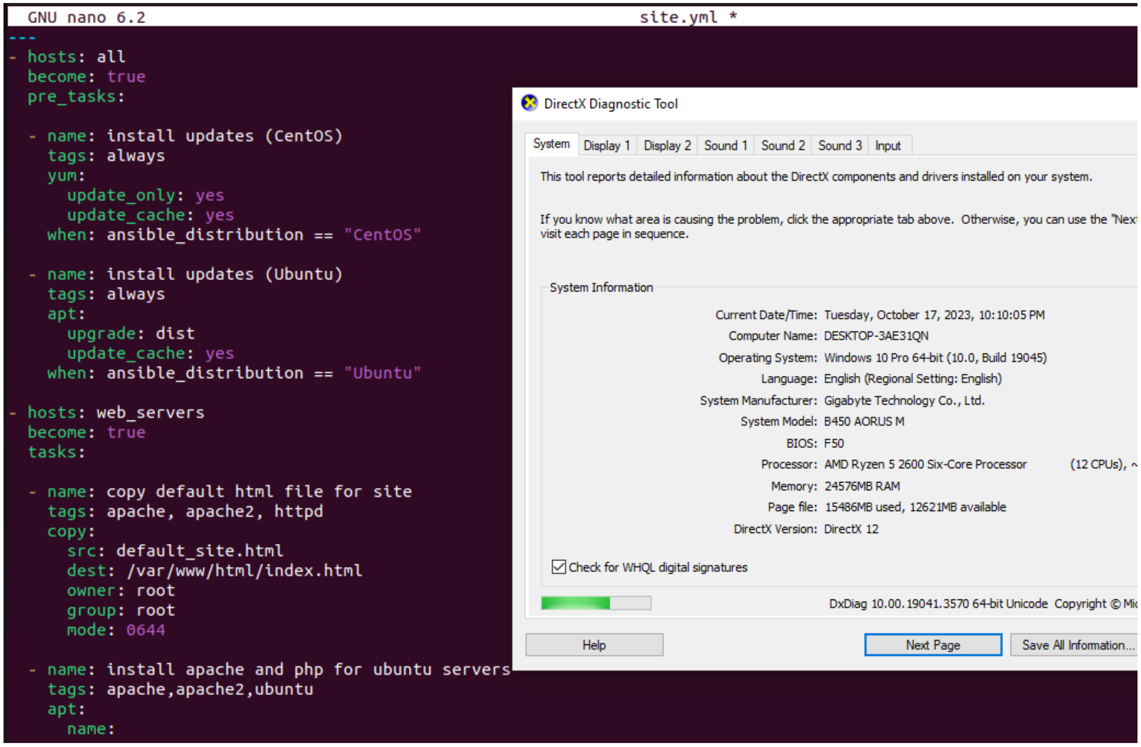
2. Edit the *site.yml* file and just below the *web_servers* play, create a new file to copy the default html file for site:

```
-    name: copy default html file for site

     tags: apache, apache2, httpd
     copy:
        src: default_site.html
        dest: /var/www/html/index.html
        owner: root
        group: root
        mode: 0644
```



```
  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: copy default html file for site
    tags: apache, apache2, httpd
    copy:
      src: default_site.html
      dest: /var/www/html/index.html
      owner: root
      group: root
      mode: 0644

  - name: install apache and php for ubuntu servers
    tags: apache,apache2,ubuntu
    apt:
      name:
```

DirectX Diagnostic Tool

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System Information

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Computer Name: DESKTOP-3AE31QN
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: Gigabyte Technology Co., Ltd.
System Model: B450 AORUS M
BIOS: F50
Processor: AMD Ryzen 5 2600 Six-Core Processor (12 CPUs), ~
Memory: 24576MB RAM
Page file: 15486MB used, 12621MB available
DirectX Version: DirectX 12

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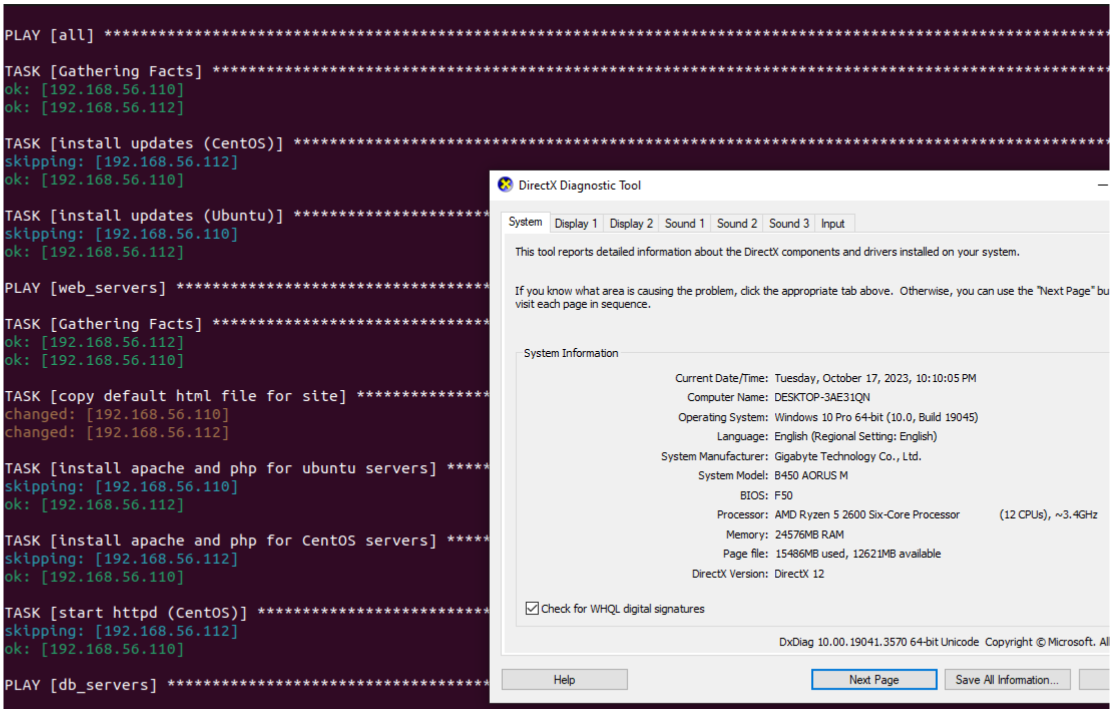
3. Run the playbook *site.yml*. Describe the changes.
After running the site.yml it was successfully copy the default html file for site because of the script.



```
PLAY [all] ****************************************************************************************

TASK [Gathering Facts] ****************************************************************************
ok: [192.168.56.110]
ok: [192.168.56.112]

TASK [install updates (CentOS)] *******************************************************************
skipping: [192.168.56.112]
ok: [192.168.56.110]

TASK [install updates (Ubuntu)] ***********************
skipping: [192.168.56.110]
ok: [192.168.56.112]

PLAY [web_servers] ************************************

TASK [Gathering Facts] ********************************
ok: [192.168.56.112]
ok: [192.168.56.110]

TASK [copy default html file for site] ***************
changed: [192.168.56.110]
changed: [192.168.56.112]

TASK [install apache and php for ubuntu servers] *****
skipping: [192.168.56.110]
ok: [192.168.56.112]

TASK [install apache and php for CentOS servers] *****
skipping: [192.168.56.112]
ok: [192.168.56.110]

TASK [start httpd (CentOS)] **************************
skipping: [192.168.56.112]
ok: [192.168.56.110]

PLAY [db_servers] ************************************
```

DirectX Diagnostic Tool

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visit each page in sequence.

System Information

Current Date/Time: Tuesday, October 17, 2023, 10:10:05 PM
Computer Name: DESKTOP-3AE31QN
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
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System Manufacturer: Gigabyte Technology Co., Ltd.
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Processor: AMD Ryzen 5 2600 Six-Core Processor (12 CPUs), ~3.4GHz
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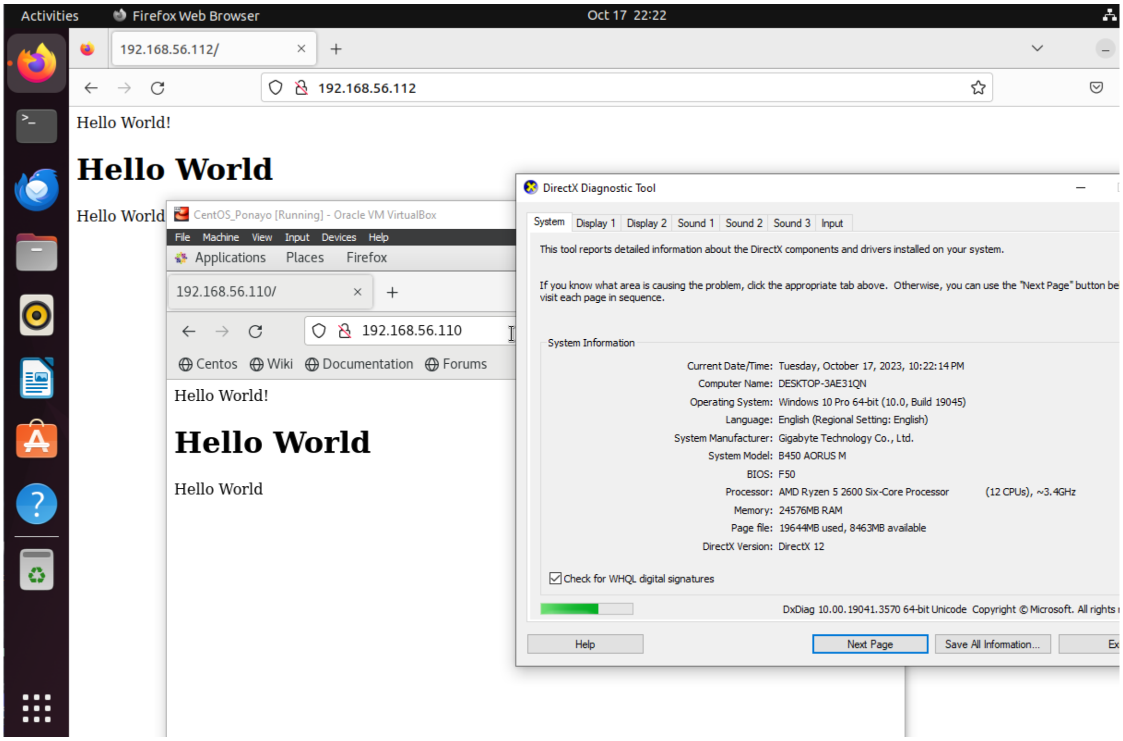
4. Go to the remote servers (*web_servers*) listed in your inventory. Use cat command to check if the index.html is the same as the local repository file

(*default_site.html*). Do both for Ubuntu and CentOS servers. On the CentOS server, go to the browser and type its IP address. Describe the output.


Activities
Firefox Web Browser
Oct 17 22:22
192.168.56.112/
192.168.56.112
CentOS_Ponayo [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Applications Places Firefox
192.168.56.110/
192.168.56.110
Centos Wiki Documentation Forums

Hello World!

Hello World

Hello World

Hello World!

Hello World

Hello World

DirectX Diagnostic Tool

System | Display 1 | Display 2 | Sound 1 | Sound 2 | Sound 3 | 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 be
visit each page in sequence.

System Information

```
   Current Date/Time: Tuesday, October 17, 2023, 10:22:14 PM
       Computer Name: DESKTOP-3AE31QN
    Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
            Language: English (Regional Setting: English)
 System Manufacturer: Gigabyte Technology Co., Ltd.
        System Model: B450 AORUS M
                BIOS: F50
           Processor: AMD Ryzen 5 2600 Six-Core Processor       (12 CPUs), ~3.4GHz
              Memory: 24576MB RAM
           Page file: 19644MB used, 8463MB available
     DirectX Version: DirectX 12
```

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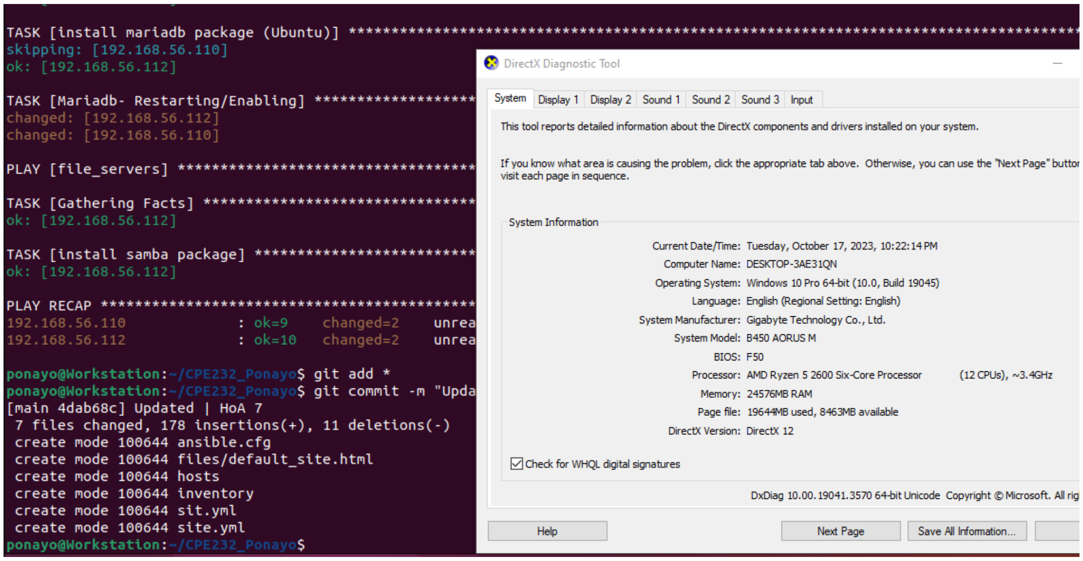
5. Sync your local repository with GitHub and describe the changes.



```
TASK [install mariadb package (Ubuntu)] ***************************************************************************
skipping: [192.168.56.110]
ok: [192.168.56.112]

TASK [Mariadb- Restarting/Enabling] *******************
changed: [192.168.56.112]
changed: [192.168.56.110]

PLAY [file_servers] ***********************************

TASK [Gathering Facts] ********************************
ok: [192.168.56.112]

TASK [install samba package] **************************
ok: [192.168.56.112]

PLAY RECAP ********************************************
192.168.56.110             : ok=9    changed=2    unrea
192.168.56.112             : ok=10   changed=2    unrea

ponayo@Workstation:~/CPE232_Ponayo$ git add *
ponayo@Workstation:~/CPE232_Ponayo$ git commit -m "Upda
[main 4dab68c] Updated | HoA 7
 7 files changed, 178 insertions(+), 11 deletions(-)
 create mode 100644 ansible.cfg
 create mode 100644 files/default_site.html
 create mode 100644 hosts
 create mode 100644 inventory
 create mode 100644 sit.yml
 create mode 100644 site.yml
ponayo@Workstation:~/CPE232_Ponayo$
```

DirectX Diagnostic Tool

System | Display 1 | Display 2 | Sound 1 | Sound 2 | Sound 3 | 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" buttor
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System Information

Current Date/Time: Tuesday, October 17, 2023, 10:22:14 PM
Computer Name: DESKTOP-3AE31QN
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: Gigabyte Technology Co., Ltd.
System Model: B450 AORUS M
BIOS: F50
Processor: AMD Ryzen 5 2600 Six-Core Processor (12 CPUs), ~3.4GHz
Memory: 24576MB RAM
Page file: 19644MB used, 8463MB available
DirectX Version: DirectX 12

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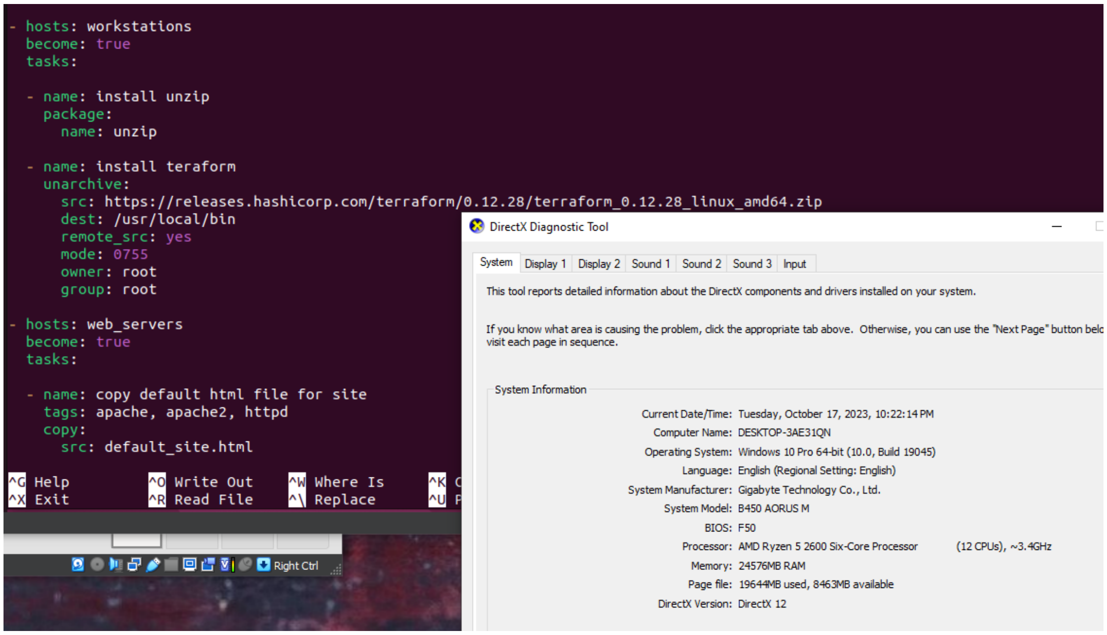
Task 2: Download a file and extract it to a remote server

1. Edit the site.yml. Just before the web_servers play, create a new play:
   - hosts: workstations
     become: true
     tasks:

```
- name: install unzip
  package:
     name: unzip

- name: install terraform
  unarchive:
                                                                src:
https://releases.hashicorp.com/terraform/0.12.28/terraform_0.12.28_linux_amd64.zip
    dest: /usr/local/bin
    remote_src: yes
    mode: 0755
    owner: root
    group: root
```



```
- hosts: workstations
  become: true
  tasks:

  - name: install unzip
    package:
      name: unzip

  - name: install teraform
    unarchive:
      src: https://releases.hashicorp.com/terraform/0.12.28/terraform_0.12.28_linux_amd64.zip
      dest: /usr/local/bin
      remote_src: yes
      mode: 0755
      owner: root
      group: root

- hosts: web_servers
  become: true
  tasks:

  - name: copy default html file for site
    tags: apache, apache2, httpd
    copy:
      src: default_site.html

^G Help          ^O Write Out     ^W Where Is      ^K C
^X Exit          ^R Read File     ^\ Replace       ^U P
```

DirectX Diagnostic Tool

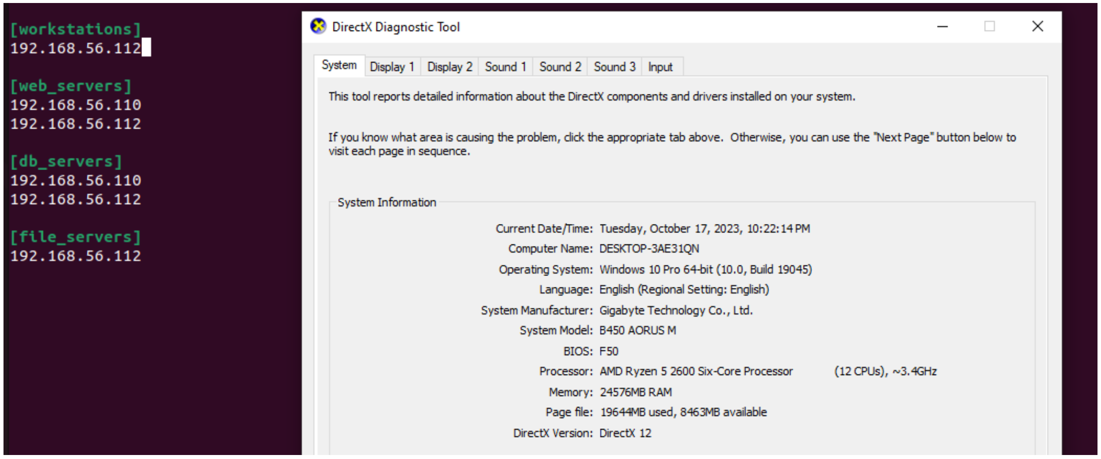
This tool reports detailed information about the DirectX components and drivers installed on your system.

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

System Information

```
   Current Date/Time: Tuesday, October 17, 2023, 10:22:14 PM
       Computer Name: DESKTOP-3AE31QN
    Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
            Language: English (Regional Setting: English)
 System Manufacturer: Gigabyte Technology Co., Ltd.
        System Model: B450 AORUS M
                BIOS: F50
           Processor: AMD Ryzen 5 2600 Six-Core Processor        (12 CPUs), ~3.4GHz
              Memory: 24576MB RAM
           Page file: 19644MB used, 8463MB available
     DirectX Version: DirectX 12
```

2. Edit the inventory file and add workstations group. Add any Ubuntu remote server. Make sure to remember the IP address.



```
[workstations]
192.168.56.112

[web_servers]
192.168.56.110
192.168.56.112

[db_servers]
192.168.56.110
192.168.56.112

[file_servers]
192.168.56.112
```

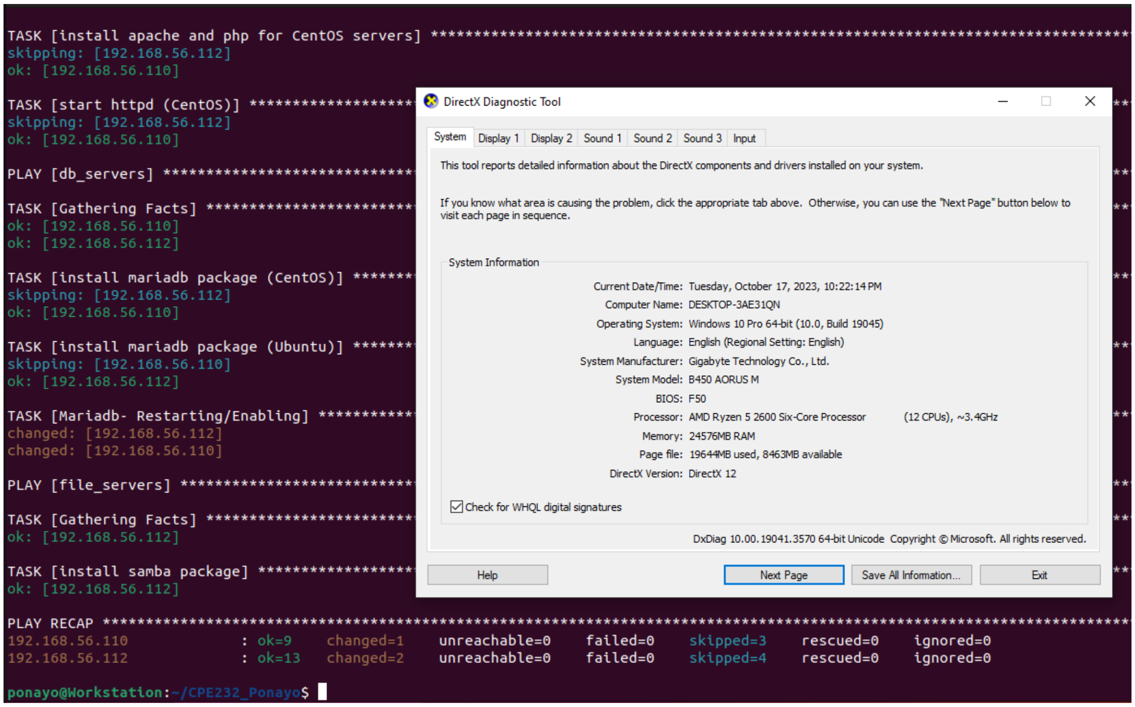
This tool reports detailed information about the DirectX components and drivers installed on your system.

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, October 17, 2023, 10:22:14 PM
    Computer Name: DESKTOP-3AE31QN
 Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
         Language: English (Regional Setting: English)
System Manufacturer: Gigabyte Technology Co., Ltd.
     System Model: B450 AORUS M
             BIOS: F50
        Processor: AMD Ryzen 5 2600 Six-Core Processor        (12 CPUs), ~3.4GHz
           Memory: 24576MB RAM
        Page file: 19644MB used, 8463MB available
  DirectX Version: DirectX 12
```

3. Run the playbook. Describe the output.
   After running again the site with the changes in inventory. It was successfully run since the ip address that i input in the inventory is the right ip address.



```
TASK [install apache and php for CentOS servers] *******************************************************************
skipping: [192.168.56.112]
ok: [192.168.56.110]

TASK [start httpd (CentOS)] *******************
skipping: [192.168.56.112]
ok: [192.168.56.110]

PLAY [db_servers] ******************************

TASK [Gathering Facts] *************************
ok: [192.168.56.110]
ok: [192.168.56.112]

TASK [install mariadb package (CentOS)] *******
skipping: [192.168.56.112]
ok: [192.168.56.110]

TASK [install mariadb package (Ubuntu)] *******
skipping: [192.168.56.110]
ok: [192.168.56.112]

TASK [Mariadb- Restarting/Enabling] ***********
changed: [192.168.56.112]
changed: [192.168.56.110]

PLAY [file_servers] ****************************

TASK [Gathering Facts] *************************
ok: [192.168.56.112]

TASK [install samba package] ******************
ok: [192.168.56.112]

PLAY RECAP *********************************************************************************************************
192.168.56.110             : ok=9    changed=1    unreachable=0    failed=0    skipped=3    rescued=0    ignored=0
192.168.56.112             : ok=13   changed=2    unreachable=0    failed=0    skipped=4    rescued=0    ignored=0

ponayo@Workstation:~/CPE232_Ponayo$
```

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```
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    Computer Name: DESKTOP-3AE31QN
 Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
         Language: English (Regional Setting: English)
System Manufacturer: Gigabyte Technology Co., Ltd.
     System Model: B450 AORUS M
             BIOS: F50
        Processor: AMD Ryzen 5 2600 Six-Core Processor        (12 CPUs), ~3.4GHz
           Memory: 24576MB RAM
        Page file: 19644MB used, 8463MB available
  DirectX Version: DirectX 12
```

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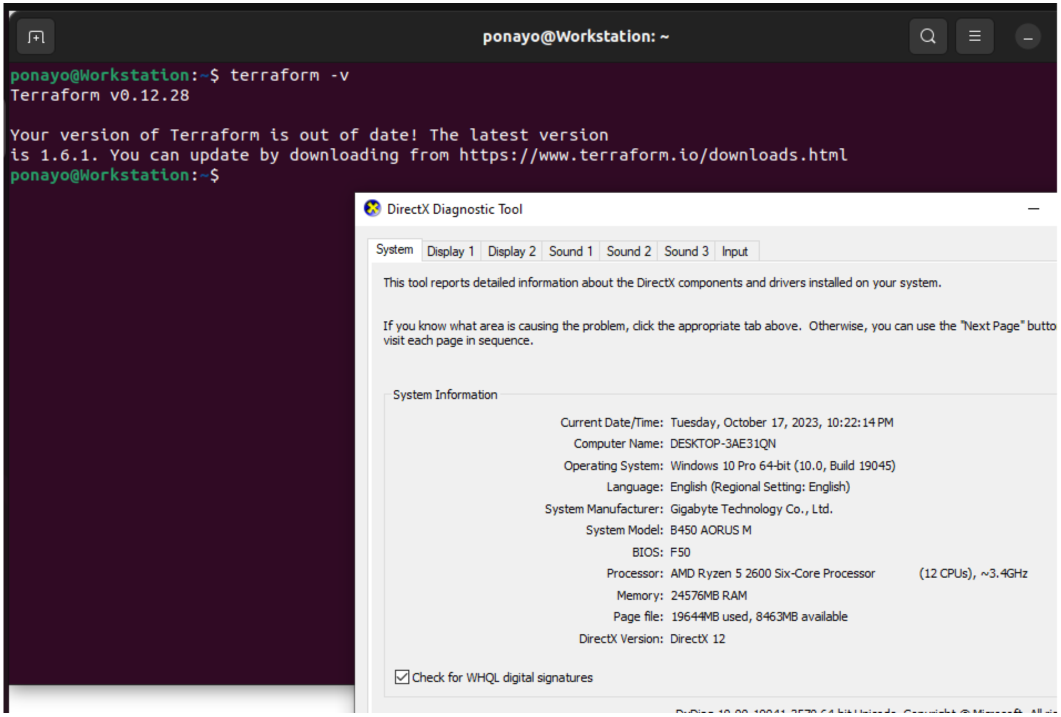
4. On the Ubuntu remote workstation, type terraform to verify installation of terraform. Describe the output.
   By checking the terraform in the remote workstation. The output was “the version of terraform is in latest version” which means it was a successful installation..



```
ponayo@Workstation:~$ terraform -v
Terraform v0.12.28

Your version of Terraform is out of date! The latest version
is 1.6.1. You can update by downloading from https://www.terraform.io/downloads.html
ponayo@Workstation:~$
```

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System Model: B450 AORUS M
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Memory: 24576MB RAM
Page file: 19644MB used, 8463MB available
DirectX Version: DirectX 12

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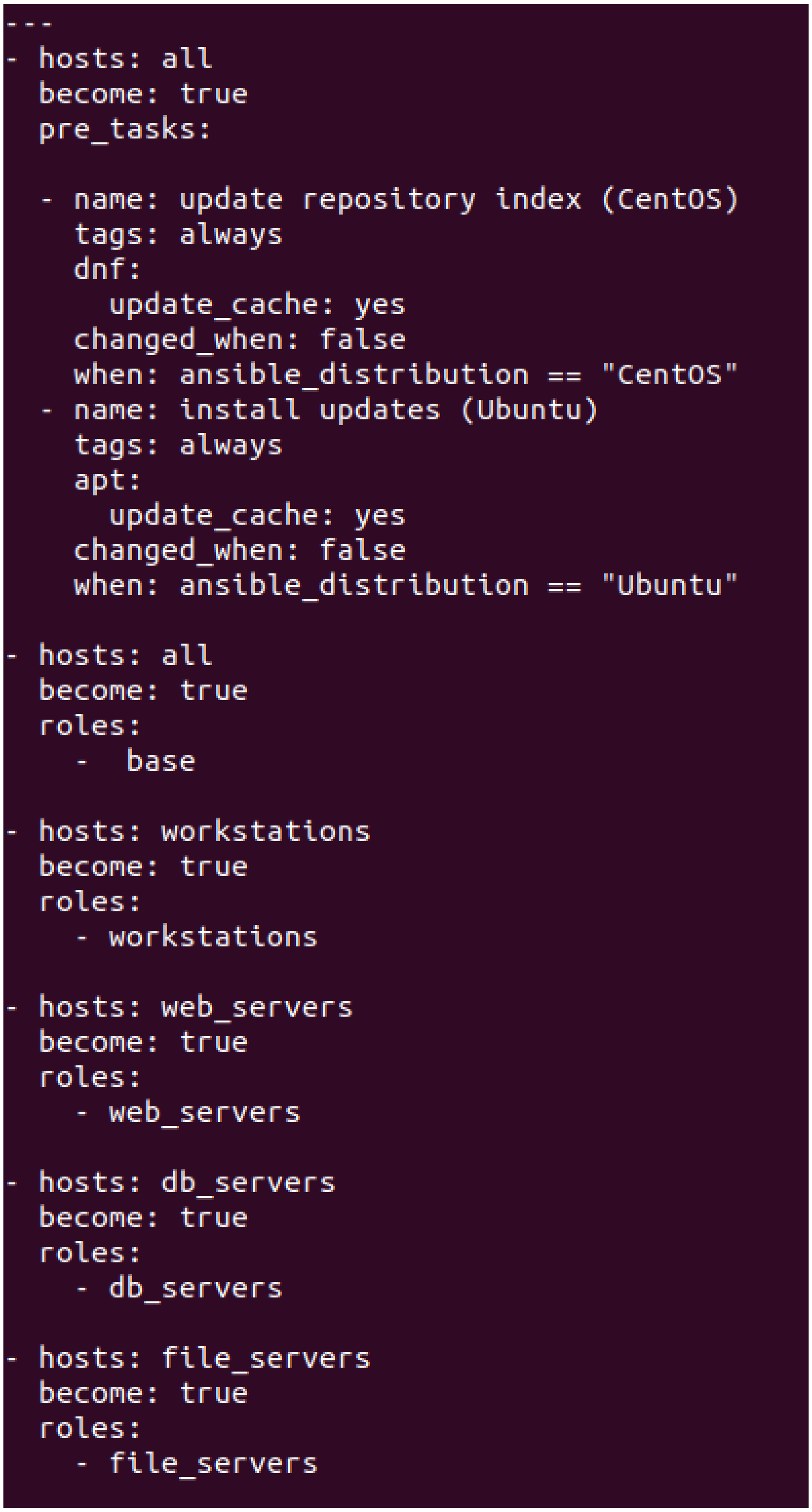
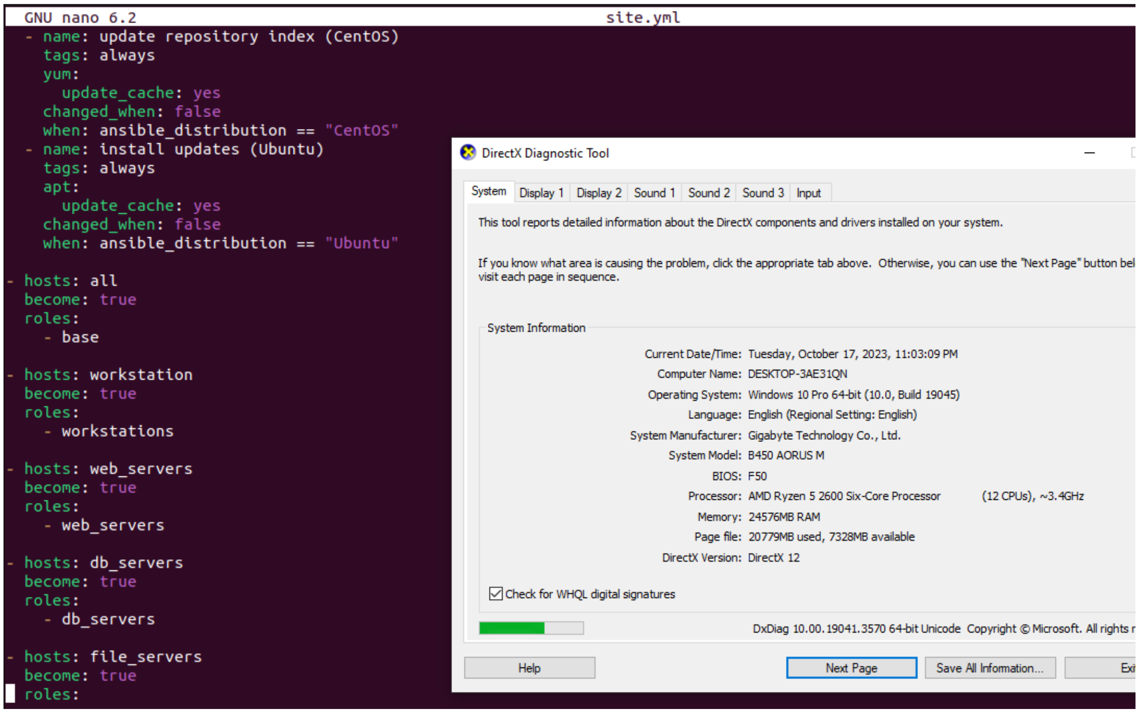
Task 3: Create roles

1. Edit the site.yml. Configure roles as follows: (make sure to create a copy of the old site.yml file because you will be copying the specific plays for all groups)



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

  - name: update repository index (CentOS)
    tags: always
    dnf:
      update_cache: yes
    changed_when: false
    when: ansible_distribution == "CentOS"
  - name: install updates (Ubuntu)
    tags: always
    apt:
      update_cache: yes
    changed_when: false
    when: ansible_distribution == "Ubuntu"

- hosts: all
  become: true
  roles:
    -  base

- hosts: workstations
  become: true
  roles:
    - workstations

- hosts: web_servers
  become: true
  roles:
    - web_servers

- hosts: db_servers
  become: true
  roles:
    - db_servers

- hosts: file_servers
  become: true
  roles:
    - file_servers
```

Save the file and exit.



```
  GNU nano 6.2                                  site.yml
  - name: update repository index (CentOS)
    tags: always
    yum:
      update_cache: yes
    changed_when: false
    when: ansible_distribution == "CentOS"
  - name: install updates (Ubuntu)
    tags: always
    apt:
      update_cache: yes
    changed_when: false
    when: ansible_distribution == "Ubuntu"

- hosts: all
  become: true
  roles:
    - base

- hosts: workstation
  become: true
  roles:
    - workstations

- hosts: web_servers
  become: true
  roles:
    - web_servers

- hosts: db_servers
  become: true
  roles:
    - db_servers

- hosts: file_servers
  become: true
  roles:
```

DirectX Diagnostic Tool

System | Display 1 | Display 2 | Sound 1 | Sound 2 | Sound 3 | Input

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visit each page in sequence.

System Information

Current Date/Time:	Tuesday, October 17, 2023, 11:03:09 PM
Computer Name:	DESKTOP-3AE31QN
Operating System:	Windows 10 Pro 64-bit (10.0, Build 19045)
Language:	English (Regional Setting: English)
System Manufacturer:	Gigabyte Technology Co., Ltd.
System Model:	B450 AORUS M
BIOS:	F50
Processor:	AMD Ryzen 5 2600 Six-Core Processor (12 CPUs), ~3.4GHz
Memory:	24576MB RAM
Page file:	20779MB used, 7328MB available
DirectX Version:	DirectX 12

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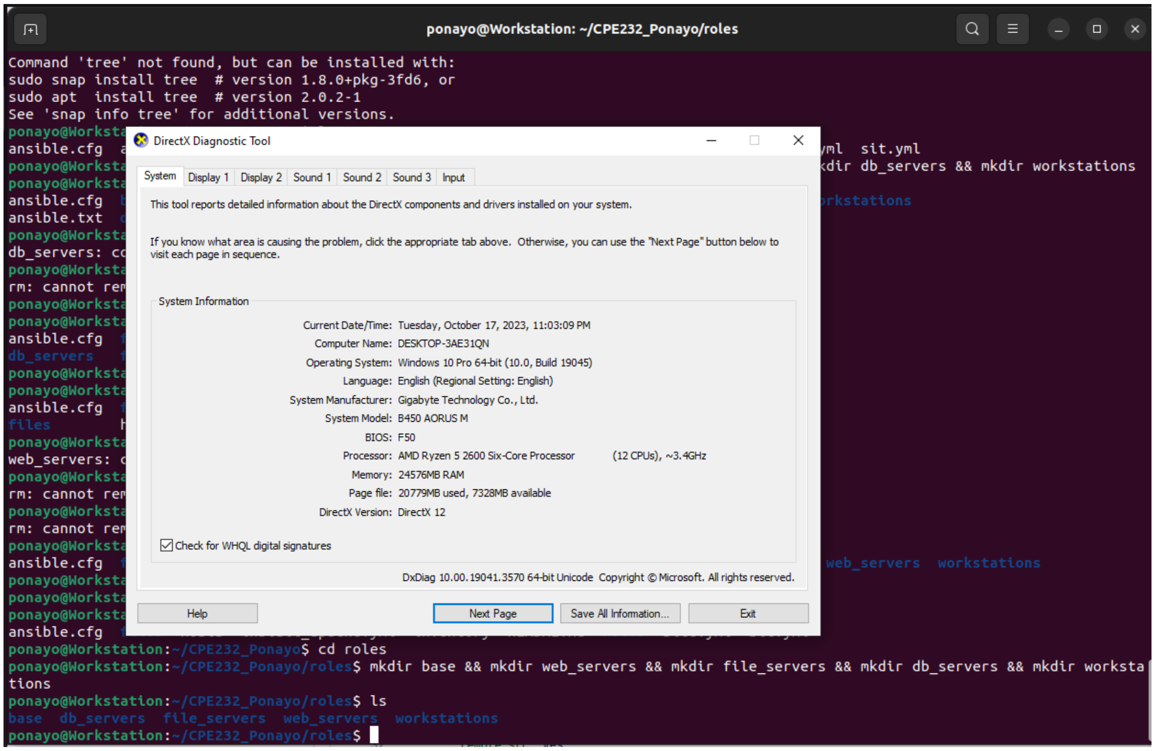
2. Under the same directory, create a new directory and name it roles. Enter the roles directory and create new directories: base, web_servers, file_servers, db_servers and workstations. For each directory, create a directory and name it tasks.



```
Command 'tree' not found, but can be installed with:
sudo snap install tree  # version 1.8.0+pkg-3fd6, or
sudo apt  install tree  # version 2.0.2-1
See 'snap info tree' for additional versions.
ponayo@Worksta
ansible.cfg  a                                                   yml  sit.yml
ponayo@Worksta                                                   kdir db_servers && mkdir workstations
ponayo@Worksta
ansible.cfg  b                                                   rkstations
ansible.txt  c
ponayo@Worksta
db_servers: cc
ponayo@Worksta
rm: cannot rem
ponayo@Worksta
ponayo@Worksta
ansible.cfg  f
db_servers   f
ponayo@Worksta
ponayo@Worksta
ansible.cfg  f
files        h
ponayo@Worksta
web_servers: c
ponayo@Worksta
rm: cannot rem
ponayo@Worksta
rm: cannot rem
ponayo@Worksta
ansible.cfg  f                                                   web_servers  workstations
ponayo@Worksta
ponayo@Worksta
ponayo@Worksta
ansible.cfg  f
ponayo@Workstation:~/CPE232_Ponayo$ cd roles
ponayo@Workstation:~/CPE232_Ponayo/roles$ mkdir base && mkdir web_servers && mkdir file_servers && mkdir db_servers && mkdir worksta
tions
ponayo@Workstation:~/CPE232_Ponayo/roles$ ls
base  db_servers  file_servers  web_servers  workstations
ponayo@Workstation:~/CPE232_Ponayo/roles$ 
```

DirectX Diagnostic Tool

System | Display 1 | Display 2 | Sound 1 | Sound 2 | Sound 3 | 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, October 17, 2023, 11:03:09 PM
Computer Name: DESKTOP-3AE31QN
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: Gigabyte Technology Co., Ltd.
System Model: B450 AORUS M
BIOS: F50
Processor: AMD Ryzen 5 2600 Six-Core Processor (12 CPUs), ~3.4GHz
Memory: 24576MB RAM
Page file: 20779MB used, 7328MB available
DirectX Version: DirectX 12

☑ Check for WHQL digital signatures

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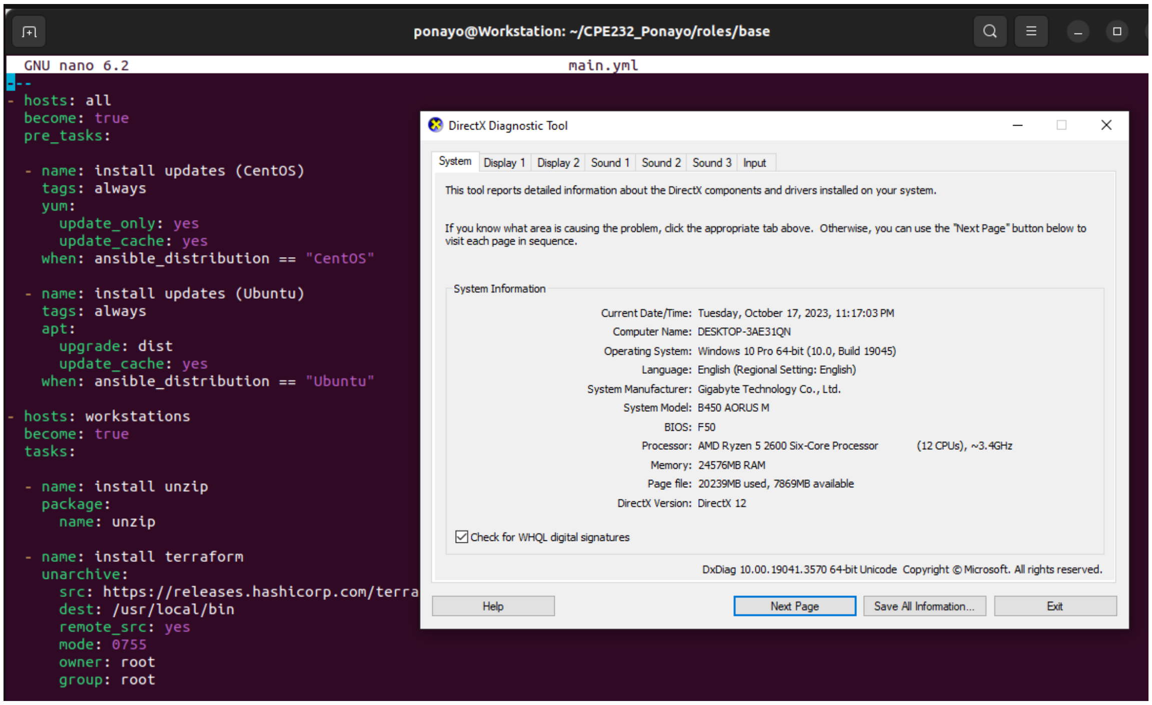
3. Go to tasks for all directory and create a file. Name it main.yml. In each of the tasks for all directories, copy and paste the code from the old site.yml file. Show all contents of main.yml files for all tasks.

base:



```
---
- 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: workstations
  become: true
  tasks:

  - name: install unzip
    package:
      name: unzip

  - name: install terraform
    unarchive:
      src: https://releases.hashicorp.com/terra
      dest: /usr/local/bin
      remote_src: yes
      mode: 0755
      owner: root
      group: root
```

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

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System Information

```
Current Date/Time: Tuesday, October 17, 2023, 11:17:03 PM
    Computer Name: DESKTOP-3AE31QN
 Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
         Language: English (Regional Setting: English)
System Manufacturer: Gigabyte Technology Co., Ltd.
     System Model: B450 AORUS M
             BIOS: F50
        Processor: AMD Ryzen 5 2600 Six-Core Processor        (12 CPUs), ~3.4GHz
           Memory: 24576MB RAM
        Page file: 20239MB used, 7869MB available
  DirectX Version: DirectX 12
```

☑ Check for WHQL digital signatures

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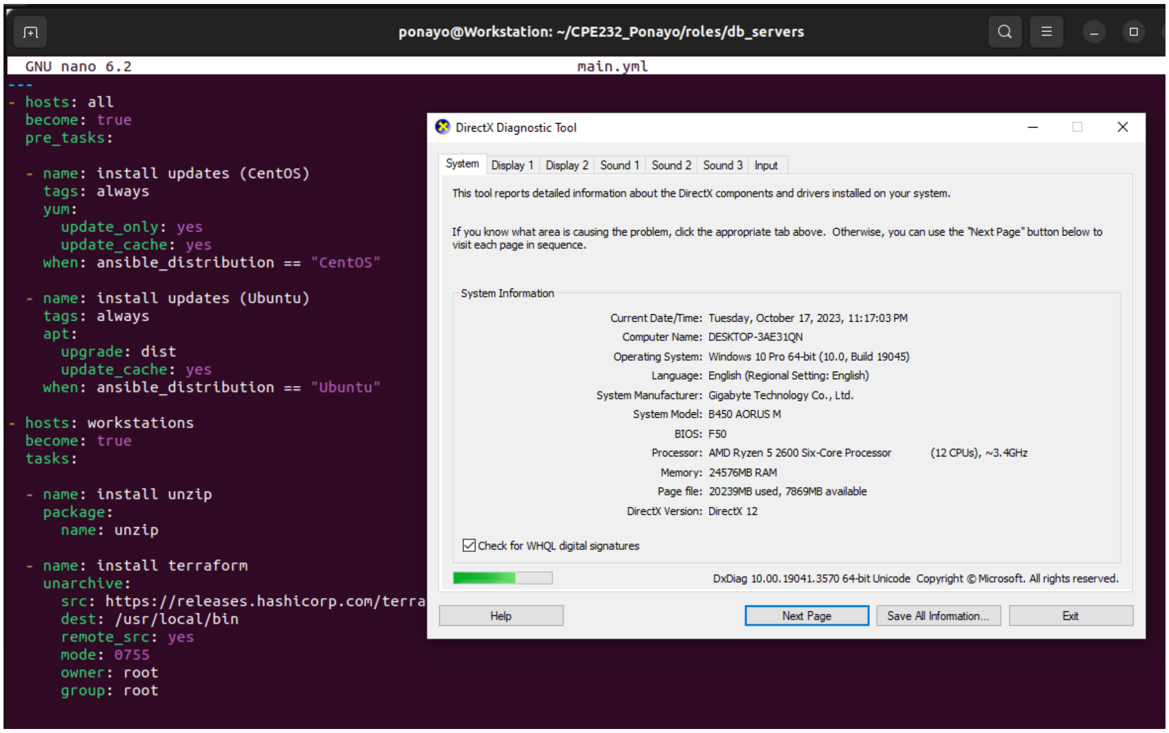
db_servers:



```
---
- 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: workstations
  become: true
  tasks:

  - name: install unzip
    package:
      name: unzip

  - name: install terraform
    unarchive:
      src: https://releases.hashicorp.com/terra
      dest: /usr/local/bin
      remote_src: yes
      mode: 0755
      owner: root
      group: root
```

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

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System Information

```
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         Language: English (Regional Setting: English)
System Manufacturer: Gigabyte Technology Co., Ltd.
     System Model: B450 AORUS M
             BIOS: F50
        Processor: AMD Ryzen 5 2600 Six-Core Processor        (12 CPUs), ~3.4GHz
           Memory: 24576MB RAM
        Page file: 20239MB used, 7869MB available
  DirectX Version: DirectX 12
```

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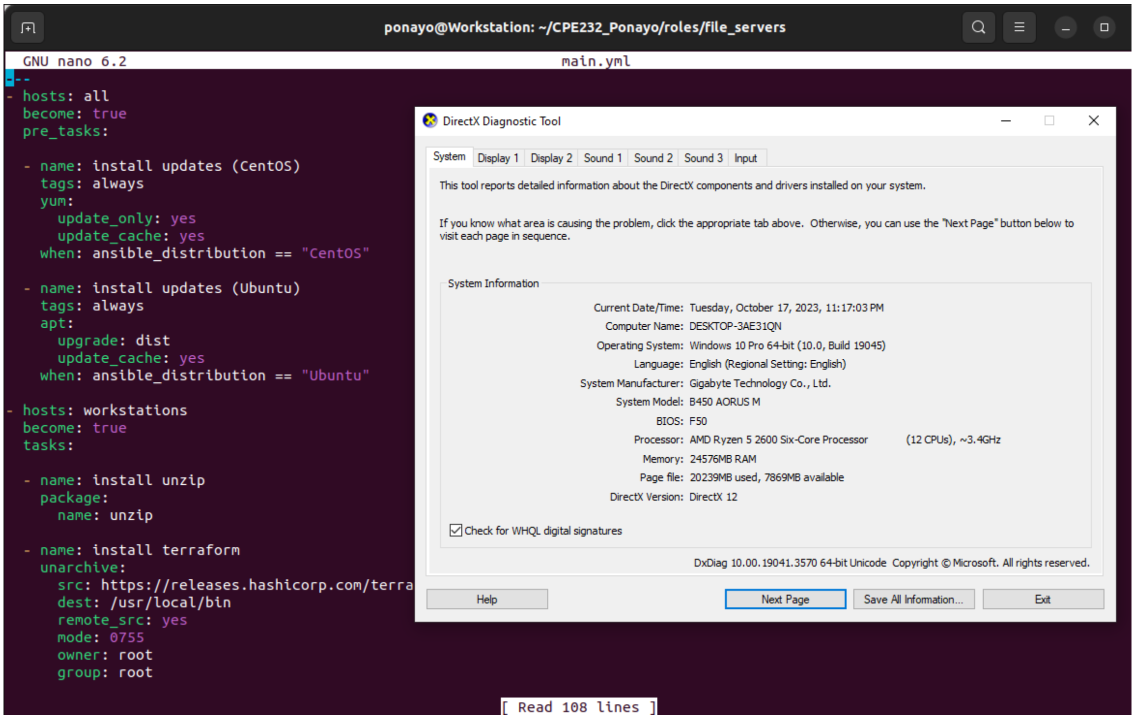
file_servers:



ponayo@Workstation: ~/CPE232_Ponayo/roles/file_servers

```
GNU nano 6.2                                  main.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: workstations
  become: true
  tasks:

  - name: install unzip
    package:
      name: unzip

  - name: install terraform
    unarchive:
      src: https://releases.hashicorp.com/terra
      dest: /usr/local/bin
      remote_src: yes
      mode: 0755
      owner: root
      group: root

                                          [ Read 108 lines ]
```

DirectX Diagnostic Tool

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System Manufacturer: Gigabyte Technology Co., Ltd.
       System Model: B450 AORUS M
               BIOS: F50
          Processor: AMD Ryzen 5 2600 Six-Core Processor       (12 CPUs), ~3.4GHz
             Memory: 24576MB RAM
          Page file: 20239MB used, 7869MB available
    DirectX Version: DirectX 12
```

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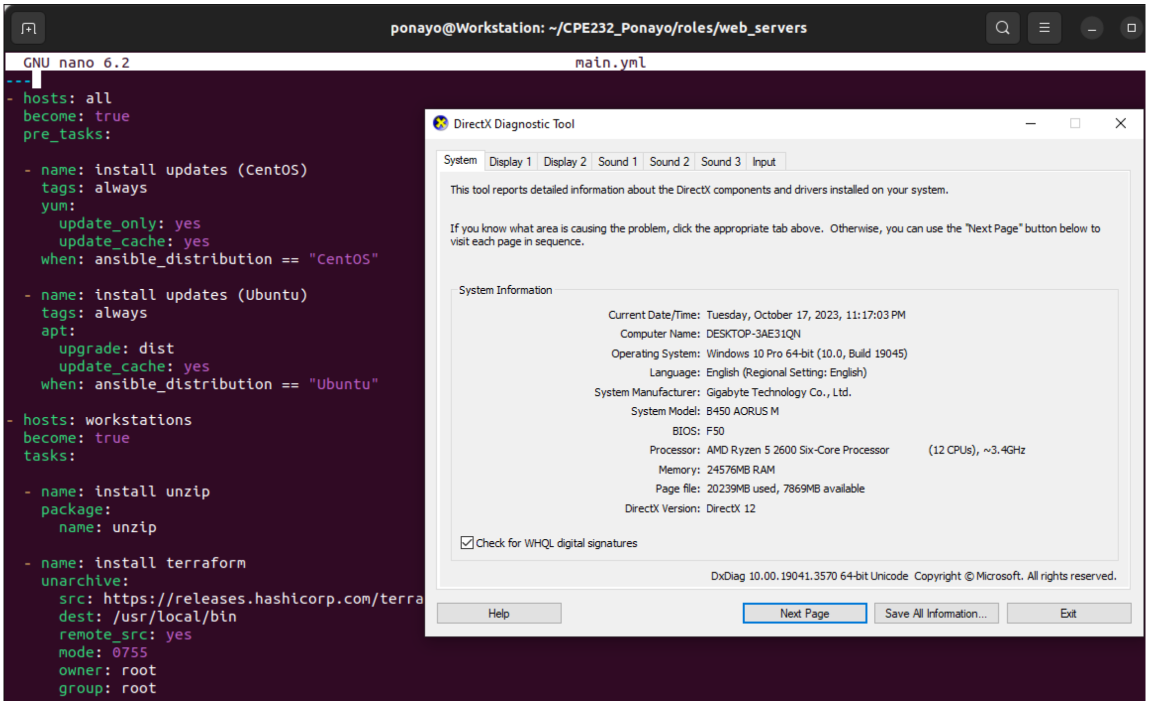
web_servers:



ponayo@Workstation: ~/CPE232_Ponayo/roles/web_servers

```
GNU nano 6.2                                  main.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: workstations
  become: true
  tasks:

  - name: install unzip
    package:
      name: unzip

  - name: install terraform
    unarchive:
      src: https://releases.hashicorp.com/terra
      dest: /usr/local/bin
      remote_src: yes
      mode: 0755
      owner: root
      group: root
```

DirectX Diagnostic Tool

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       System Model: B450 AORUS M
               BIOS: F50
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             Memory: 24576MB RAM
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    DirectX Version: DirectX 12
```

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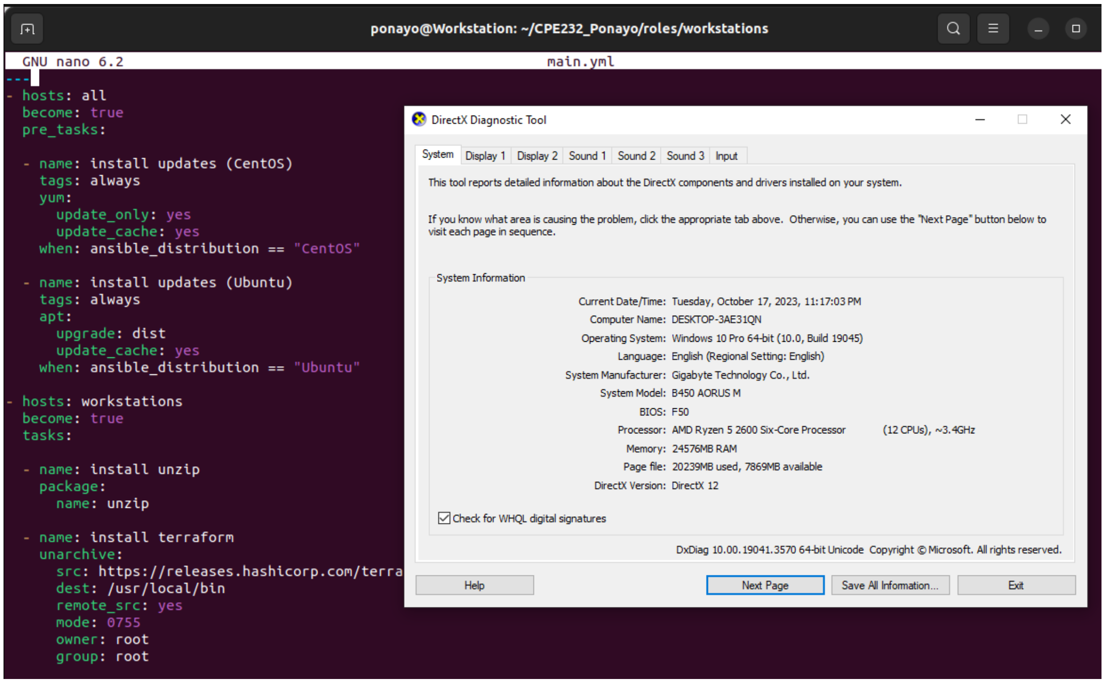
workstations:



ponayo@Workstation: ~/CPE232_Ponayo/roles/workstations

```
GNU nano 6.2                                        main.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: workstations
  become: true
  tasks:

  - name: install unzip
    package:
      name: unzip

  - name: install terraform
    unarchive:
      src: https://releases.hashicorp.com/terra
      dest: /usr/local/bin
      remote_src: yes
      mode: 0755
      owner: root
      group: root
```

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DirectX Version: DirectX 12

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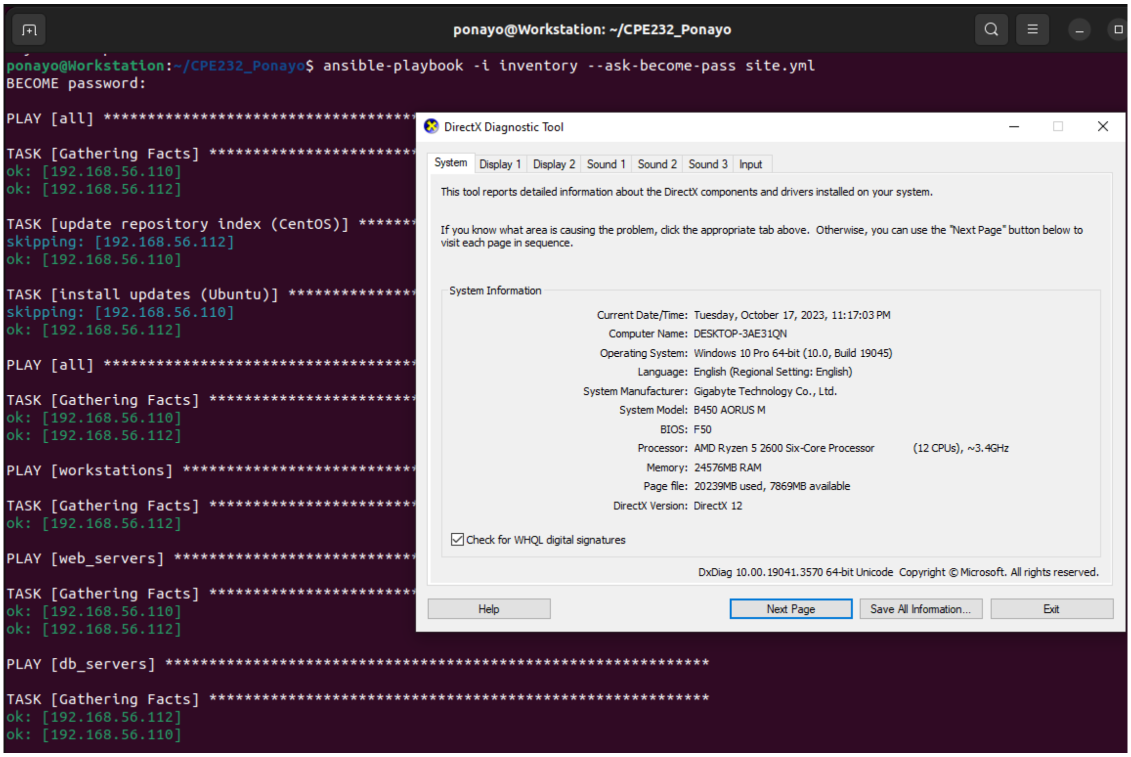
4. Run the site.yml playbook and describe the output.



ponayo@Workstation: ~/CPE232_Ponayo

```
ponayo@Workstation:~/CPE232_Ponayo$ ansible-playbook -i inventory --ask-become-pass site.yml
BECOME password:

PLAY [all] *************************************

TASK [Gathering Facts] *************************
ok: [192.168.56.110]
ok: [192.168.56.112]

TASK [update repository index (CentOS)] ******
skipping: [192.168.56.112]
ok: [192.168.56.110]

TASK [install updates (Ubuntu)] **************
skipping: [192.168.56.110]
ok: [192.168.56.112]

PLAY [all] *************************************

TASK [Gathering Facts] *************************
ok: [192.168.56.110]
ok: [192.168.56.112]

PLAY [workstations] ****************************

TASK [Gathering Facts] *************************
ok: [192.168.56.112]

PLAY [web_servers] *****************************

TASK [Gathering Facts] *************************
ok: [192.168.56.110]
ok: [192.168.56.112]

PLAY [db_servers] ***************************************************************

TASK [Gathering Facts] **********************************************************
ok: [192.168.56.112]
ok: [192.168.56.110]
```

DirectX Diagnostic Tool

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

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Processor: AMD Ryzen 5 2600 Six-Core Processor (12 CPUs), ~3.4GHz
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Reflections:

Answer the following:

1. What is the importance of creating roles?

   There are a lot of importance in creating roles, one of them is to ensure compliance with regulations. There are regulations that require certain tasks to be performed by people with specific qualifications. By making or creating a role, can help us to ensure that these regulations are being followed. And also by creating a role, it can help to improve efficiency, productivity, and etc.

2. What is the importance of managing files?

   I think there are a lot of importance of managing files and one of them is to improve collaboration. When you're sharing a file with others it is important to maintain and manage them. By creating or making a system that can manage files, can help to ensure that everyone is using the same version of a file that changes are tracked