Name: Andreu John L. Salvador	**Date Performed: 11/10/2023**
Course/Section: CPE31S5	**Date Submitted: 14/10/2023**
Instructor: Engr. Roman Richard	**Semester and SY: 1st sem 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.

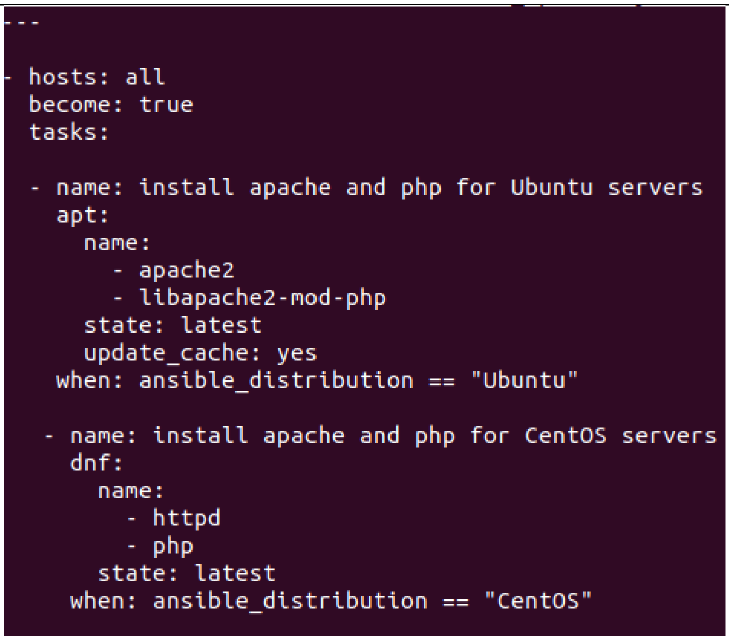
We also try to manage services that do not automatically run using the automations in playbook. For example, when we install web servers or httpd for CentOS, we notice that the service did not start automatically.

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.

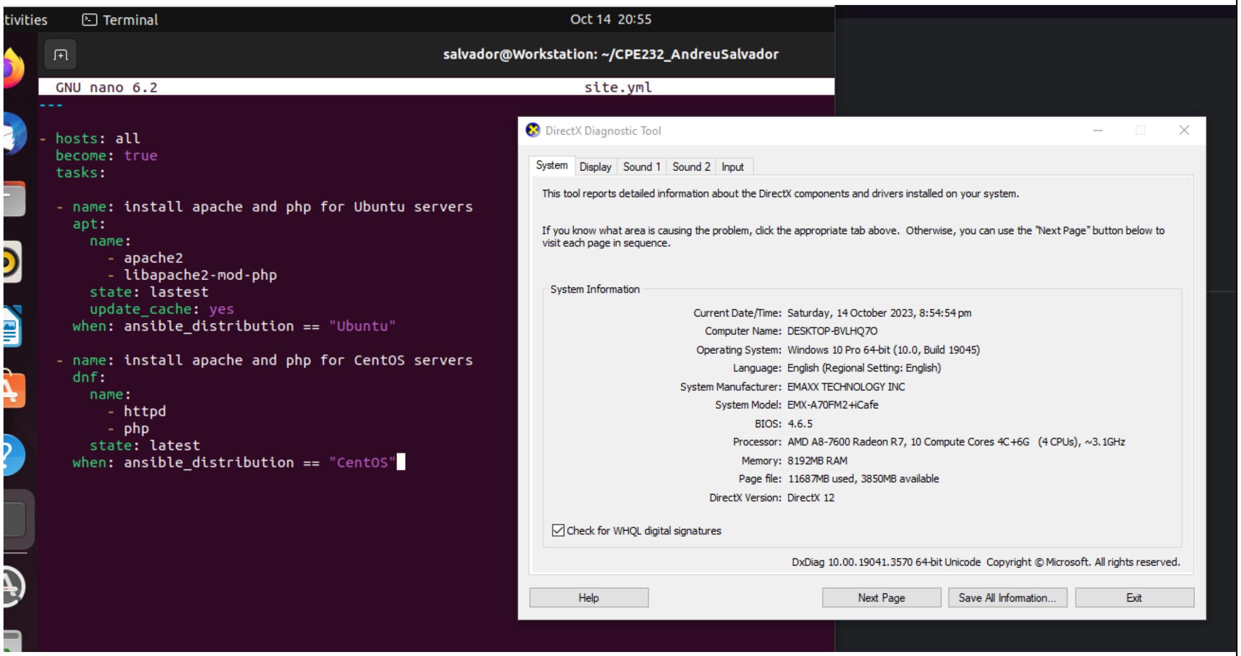


```
---

- 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"
```



```
---

- hosts: all
  become: true
  tasks:

  - name: install apache and php for Ubuntu servers
    apt:
      name:
        - apache2
        - libapache2-mod-php
      state: lastest
      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"
```

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, 14 October 2023, 8:54:54 pm
Computer Name: DESKTOP-BVLHQ7O
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2-HCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 11687MB used, 3850MB available
DirectX Version: DirectX 12

☑ Check for WHQL digital signatures

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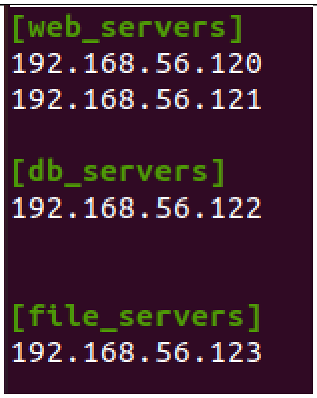
2. Edit the inventory file. Remove the variables we put in our last activity and group according to the image shown below:

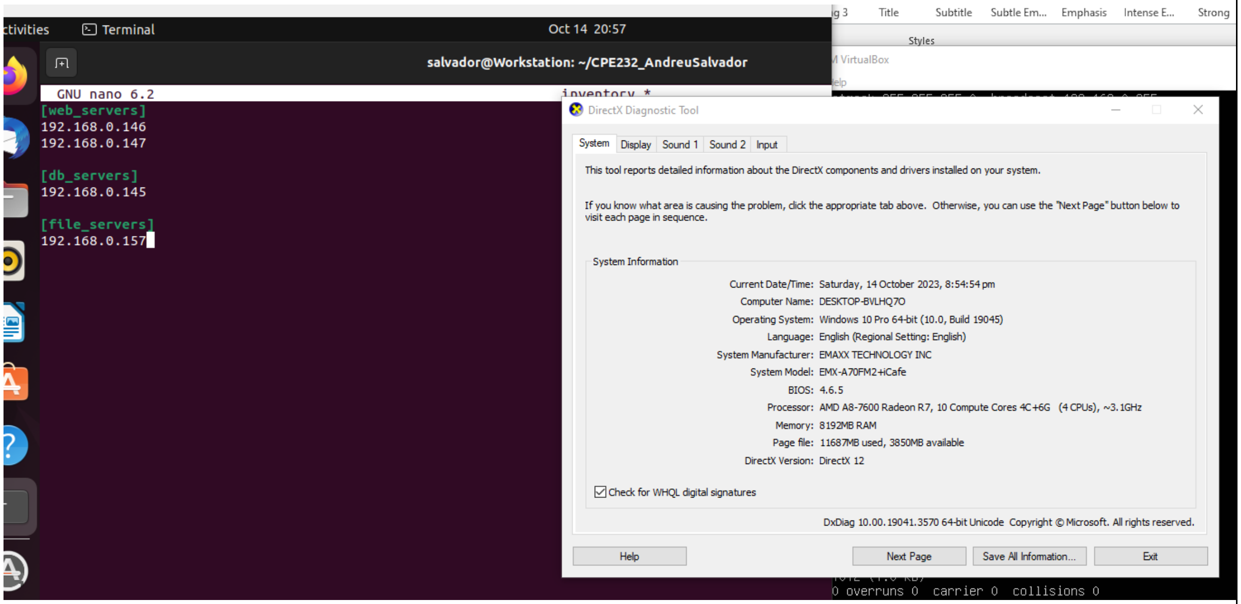


```
[web_servers]
192.168.56.120
192.168.56.121

[db_servers]
192.168.56.122


[file_servers]
192.168.56.123
```

Make sure to save the file and exit.



```
  GNU nano 6.2                                   inventory *
[web_servers]
192.168.0.146
192.168.0.147

[db_servers]
192.168.0.145

[file_servers]
192.168.0.157
```

```
0 overruns 0  carrier 0  collisions 0
```

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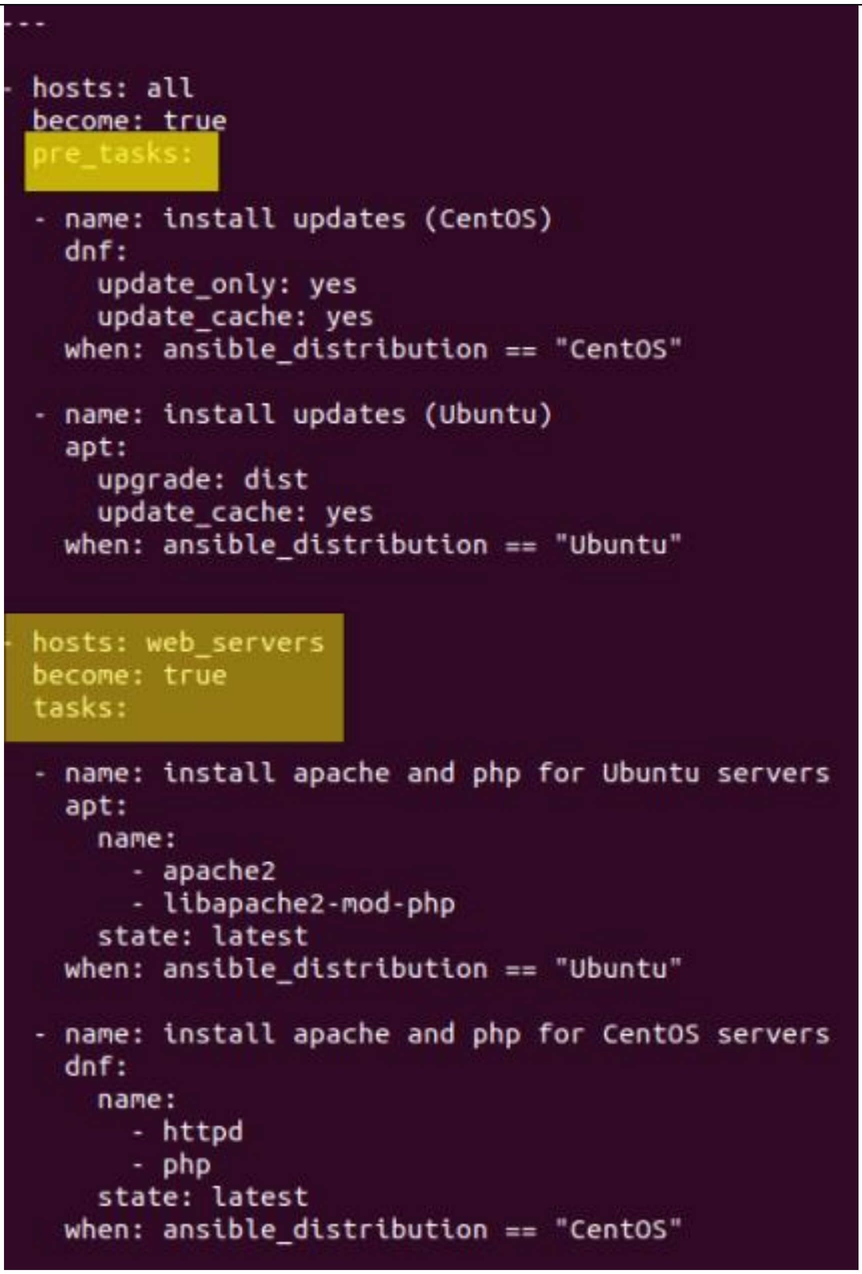
Note:
[web_servers]
192.168.0.146 server1
192.168.0.147 server2
[db_servers]
192.168.0.145 CentOS server
[file_servers]
192.168.0.157 server3

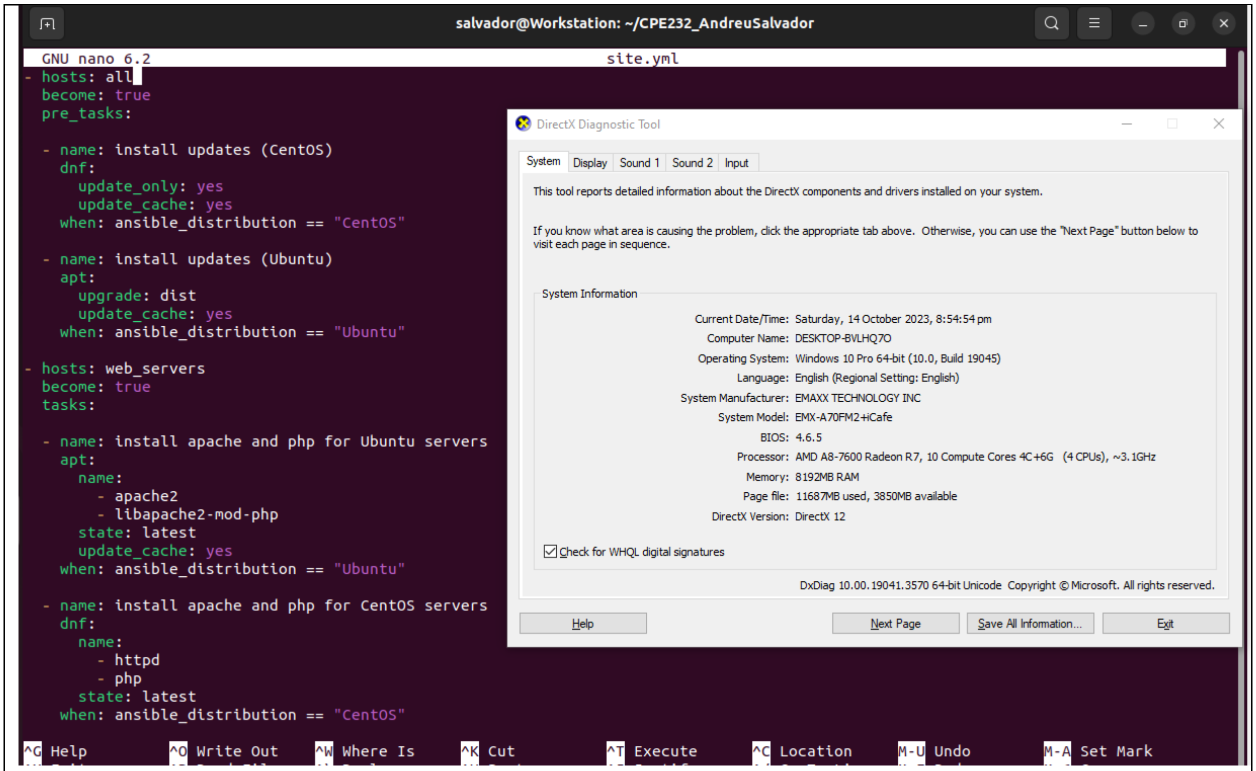
Right now, we have created groups in our inventory file and put each server in its own group. In other cases, you can have a server be a member of multiple groups, for example you have a test server that is also a web server.

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.



salvador@Workstation: ~/CPE232_AndreuSalvador

```
 GNU nano 6.2                              site.yml
- 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
      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"

^G Help      ^O Write Out  ^W Where Is  ^K Cut      ^T Execute  ^C Location  M-U Undo   M-A Set Mark
```

DirectX Diagnostic Tool

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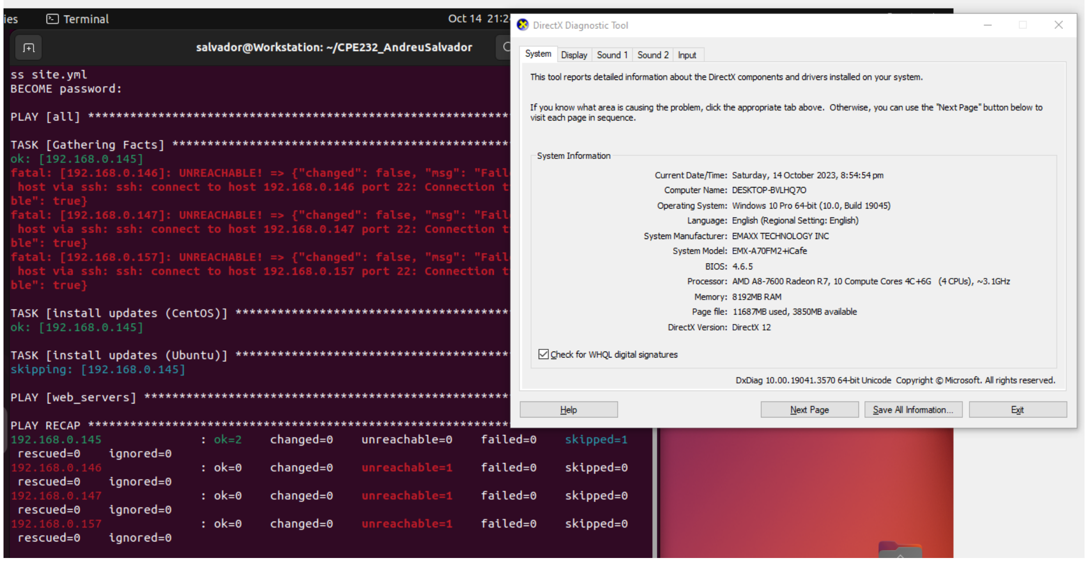
The *pre-tasks* command tells the ansible to run it before any other thing. In the *pre-tasks*, CentOS will install updates while Ubuntu will upgrade its distribution package. This will run before running the second play, which is targeted at *web_servers*. In the second play, apache and php will be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

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

CentOS Server



salvador@Workstation: ~/CPE232_AndreuSalvador

```
ss site.yml
BECOME password:

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

TASK [Gathering Facts] ******************************************************
ok: [192.168.0.145]
fatal: [192.168.0.146]: UNREACHABLE! => {"changed": false, "msg": "Fail
 host via ssh: ssh: connect to host 192.168.0.146 port 22: Connection t
ble": true}
fatal: [192.168.0.147]: UNREACHABLE! => {"changed": false, "msg": "Fail
 host via ssh: ssh: connect to host 192.168.0.147 port 22: Connection t
ble": true}
fatal: [192.168.0.157]: UNREACHABLE! => {"changed": false, "msg": "Fail
 host via ssh: ssh: connect to host 192.168.0.157 port 22: Connection t
ble": true}

TASK [install updates (CentOS)] *********************************************
ok: [192.168.0.145]

TASK [install updates (Ubuntu)] *********************************************
skipping: [192.168.0.145]

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

PLAY RECAP ******************************************************************
192.168.0.145              : ok=2    changed=0    unreachable=0    failed=0    skipped=1
 rescued=0    ignored=0
192.168.0.146              : ok=0    changed=0    unreachable=1    failed=0    skipped=0
 rescued=0    ignored=0
192.168.0.147              : ok=0    changed=0    unreachable=1    failed=0    skipped=0
 rescued=0    ignored=0
192.168.0.157              : ok=0    changed=0    unreachable=1    failed=0    skipped=0
 rescued=0    ignored=0
```

DirectX Diagnostic Tool

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BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 11687MB used, 3850MB available
DirectX Version: DirectX 12

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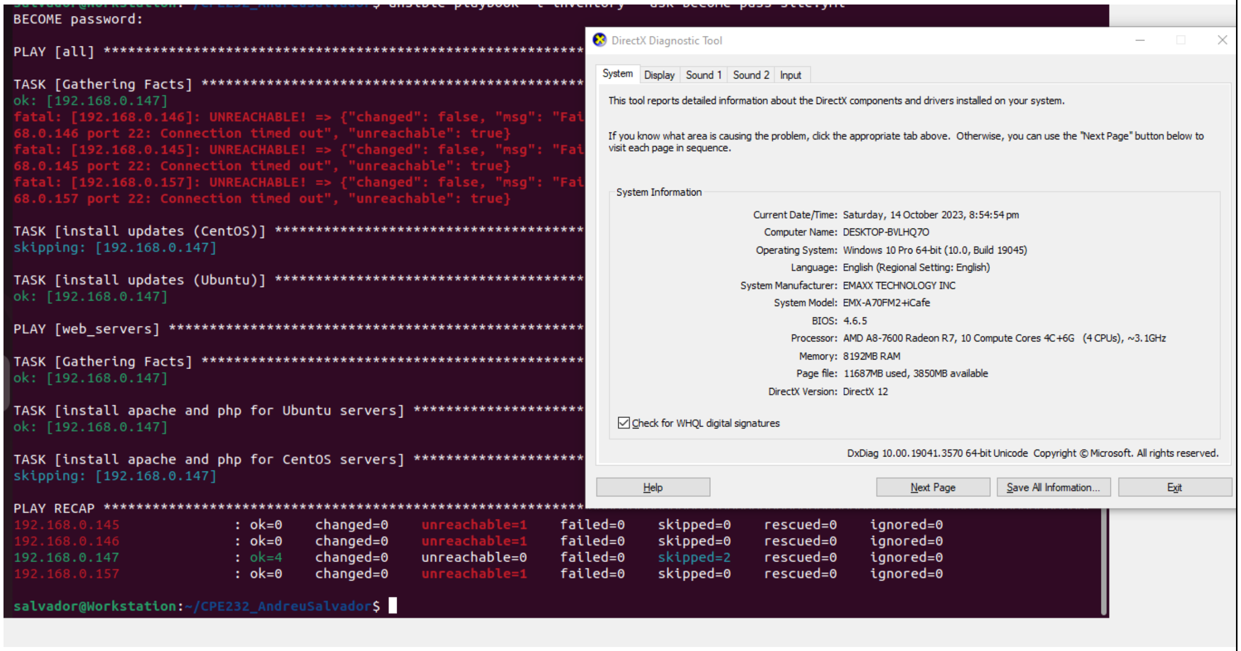
Server2



```
salvador@Workstation:~/CPE232_AndreuSalvador$ ansible-playbook -i inventory --ask-become-pass site.yml
BECOME password:

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

TASK [Gathering Facts] ****************************************
ok: [192.168.0.147]
fatal: [192.168.0.146]: UNREACHABLE! => {"changed": false, "msg": "Fai
68.0.146 port 22: Connection timed out", "unreachable": true}
fatal: [192.168.0.145]: UNREACHABLE! => {"changed": false, "msg": "Fai
68.0.145 port 22: Connection timed out", "unreachable": true}
fatal: [192.168.0.157]: UNREACHABLE! => {"changed": false, "msg": "Fai
68.0.157 port 22: Connection timed out", "unreachable": true}

TASK [install updates (CentOS)] *******************************
skipping: [192.168.0.147]

TASK [install updates (Ubuntu)] *******************************
ok: [192.168.0.147]

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

TASK [Gathering Facts] ****************************************
ok: [192.168.0.147]

TASK [install apache and php for Ubuntu servers] **************
ok: [192.168.0.147]

TASK [install apache and php for CentOS servers] **************
skipping: [192.168.0.147]

PLAY RECAP ****************************************************
192.168.0.145              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0
192.168.0.146              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0
192.168.0.147              : ok=4    changed=0    unreachable=0    failed=0    skipped=2    rescued=0    ignored=0
192.168.0.157              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0

salvador@Workstation:~/CPE232_AndreuSalvador$ 
```

DirectX Diagnostic Tool

System | Display | Sound 1 | Sound 2 | Input

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Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2+iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 11687MB used, 3850MB available
DirectX Version: DirectX 12

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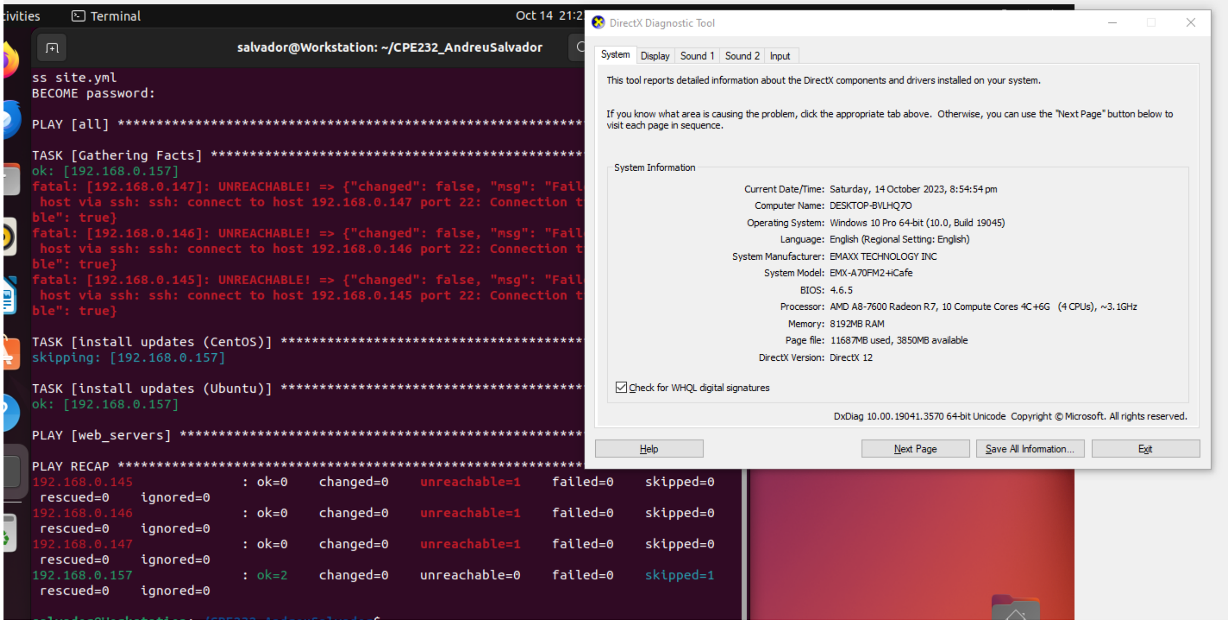
Server3



```
ss site.yml
BECOME password:

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

TASK [Gathering Facts] ****************************************
ok: [192.168.0.157]
fatal: [192.168.0.147]: UNREACHABLE! => {"changed": false, "msg": "Fail
 host via ssh: ssh: connect to host 192.168.0.147 port 22: Connection t
ble": true}
fatal: [192.168.0.146]: UNREACHABLE! => {"changed": false, "msg": "Fail
 host via ssh: ssh: connect to host 192.168.0.146 port 22: Connection t
ble": true}
fatal: [192.168.0.145]: UNREACHABLE! => {"changed": false, "msg": "Fail
 host via ssh: ssh: connect to host 192.168.0.145 port 22: Connection t
ble": true}

TASK [install updates (CentOS)] *******************************
skipping: [192.168.0.157]

TASK [install updates (Ubuntu)] *******************************
ok: [192.168.0.157]

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

PLAY RECAP ****************************************************
192.168.0.145              : ok=0    changed=0    unreachable=1    failed=0    skipped=0
 rescued=0    ignored=0
192.168.0.146              : ok=0    changed=0    unreachable=1    failed=0    skipped=0
 rescued=0    ignored=0
192.168.0.147              : ok=0    changed=0    unreachable=1    failed=0    skipped=0
 rescued=0    ignored=0
192.168.0.157              : ok=2    changed=0    unreachable=0    failed=0    skipped=1
 rescued=0    ignored=0
```

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

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Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2+iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 11687MB used, 3850MB available
DirectX Version: DirectX 12

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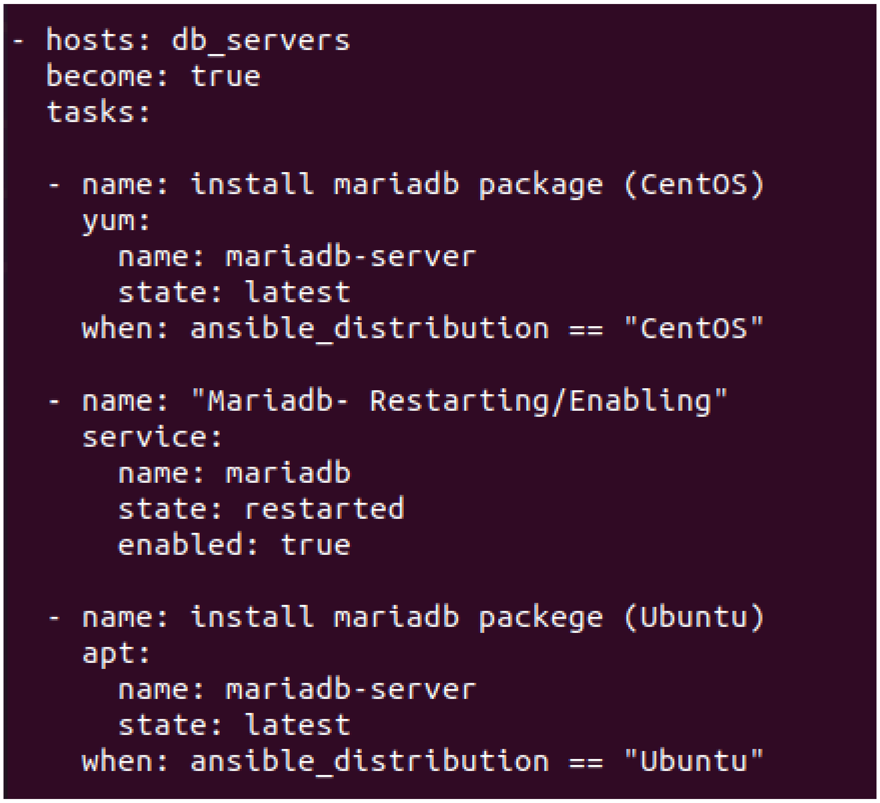
Note: I run it individually since my pc can only accommodate two running virtual machines

Seems like the changes wasnt new to the servers that's why it shows ok. I couldn't captured the changes in the server 1 earlier since I ran into a problem and was nervous of the red letters so I rushed in fixing it.

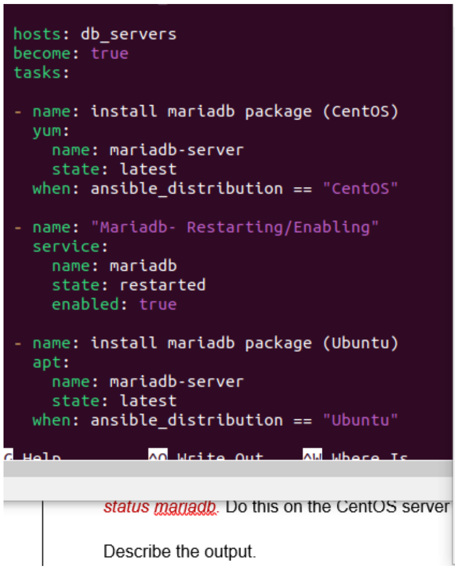
4. Let's try to edit again the *site.yml* file. This time, we are going to add plays targeting the other servers. This time we target the *db_servers* by adding it on

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"
```

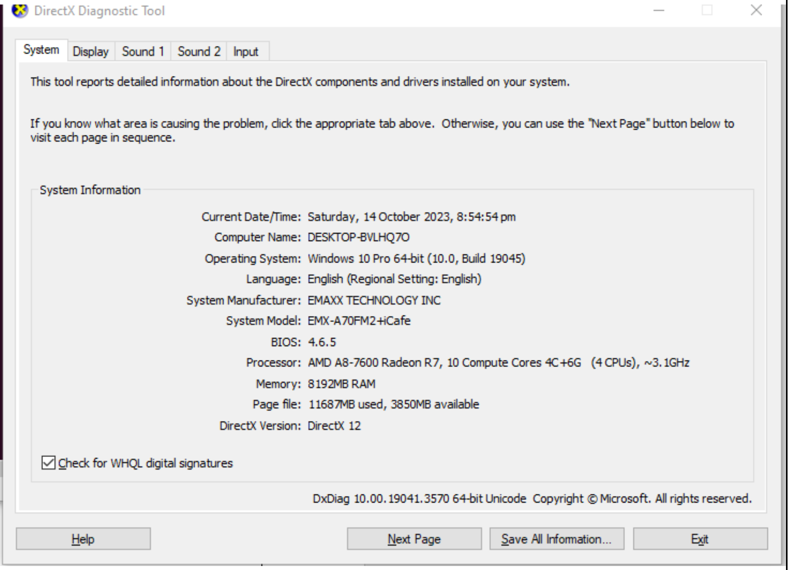
Make sure to save the file and exit.



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

^G Help          ^O Write Out     ^W Where Is
```

status mariadb. Do this on the CentOS server

Describe the output.



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```
   Current Date/Time: Saturday, 14 October 2023, 8:54:54 pm
       Computer Name: DESKTOP-BVLHQ7O
    Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
            Language: English (Regional Setting: English)
 System Manufacturer: EMAXX TECHNOLOGY INC
        System Model: EMX-A70FM2+iCafe
                BIOS: 4.6.5
           Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G   (4 CPUs), ~3.1GHz
              Memory: 8192MB RAM
           Page file: 11687MB used, 3850MB available
     DirectX Version: DirectX 12
```

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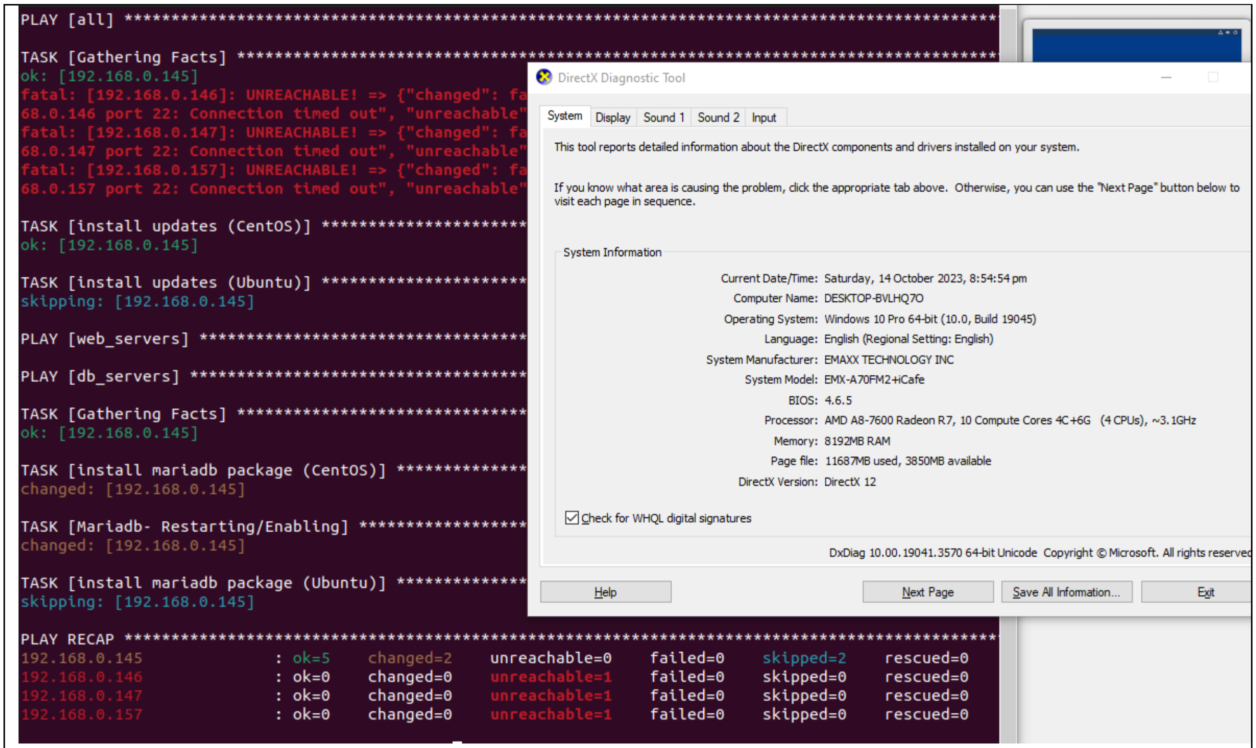
Run the *site.yml* file and de2scribe the result.



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

TASK [Gathering Facts] *******************************************************************************
ok: [192.168.0.145]
fatal: [192.168.0.146]: UNREACHABLE! => {"changed": fa
68.0.146 port 22: Connection timed out", "unreachable"
fatal: [192.168.0.147]: UNREACHABLE! => {"changed": fa
68.0.147 port 22: Connection timed out", "unreachable"
fatal: [192.168.0.157]: UNREACHABLE! => {"changed": fa
68.0.157 port 22: Connection timed out", "unreachable"

TASK [install updates (CentOS)] **********************
ok: [192.168.0.145]

TASK [install updates (Ubuntu)] **********************
skipping: [192.168.0.145]

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

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

TASK [Gathering Facts] *******************************
ok: [192.168.0.145]

TASK [install mariadb package (CentOS)] **************
changed: [192.168.0.145]

TASK [Mariadb- Restarting/Enabling] ******************
changed: [192.168.0.145]

TASK [install mariadb package (Ubuntu)] **************
skipping: [192.168.0.145]

PLAY RECAP *******************************************************************************************
192.168.0.145              : ok=5    changed=2    unreachable=0    failed=0    skipped=2    rescued=0
192.168.0.146              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0
192.168.0.147              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0
192.168.0.157              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0
```

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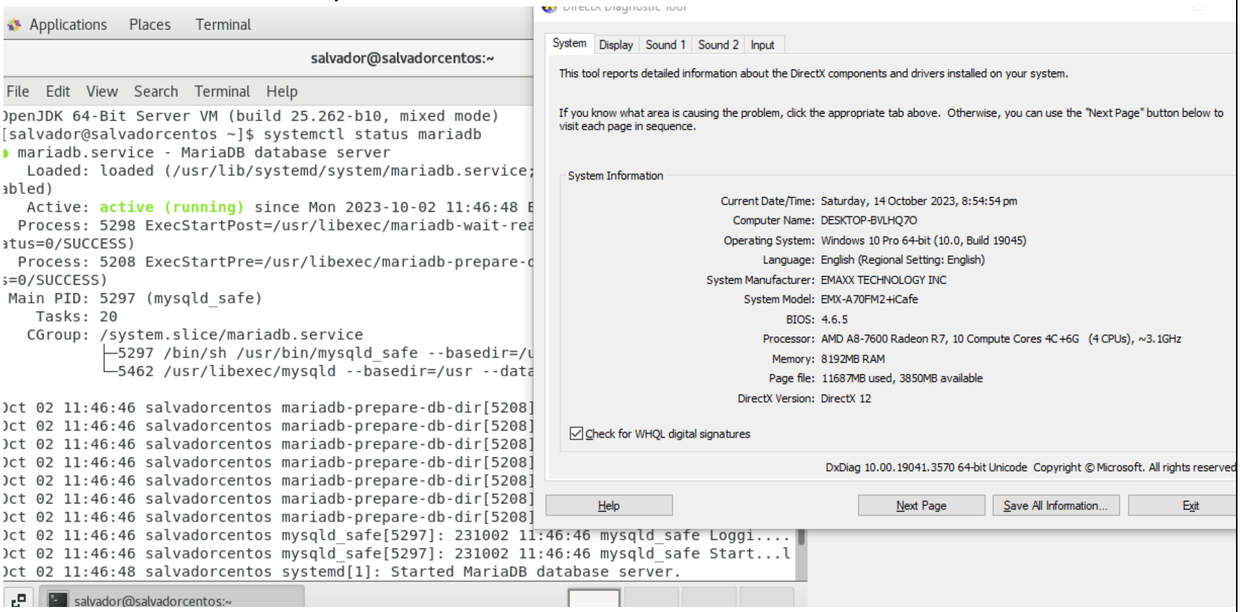
Changed occurred in the server 192.168.0.145 since there are two tasks inside the playbook that wasn't installed yet in that server. The ok was the previous tasks that was already installed in the server. 2 skips indicating it isn't the right type.

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.



```
)penJDK 64-Bit Server VM (build 25.262-b10, mixed mode)
[salvador@salvadorcentos ~]$ systemctl status mariadb
● mariadb.service - MariaDB database server
   Loaded: loaded (/usr/lib/systemd/system/mariadb.service;
abled)
   Active: active (running) since Mon 2023-10-02 11:46:48 E
  Process: 5298 ExecStartPost=/usr/libexec/mariadb-wait-rea
atus=0/SUCCESS)
  Process: 5208 ExecStartPre=/usr/libexec/mariadb-prepare-c
s=0/SUCCESS)
 Main PID: 5297 (mysqld_safe)
    Tasks: 20
   CGroup: /system.slice/mariadb.service
           ├─5297 /bin/sh /usr/bin/mysqld_safe --basedir=/u
           └─5462 /usr/libexec/mysqld --basedir=/usr --data

)ct 02 11:46:46 salvadorcentos mariadb-prepare-db-dir[5208]
)ct 02 11:46:46 salvadorcentos mariadb-prepare-db-dir[5208]
)ct 02 11:46:46 salvadorcentos mariadb-prepare-db-dir[5208]
)ct 02 11:46:46 salvadorcentos mariadb-prepare-db-dir[5208]
)ct 02 11:46:46 salvadorcentos mariadb-prepare-db-dir[5208]
)ct 02 11:46:46 salvadorcentos mariadb-prepare-db-dir[5208]
)ct 02 11:46:46 salvadorcentos mariadb-prepare-db-dir[5208]
)ct 02 11:46:46 salvadorcentos mysqld_safe[5297]: 231002 11:46:46 mysqld_safe Loggi....
)ct 02 11:46:46 salvadorcentos mysqld_safe[5297]: 231002 11:46:46 mysqld_safe Start...l
)ct 02 11:46:48 salvadorcentos systemd[1]: Started MariaDB database server.
```

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: Saturday, 14 October 2023, 8:54:54 pm
Computer Name: DESKTOP-BVLHQ7O
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2-iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 11687MB used, 3850MB available
DirectX Version: DirectX 12

☑ Check for WHQL digital signatures

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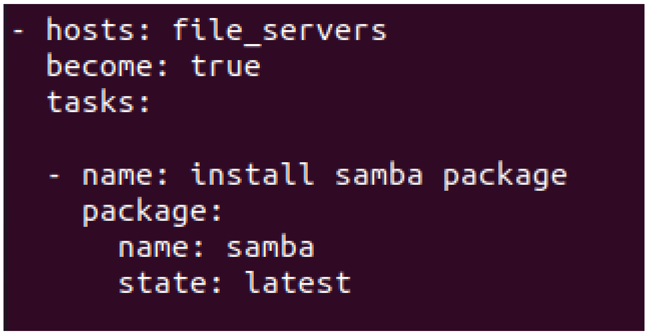
Help
Next Page
Save All Information...
Exit

It shows that the mariadb database server is active and running in that server where i indicate that location of that machine.

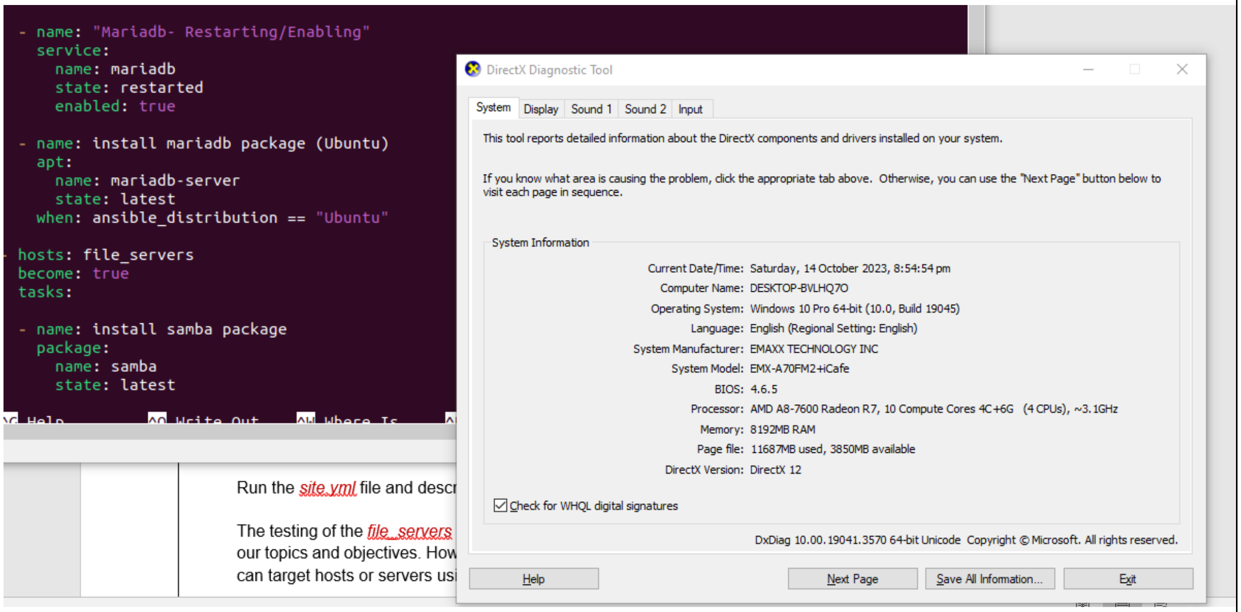
6. Edit the *site.yml* again. This time we will append the code to configure installation on the *file_servers* group. We can add the following on our file.



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

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

Make sure to save the file and exit.



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

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

- hosts: file_servers
  become: true
  tasks:

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

^G Help       ^O Write Out    ^W Where Is
```

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 below to visit each page in sequence.

System Information

Current Date/Time: Saturday, 14 October 2023, 8:54:54 pm
Computer Name: DESKTOP-BVLHQ7O
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2-HCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 11687MB used, 3850MB available
DirectX Version: DirectX 12

☑ Check for WHQL digital signatures

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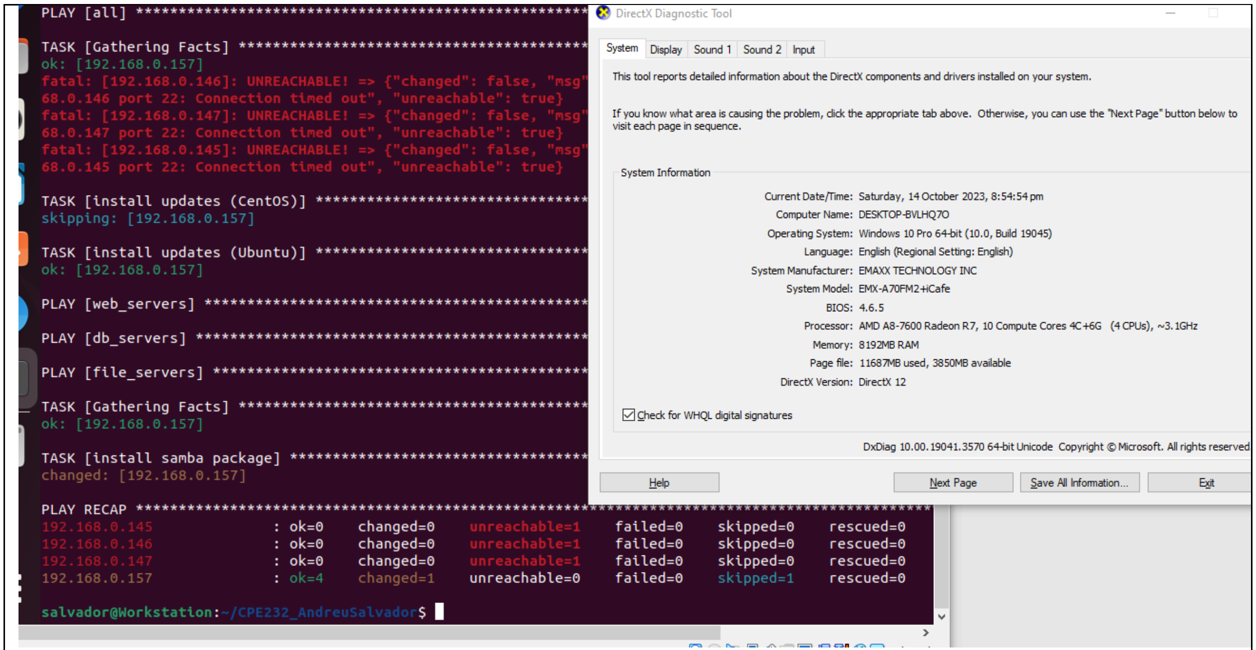
Run the *site.yml* file and descr

The testing of the *file_servers*
our topics and objectives. How
can target hosts or servers usi

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



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

TASK [Gathering Facts] ****************************************
ok: [192.168.0.157]
fatal: [192.168.0.146]: UNREACHABLE! => {"changed": false, "msg"
68.0.146 port 22: Connection timed out", "unreachable": true}
fatal: [192.168.0.147]: UNREACHABLE! => {"changed": false, "msg"
68.0.147 port 22: Connection timed out", "unreachable": true}
fatal: [192.168.0.145]: UNREACHABLE! => {"changed": false, "msg"
68.0.145 port 22: Connection timed out", "unreachable": true}

TASK [install updates (CentOS)] *******************************
skipping: [192.168.0.157]

TASK [install updates (Ubuntu)] *******************************
ok: [192.168.0.157]

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

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

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

TASK [Gathering Facts] ****************************************
ok: [192.168.0.157]

TASK [install samba package] **********************************
changed: [192.168.0.157]

PLAY RECAP ****************************************************************************************
192.168.0.145              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0
192.168.0.146              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0
192.168.0.147              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0
192.168.0.157              : ok=4    changed=1    unreachable=0    failed=0    skipped=1    rescued=0

salvador@Workstation:~/CPE232_AndreuSalvador$ 
```

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 below to visit each page in sequence.

System Information

Current Date/Time:	Saturday, 14 October 2023, 8:54:54 pm
Computer Name:	DESKTOP-BVLHQ7O
Operating System:	Windows 10 Pro 64-bit (10.0, Build 19045)
Language:	English (Regional Setting: English)
System Manufacturer:	EMAXX TECHNOLOGY INC
System Model:	EMX-A70FM2+iCafe
BIOS:	4.6.5
Processor:	AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory:	8192MB RAM
Page file:	11687MB used, 3850MB available
DirectX Version:	DirectX 12

☑ Check for WHQL digital signatures

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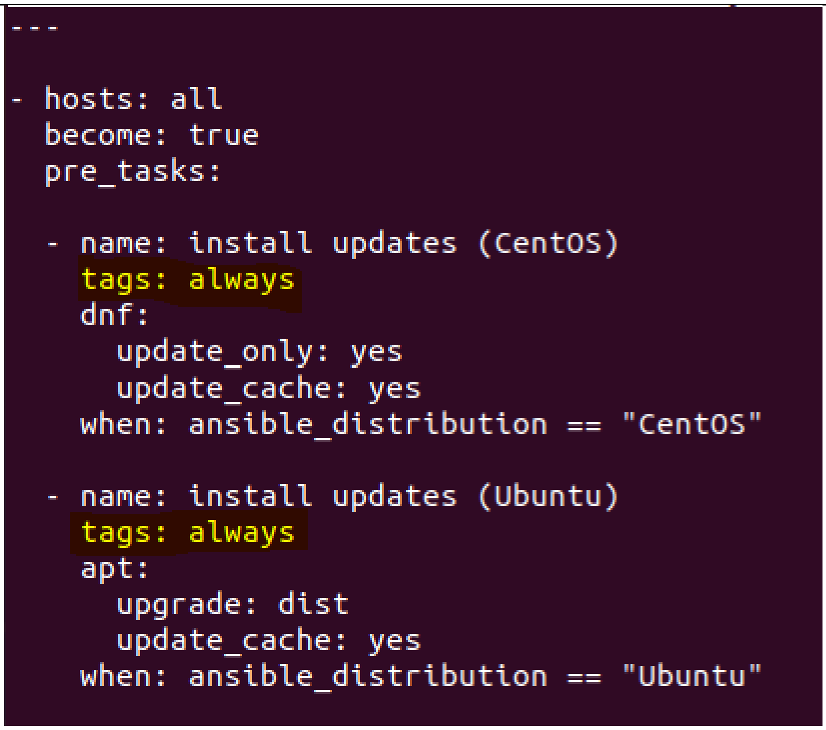
It shows a changed happened in the server, installing the samba package in the server remotely was successful. The ok indicates that the previous tasks was already installed in the server.

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.

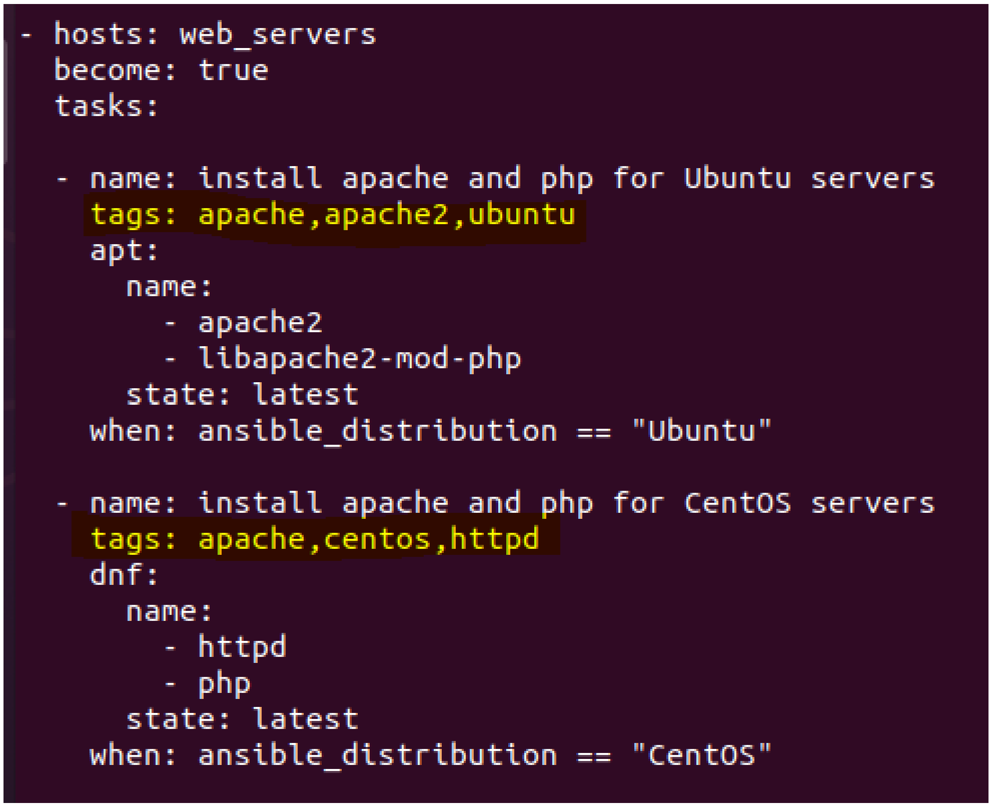
Task 2: Using Tags in running playbooks

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.

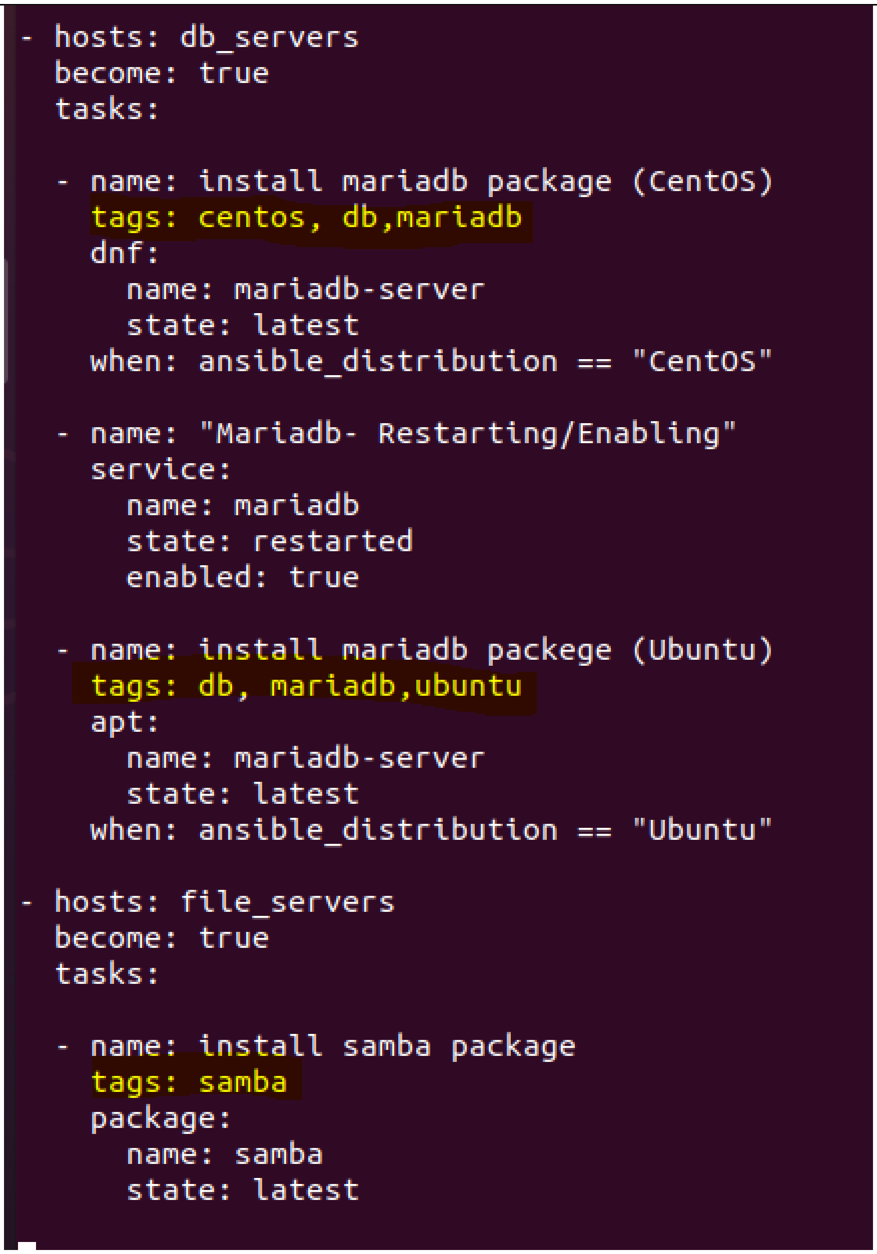
1. Edit the *site.yml* file. Add tags to the playbook. After the name, we can place the tags: *name_of_tag*. This is an arbitrary command, which means you can use any name for a tag.



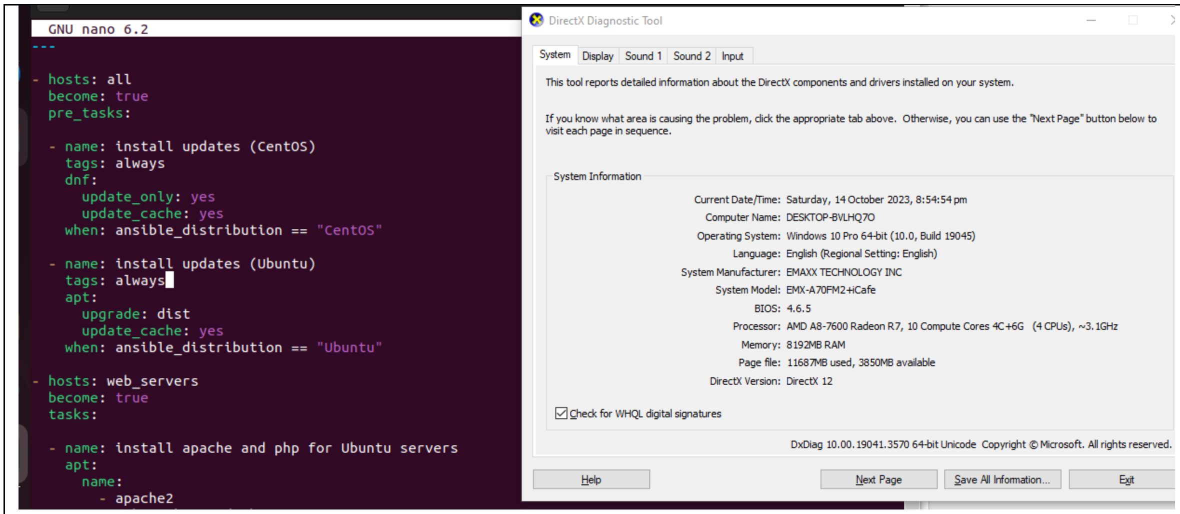
```
---

- 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
```



```
GNU nano 6.2
---

- 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
    apt:
      name:
        - apache2
```

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 below to visit each page in sequence.

System Information

```
Current Date/Time: Saturday, 14 October 2023, 8:54:54 pm
    Computer Name: DESKTOP-BVLHQ7O
 Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
         Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
     System Model: EMX-A70FM2-iCafe
             BIOS: 4.6.5
        Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G   (4 CPUs), ~3.1GHz
           Memory: 8192MB RAM
        Page file: 11687MB used, 3850MB available
  DirectX Version: DirectX 12
```

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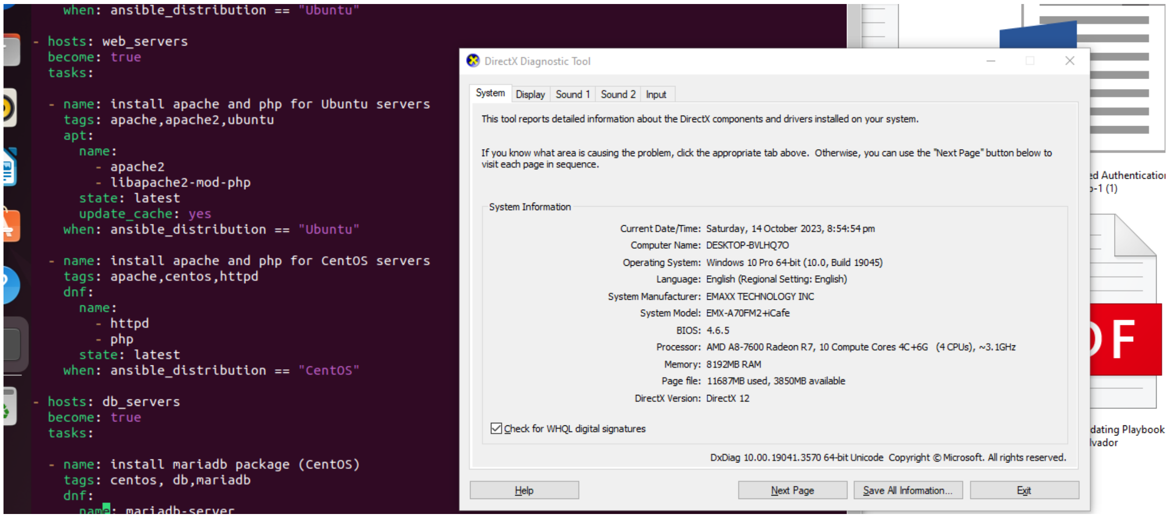

```
    when: ansible_distribution == "Ubuntu"

- 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
      update_cache: yes
    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
```

DirectX Diagnostic Tool

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

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System Information

Current Date/Time: Saturday, 14 October 2023, 8:54:54 pm
Computer Name: DESKTOP-BVLHQ7O
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2-iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 11687MB used, 3850MB available
DirectX Version: DirectX 12

☑ Check for WHQL digital signatures

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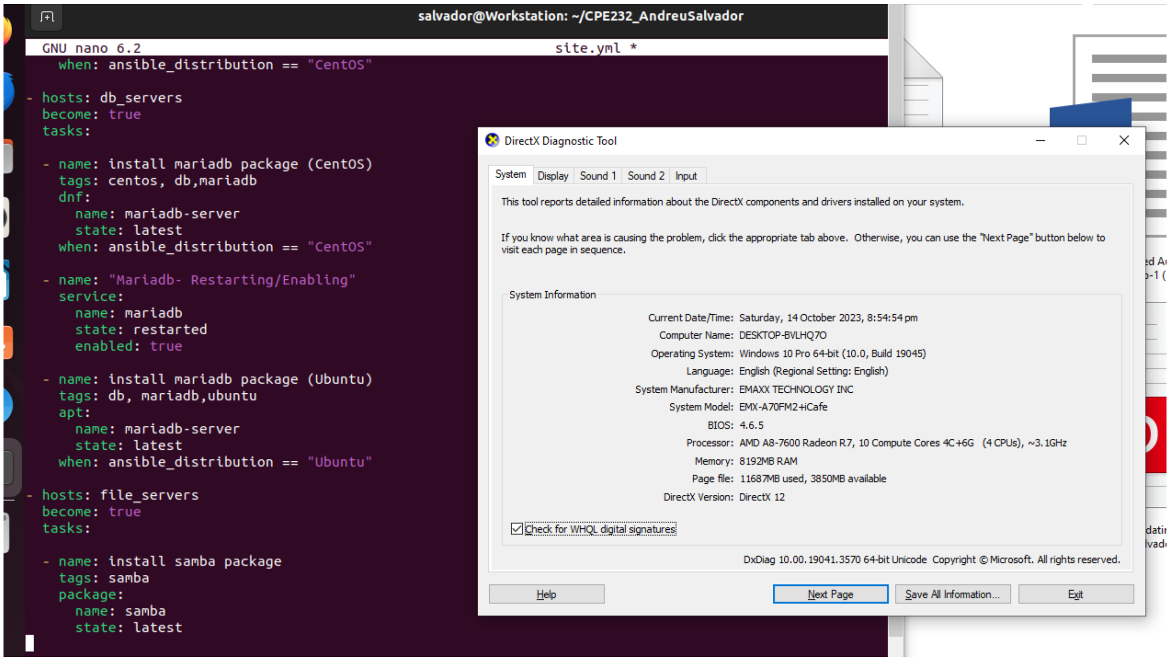

salvador@Workstation: ~/CPE232_AndreuSalvador

```
GNU nano 6.2                                      site.yml *
    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 package (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
```

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 below to visit each page in sequence.

System Information

Current Date/Time: Saturday, 14 October 2023, 8:54:54 pm
Computer Name: DESKTOP-BVLHQ7O
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2-iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 11687MB used, 3850MB available
DirectX Version: DirectX 12

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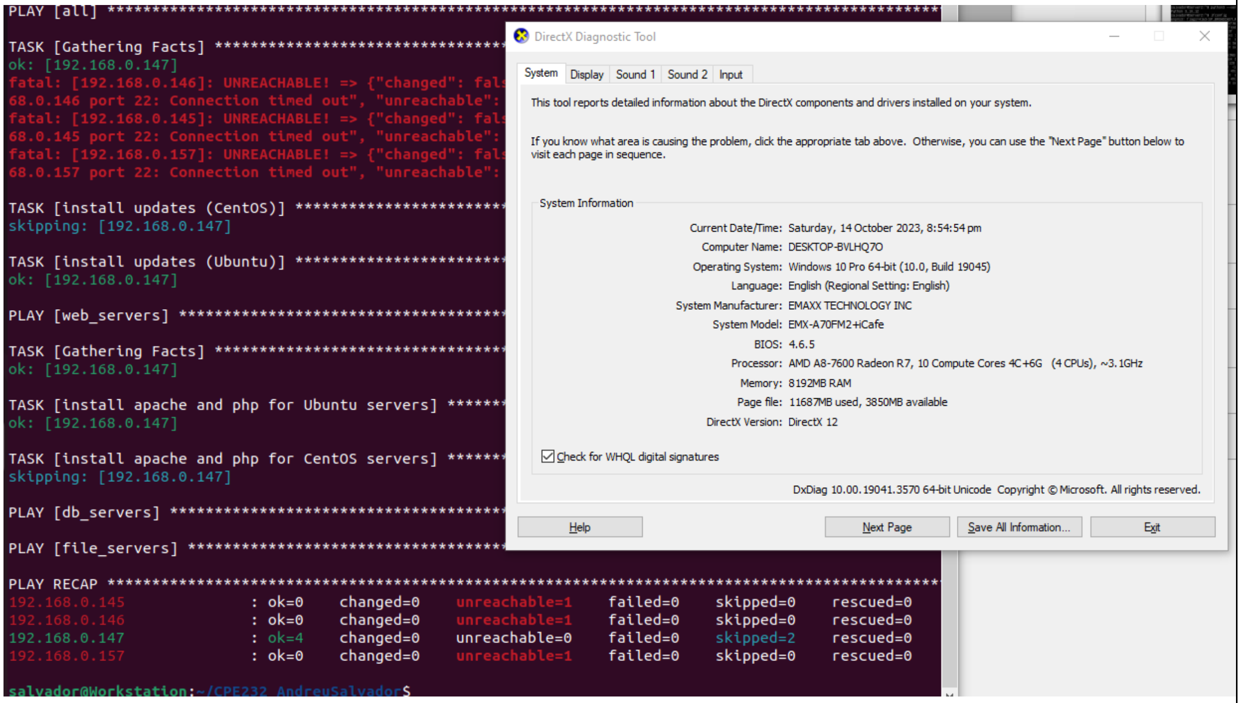
Make sure to save the file and exit.

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

Server2



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

TASK [Gathering Facts] *********************************
ok: [192.168.0.147]
fatal: [192.168.0.146]: UNREACHABLE! => {"changed": fals
68.0.146 port 22: Connection timed out", "unreachable":
fatal: [192.168.0.145]: UNREACHABLE! => {"changed": fals
68.0.145 port 22: Connection timed out", "unreachable":
fatal: [192.168.0.157]: UNREACHABLE! => {"changed": fals
68.0.157 port 22: Connection timed out", "unreachable":

TASK [install updates (CentOS)] ************************
skipping: [192.168.0.147]

TASK [install updates (Ubuntu)] ************************
ok: [192.168.0.147]

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

TASK [Gathering Facts] *********************************
ok: [192.168.0.147]

TASK [install apache and php for Ubuntu servers] *******
ok: [192.168.0.147]

TASK [install apache and php for CentOS servers] *******
skipping: [192.168.0.147]

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

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

PLAY RECAP *****************************************************************************************
192.168.0.145              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0
192.168.0.146              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0
192.168.0.147              : ok=4    changed=0    unreachable=0    failed=0    skipped=2    rescued=0
192.168.0.157              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0

salvador@Workstation:~/CPE232_AndreuSalvador$
```

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 below to visit each page in sequence.

System Information

Current Date/Time: Saturday, 14 October 2023, 8:54:54 pm
Computer Name: DESKTOP-BVLHQ7O
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2+iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 11687MB used, 3850MB available
DirectX Version: DirectX 12

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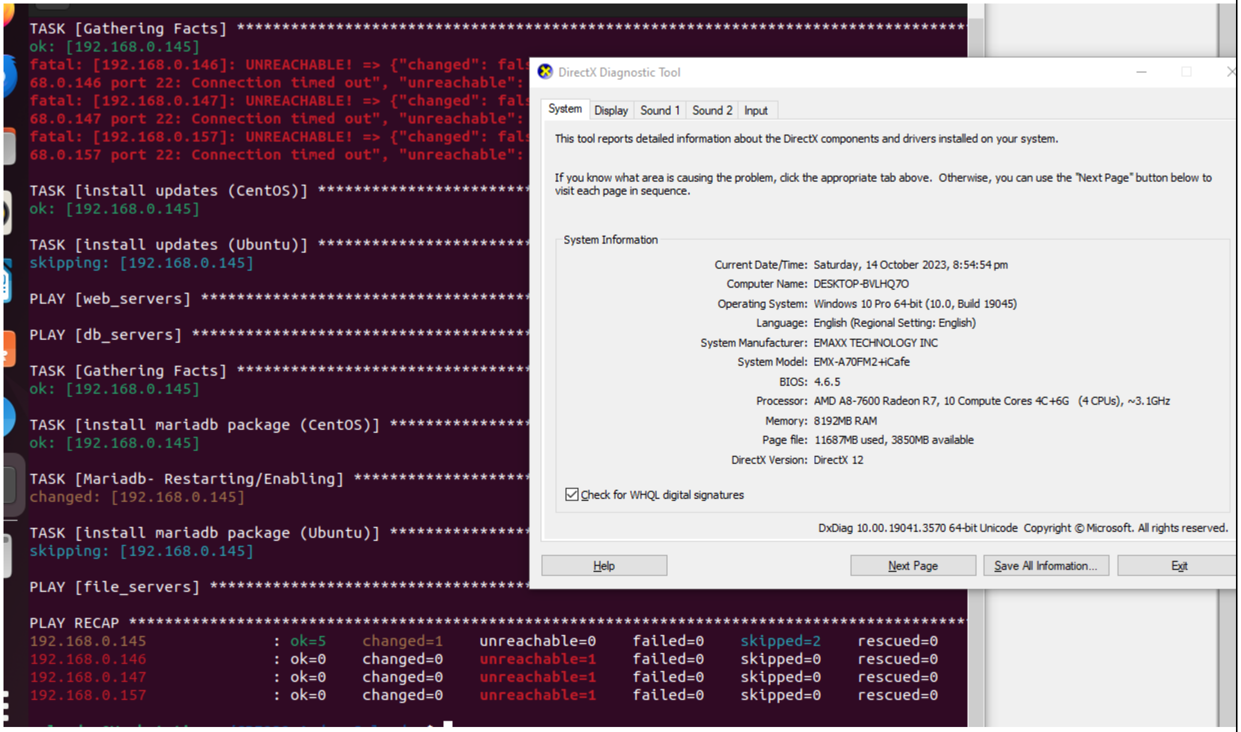
CentsOS



```
TASK [Gathering Facts] *****************************************************************************
ok: [192.168.0.145]
fatal: [192.168.0.146]: UNREACHABLE! => {"changed": fals
68.0.146 port 22: Connection timed out", "unreachable":
fatal: [192.168.0.147]: UNREACHABLE! => {"changed": fals
68.0.147 port 22: Connection timed out", "unreachable":
fatal: [192.168.0.157]: UNREACHABLE! => {"changed": fals
68.0.157 port 22: Connection timed out", "unreachable":

TASK [install updates (CentOS)] ************************
ok: [192.168.0.145]

TASK [install updates (Ubuntu)] ************************
skipping: [192.168.0.145]

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

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

TASK [Gathering Facts] *********************************
ok: [192.168.0.145]

TASK [install mariadb package (CentOS)] ****************
ok: [192.168.0.145]

TASK [Mariadb- Restarting/Enabling] ********************
changed: [192.168.0.145]

TASK [install mariadb package (Ubuntu)] ****************
skipping: [192.168.0.145]

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

PLAY RECAP *****************************************************************************************
192.168.0.145              : ok=5    changed=1    unreachable=0    failed=0    skipped=2    rescued=0
192.168.0.146              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0
192.168.0.147              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0
192.168.0.157              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0
```

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 below to visit each page in sequence.

System Information

Current Date/Time: Saturday, 14 October 2023, 8:54:54 pm
Computer Name: DESKTOP-BVLHQ7O
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2+iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 11687MB used, 3850MB available
DirectX Version: DirectX 12

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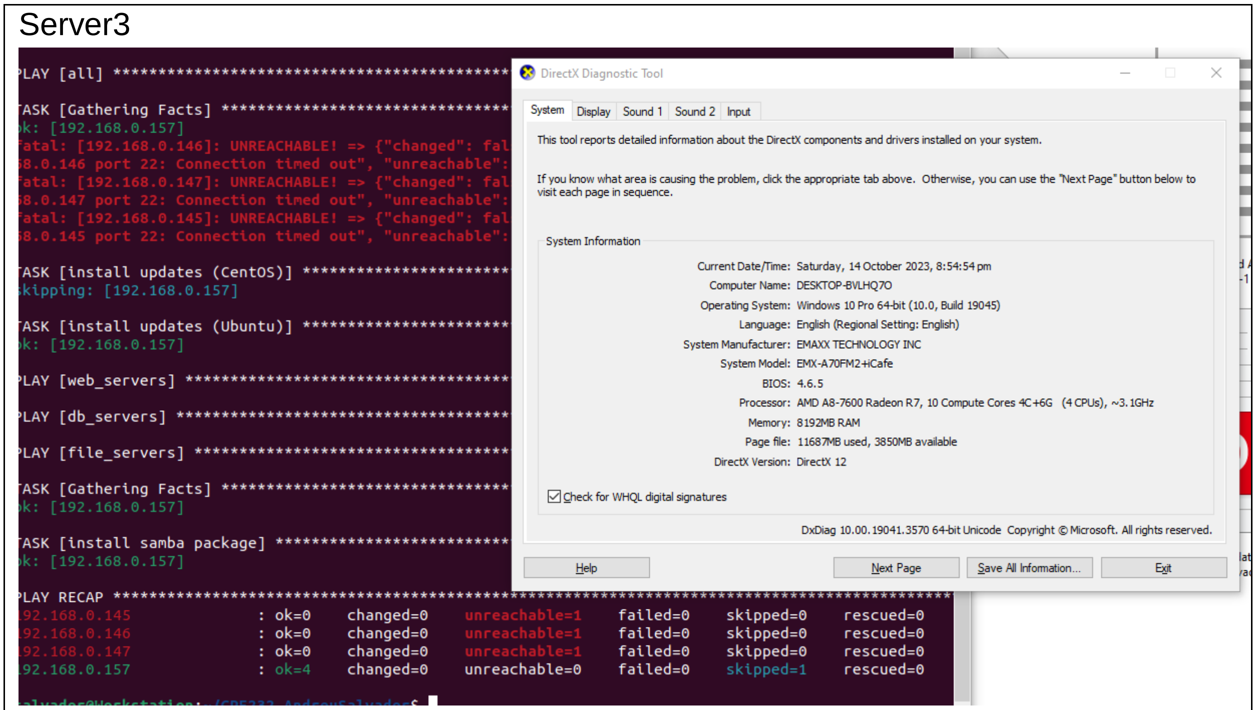
Server3



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

TASK [Gathering Facts] ********************************
ok: [192.168.0.157]
fatal: [192.168.0.146]: UNREACHABLE! => {"changed": fal
68.0.146 port 22: Connection timed out", "unreachable":
fatal: [192.168.0.147]: UNREACHABLE! => {"changed": fal
68.0.147 port 22: Connection timed out", "unreachable":
fatal: [192.168.0.145]: UNREACHABLE! => {"changed": fal
68.0.145 port 22: Connection timed out", "unreachable":

TASK [install updates (CentOS)] ***********************
skipping: [192.168.0.157]

TASK [install updates (Ubuntu)] ***********************
ok: [192.168.0.157]

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

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

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

TASK [Gathering Facts] ********************************
ok: [192.168.0.157]

TASK [install samba package] **************************
ok: [192.168.0.157]

PLAY RECAP ****************************************************************************************
192.168.0.145              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0
192.168.0.146              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0
192.168.0.147              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0
192.168.0.157              : ok=4    changed=0    unreachable=0    failed=0    skipped=1    rescued=0
```

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, 14 October 2023, 8:54:54 pm
Computer Name: DESKTOP-BVLHQ7O
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2+iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 11687MB used, 3850MB available
DirectX Version: DirectX 12

☑ Check for WHQL digital signatures

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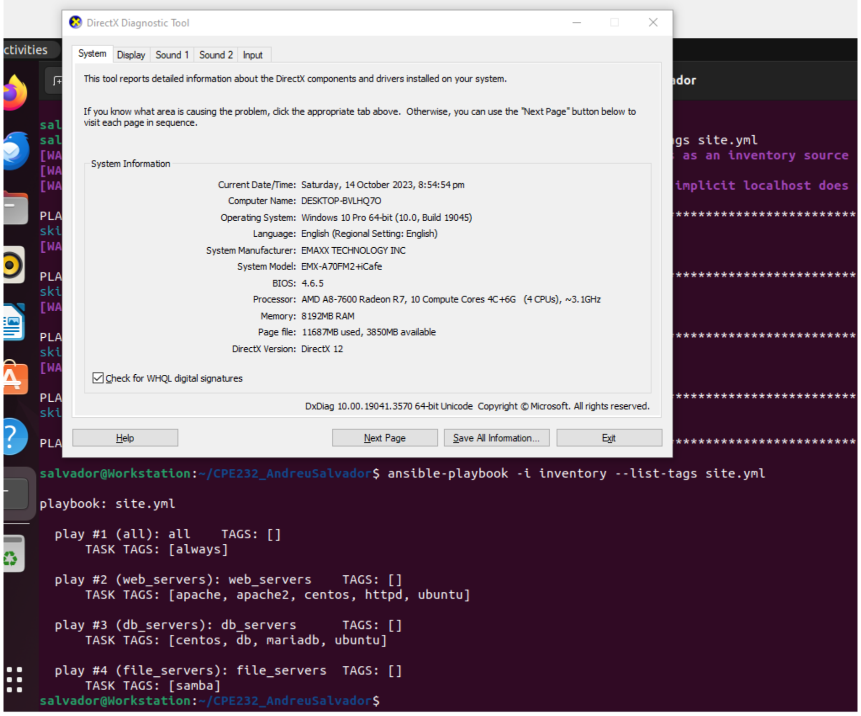
Indicates that everything was ok, changes occurred in the CentOS machine. Skips are for those that isn't applicable with the type of OS it has.

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

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



```
sal
sal                                                   gs site.yml
[WA                                                   as an inventory source
[WA
[WA                                                   implicit localhost does

PLA                                                   ***********************
ski
[WA

PLA                                                   ***********************
ski
[WA

PLA                                                   ***********************
ski
[WA

PLA                                                   ***********************
ski

PLA                                                   ***********************
salvador@Workstation:~/CPE232_AndreuSalvador$ ansible-playbook -i inventory --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]
salvador@Workstation:~/CPE232_AndreuSalvador$
```

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 below to visit each page in sequence.

System Information

Current Date/Time: Saturday, 14 October 2023, 8:54:54 pm
Computer Name: DESKTOP-BVLHQ7O
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Language: English (Regional Setting: English)
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System Model: EMX-A70FM2+iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 11687MB used, 3850MB available
DirectX Version: DirectX 12

☑ Check for WHQL digital signatures

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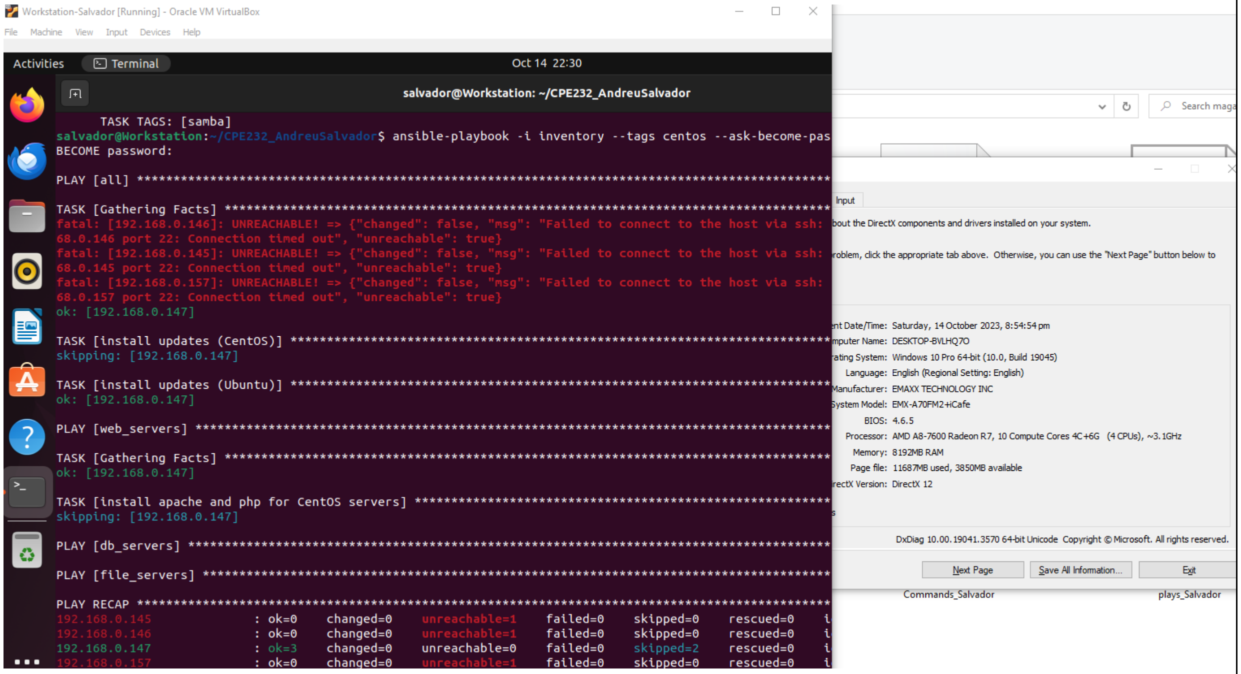
Shows the tags inserted in each tasks

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

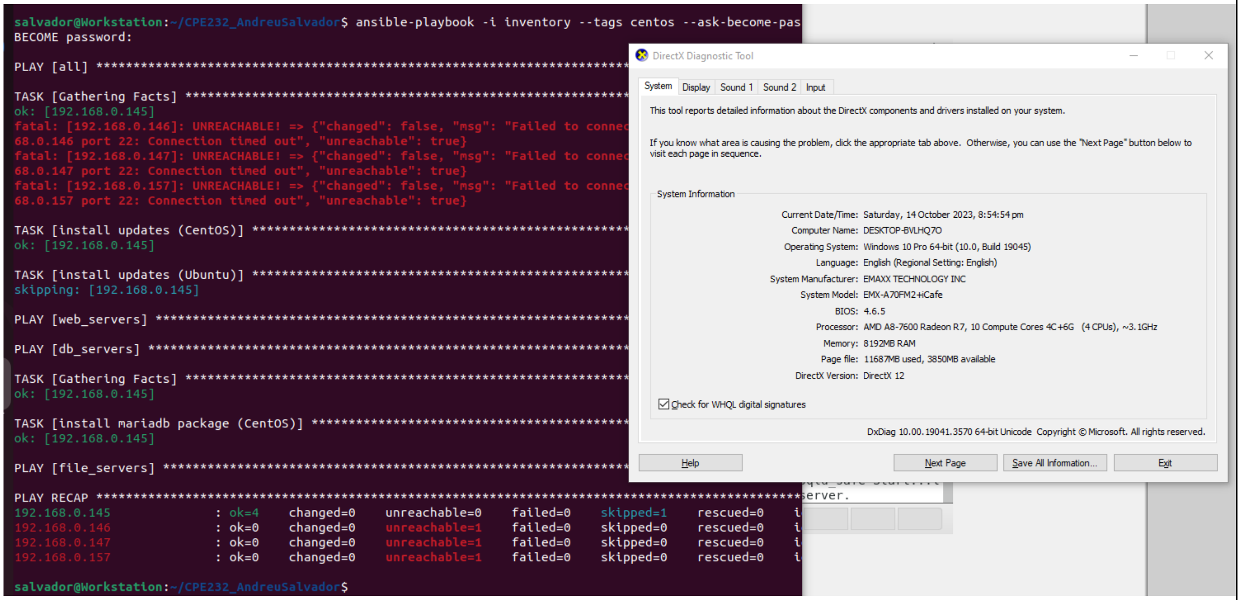
server3



Workstation-Salvador [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities
Terminal
Oct 14 22:30
salvador@Workstation: ~/CPE232_AndreuSalvador

```
    TASK TAGS: [samba]
salvador@Workstation:~/CPE232_AndreuSalvador$ ansible-playbook -i inventory --tags centos --ask-become-pas
BECOME password:

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

TASK [Gathering Facts] ************************************************************************
fatal: [192.168.0.146]: UNREACHABLE! => {"changed": false, "msg": "Failed to connect to the host via ssh:
68.0.146 port 22: Connection timed out", "unreachable": true}
fatal: [192.168.0.145]: UNREACHABLE! => {"changed": false, "msg": "Failed to connect to the host via ssh:
68.0.145 port 22: Connection timed out", "unreachable": true}
fatal: [192.168.0.157]: UNREACHABLE! => {"changed": false, "msg": "Failed to connect to the host via ssh:
68.0.157 port 22: Connection timed out", "unreachable": true}
ok: [192.168.0.147]

TASK [install updates (CentOS)] ***************************************************************
skipping: [192.168.0.147]

TASK [install updates (Ubuntu)] ***************************************************************
ok: [192.168.0.147]

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

TASK [Gathering Facts] ************************************************************************
ok: [192.168.0.147]

TASK [install apache and php for CentOS servers] **********************************************
skipping: [192.168.0.147]

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

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

PLAY RECAP ************************************************************************************
192.168.0.145              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    i
192.168.0.146              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    i
192.168.0.147              : ok=3    changed=0    unreachable=0    failed=0    skipped=2    rescued=0    i
192.168.0.157              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    i
```

CentOS



```
salvador@Workstation:~/CPE232_AndreuSalvador$ ansible-playbook -i inventory --tags centos --ask-become-pas
BECOME password:

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

TASK [Gathering Facts] ****************************************************************
ok: [192.168.0.145]
fatal: [192.168.0.146]: UNREACHABLE! => {"changed": false, "msg": "Failed to connec
68.0.146 port 22: Connection timed out", "unreachable": true}
fatal: [192.168.0.147]: UNREACHABLE! => {"changed": false, "msg": "Failed to connec
68.0.147 port 22: Connection timed out", "unreachable": true}
fatal: [192.168.0.157]: UNREACHABLE! => {"changed": false, "msg": "Failed to connec
68.0.157 port 22: Connection timed out", "unreachable": true}

TASK [install updates (CentOS)] *******************************************************
ok: [192.168.0.145]

TASK [install updates (Ubuntu)] *******************************************************
skipping: [192.168.0.145]

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

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

TASK [Gathering Facts] ****************************************************************
ok: [192.168.0.145]

TASK [install mariadb package (CentOS)] ***********************************************
ok: [192.168.0.145]

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

PLAY RECAP ****************************************************************************************
192.168.0.145              : ok=4    changed=0    unreachable=0    failed=0    skipped=1    rescued=0    i
192.168.0.146              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    i
192.168.0.147              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    i
192.168.0.157              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    i

salvador@Workstation:~/CPE232_AndreuSalvador$
```

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, 14 October 2023, 8:54:54 pm
Computer Name: DESKTOP-BVLHQ7O
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2+iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 11687MB used, 3850MB available
DirectX Version: DirectX 12

☑ Check for WHQL digital signatures

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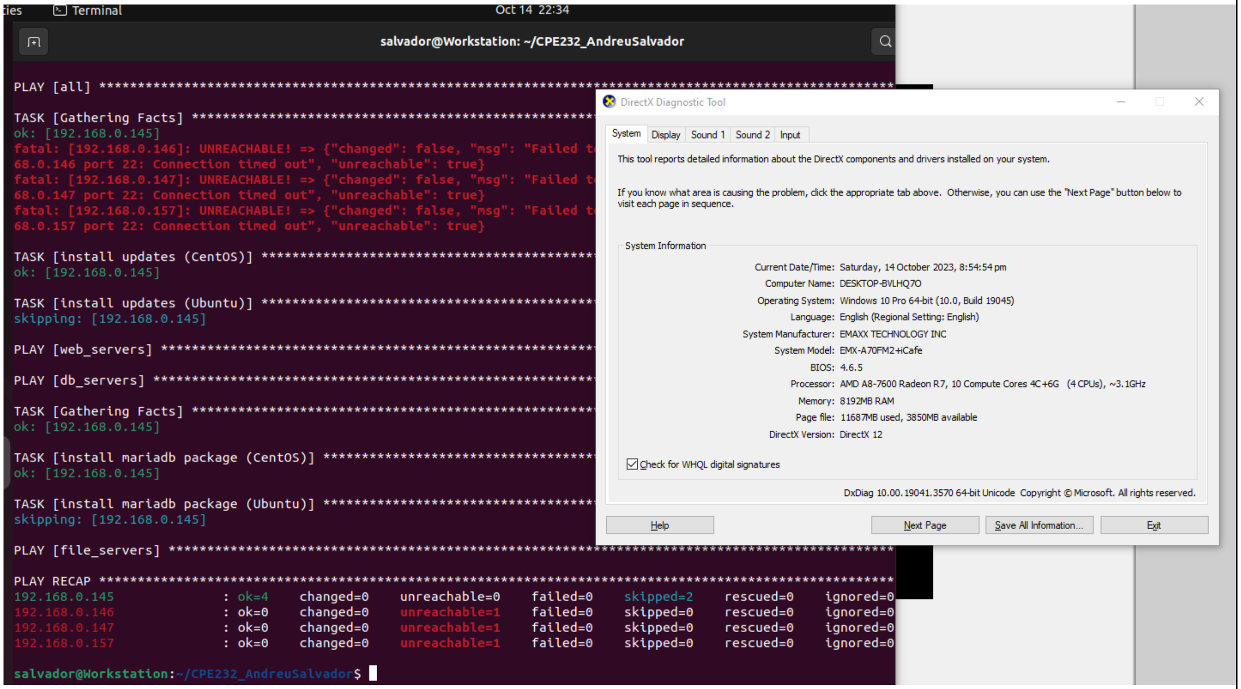
Runs the playbook but only play the tasks that has centos on it

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

CentOS



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

TASK [Gathering Facts] *****************************************************
ok: [192.168.0.145]
fatal: [192.168.0.146]: UNREACHABLE! => {"changed": false, "msg": "Failed t
68.0.146 port 22: Connection timed out", "unreachable": true}
fatal: [192.168.0.147]: UNREACHABLE! => {"changed": false, "msg": "Failed t
68.0.147 port 22: Connection timed out", "unreachable": true}
fatal: [192.168.0.157]: UNREACHABLE! => {"changed": false, "msg": "Failed t
68.0.157 port 22: Connection timed out", "unreachable": true}

TASK [install updates (CentOS)] ********************************************
ok: [192.168.0.145]

TASK [install updates (Ubuntu)] ********************************************
skipping: [192.168.0.145]

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

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

TASK [Gathering Facts] *****************************************************
ok: [192.168.0.145]

TASK [install mariadb package (CentOS)] ************************************
ok: [192.168.0.145]

TASK [install mariadb package (Ubuntu)] ************************************
skipping: [192.168.0.145]

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

PLAY RECAP ******************************************************************************
192.168.0.145              : ok=4    changed=0    unreachable=0    failed=0    skipped=2    rescued=0    ignored=0
192.168.0.146              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0
192.168.0.147              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0
192.168.0.157              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0

salvador@Workstation:~/CPE232_AndreuSalvador$ 
```

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, 14 October 2023, 8:54:54 pm
Computer Name: DESKTOP-BVLHQ7O
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2+iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 11687MB used, 3850MB available
DirectX Version: DirectX 12

☑ Check for WHQL digital signatures

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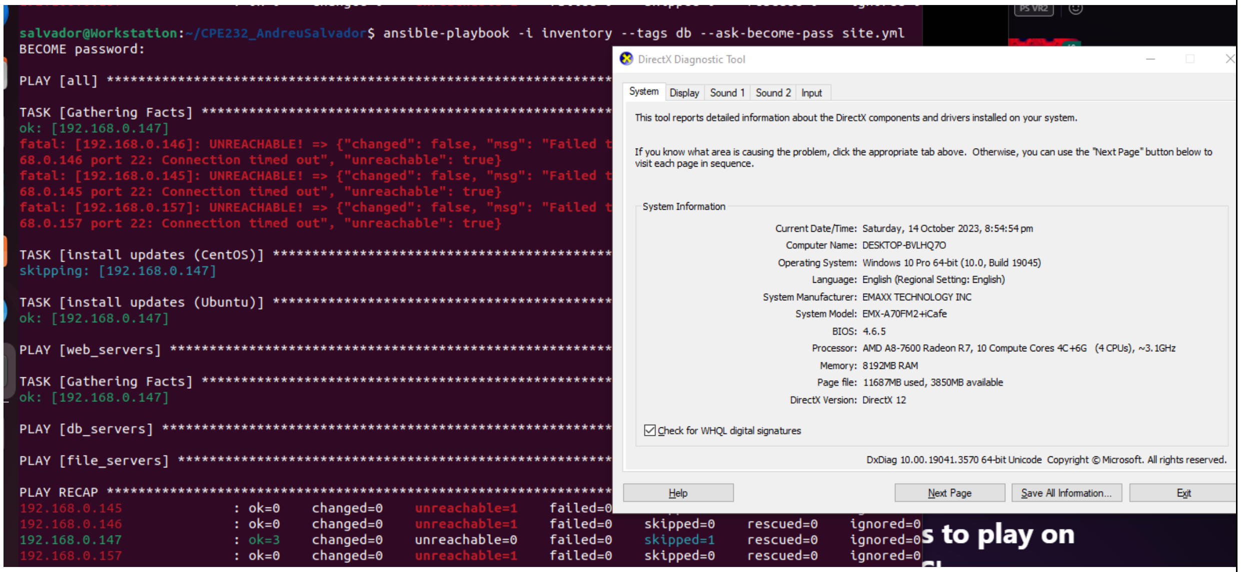
Server2



```
salvador@Workstation:~/CPE232_AndreuSalvador$ ansible-playbook -i inventory --tags db --ask-become-pass site.yml
BECOME password:

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

TASK [Gathering Facts] *****************************************************
ok: [192.168.0.147]
fatal: [192.168.0.146]: UNREACHABLE! => {"changed": false, "msg": "Failed t
68.0.146 port 22: Connection timed out", "unreachable": true}
fatal: [192.168.0.145]: UNREACHABLE! => {"changed": false, "msg": "Failed t
68.0.145 port 22: Connection timed out", "unreachable": true}
fatal: [192.168.0.157]: UNREACHABLE! => {"changed": false, "msg": "Failed t
68.0.157 port 22: Connection timed out", "unreachable": true}

TASK [install updates (CentOS)] ********************************************
skipping: [192.168.0.147]

TASK [install updates (Ubuntu)] ********************************************
ok: [192.168.0.147]

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

TASK [Gathering Facts] *****************************************************
ok: [192.168.0.147]

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

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

PLAY RECAP *****************************************************************
192.168.0.145              : ok=0    changed=0    unreachable=1    failed=0
192.168.0.146              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0
192.168.0.147              : ok=3    changed=0    unreachable=0    failed=0    skipped=1    rescued=0    ignored=0
192.168.0.157              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0
```

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 below to visit each page in sequence.

System Information

Current Date/Time: Saturday, 14 October 2023, 8:54:54 pm
Computer Name: DESKTOP-BVLHQ7O
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2+iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 11687MB used, 3850MB available
DirectX Version: DirectX 12

☑ Check for WHQL digital signatures

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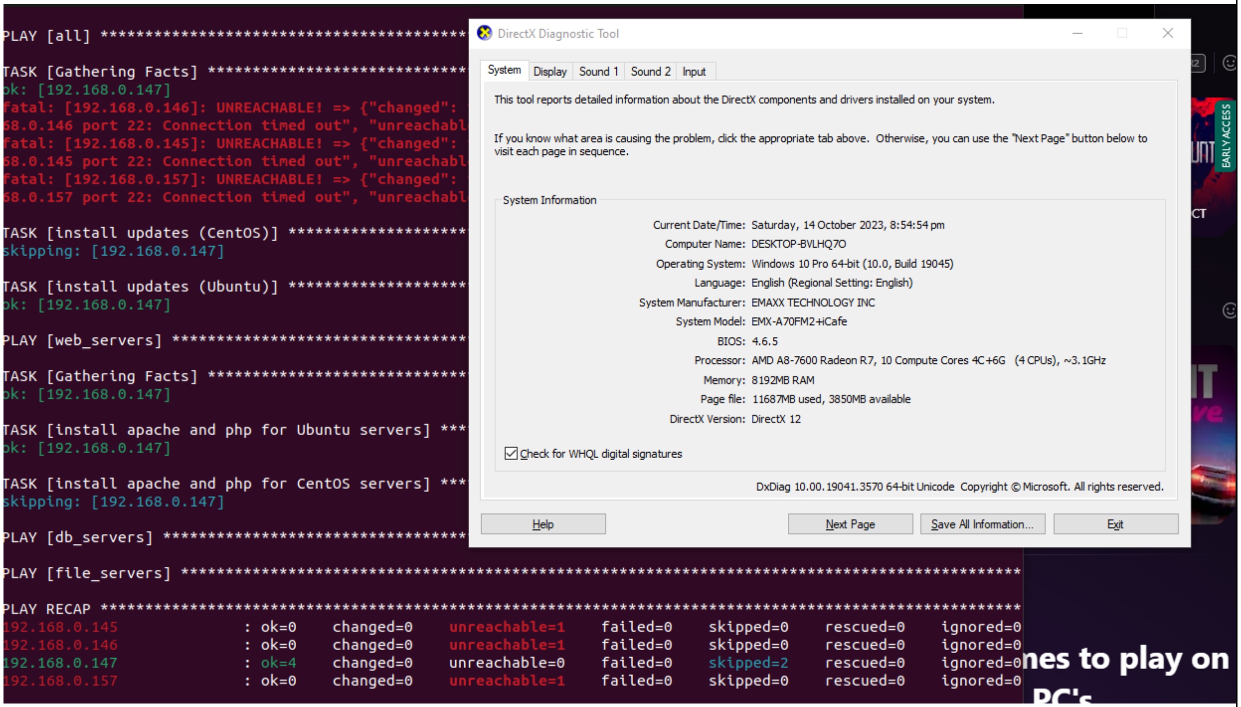
Runs the playbook but only play the tasks that has db on it

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



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

TASK [Gathering Facts] ******************************
ok: [192.168.0.147]
fatal: [192.168.0.146]: UNREACHABLE! => {"changed":
68.0.146 port 22: Connection timed out", "unreachabl
fatal: [192.168.0.145]: UNREACHABLE! => {"changed":
68.0.145 port 22: Connection timed out", "unreachabl
fatal: [192.168.0.157]: UNREACHABLE! => {"changed":
68.0.157 port 22: Connection timed out", "unreachabl

TASK [install updates (CentOS)] ********************
skipping: [192.168.0.147]

TASK [install updates (Ubuntu)] ********************
ok: [192.168.0.147]

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

TASK [Gathering Facts] *****************************
ok: [192.168.0.147]

TASK [install apache and php for Ubuntu servers] ***
ok: [192.168.0.147]

TASK [install apache and php for CentOS servers] ***
skipping: [192.168.0.147]

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

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

PLAY RECAP *********************************************************************************************
192.168.0.145              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0
192.168.0.146              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0
192.168.0.147              : ok=4    changed=0    unreachable=0    failed=0    skipped=2    rescued=0    ignored=0
192.168.0.157              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0
```

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: Saturday, 14 October 2023, 8:54:54 pm
Computer Name: DESKTOP-BVLHQ7O
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2+iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 11687MB used, 3850MB available
DirectX Version: DirectX 12

☑ Check for WHQL digital signatures

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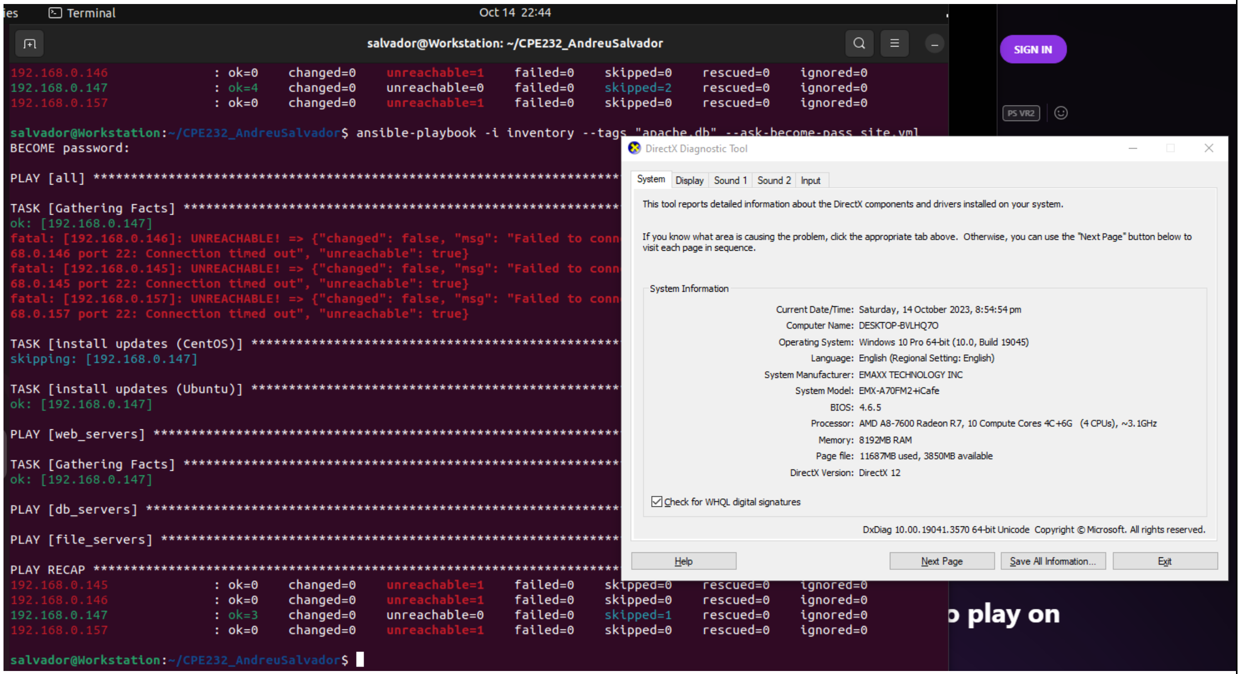
Runs the playbook but only play the tasks that has apache on it

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



```
192.168.0.146              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0
192.168.0.147              : ok=4    changed=0    unreachable=0    failed=0    skipped=2    rescued=0    ignored=0
192.168.0.157              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0

salvador@Workstation:~/CPE232_AndreuSalvador$ ansible-playbook -i inventory --tags "apache,db" --ask-become-pass site.yml
BECOME password:

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

TASK [Gathering Facts] ******************************************************************
ok: [192.168.0.147]
fatal: [192.168.0.146]: UNREACHABLE! => {"changed": false, "msg": "Failed to conn
68.0.146 port 22: Connection timed out", "unreachable": true}
fatal: [192.168.0.145]: UNREACHABLE! => {"changed": false, "msg": "Failed to conn
68.0.145 port 22: Connection timed out", "unreachable": true}
fatal: [192.168.0.157]: UNREACHABLE! => {"changed": false, "msg": "Failed to conn
68.0.157 port 22: Connection timed out", "unreachable": true}

TASK [install updates (CentOS)] *********************************************************
skipping: [192.168.0.147]

TASK [install updates (Ubuntu)] *********************************************************
ok: [192.168.0.147]

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

TASK [Gathering Facts] ******************************************************************
ok: [192.168.0.147]

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

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

PLAY RECAP ******************************************************************************
192.168.0.145              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0
192.168.0.146              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0
192.168.0.147              : ok=3    changed=0    unreachable=0    failed=0    skipped=1    rescued=0    ignored=0
192.168.0.157              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0

salvador@Workstation:~/CPE232_AndreuSalvador$ 
```

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: Saturday, 14 October 2023, 8:54:54 pm
Computer Name: DESKTOP-BVLHQ7O
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Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2+iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 11687MB used, 3850MB available
DirectX Version: DirectX 12

☑ Check for WHQL digital signatures

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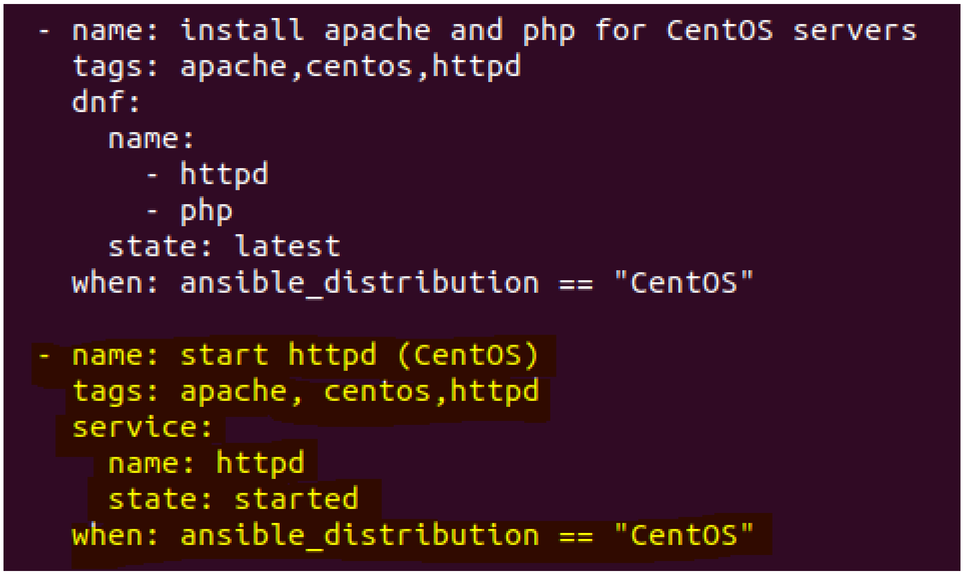
Runs the playbook but only play the tasks that has apache.db on it

Task 3: Managing Services

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

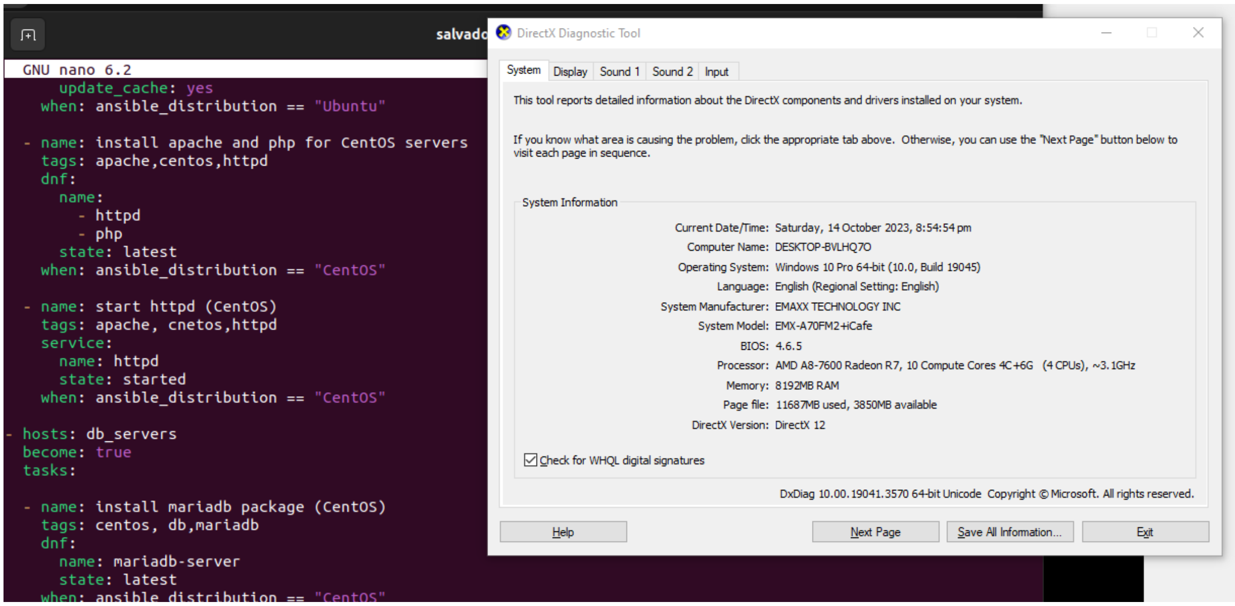


```
- name: install apache and php for CentOS servers
  tags: apache,centos,httpd
  dnf:
    name:
      - httpd
      - php
    state: latest
  when: ansible_distribution == "CentOS"

- 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.



```
GNU nano 6.2
   update_cache: yes
  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"

 - name: start httpd (CentOS)
  tags: apache, cnetos,httpd
  service:
   name: httpd
   state: started
  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"
```

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, 14 October 2023, 8:54:54 pm
Computer Name: DESKTOP-BVLHQ7O
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2+iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 11687MB used, 3850MB available
DirectX Version: DirectX 12

☑ Check for WHQL digital signatures

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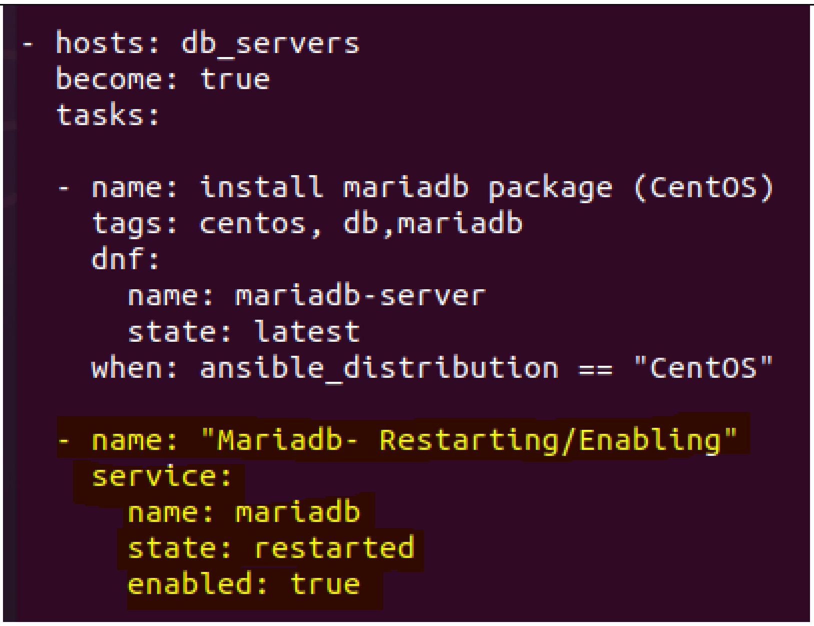
You would also notice from our previous activity that we already created a module that runs a service.

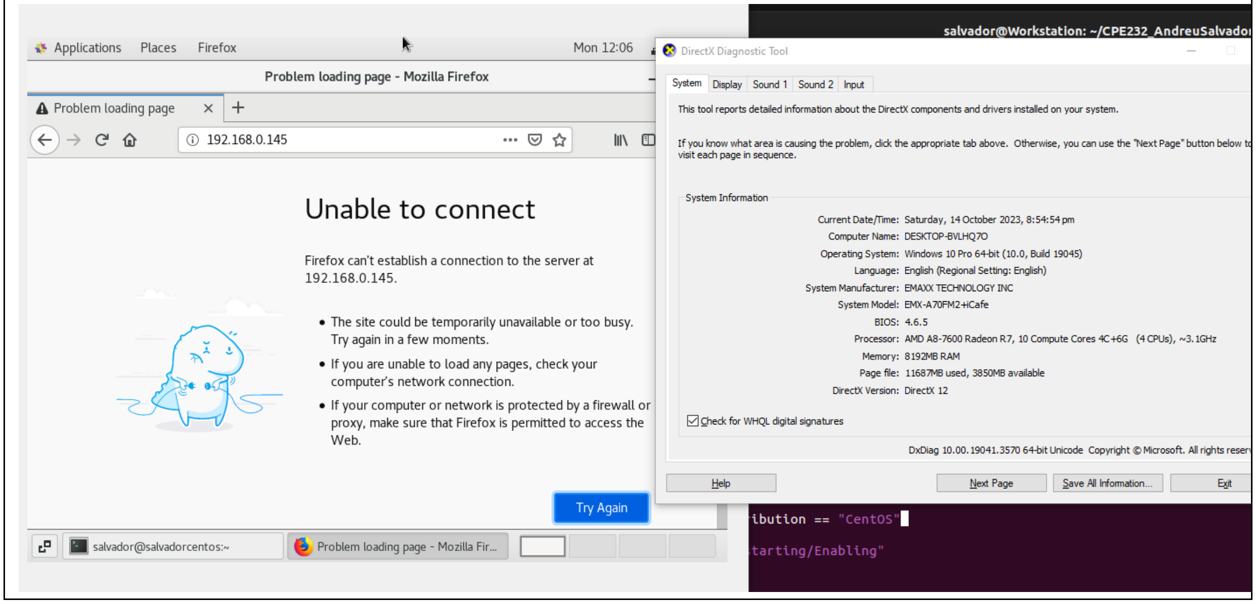


```
- hosts: db_servers
  become: true
  tasks:

  - 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.



Unable to connect

Firefox can't establish a connection to the server at 192.168.0.145.

- The site could be temporarily unavailable or too busy. Try again in a few moments.
- If you are unable to load any pages, check your computer's network connection.
- If your computer or network is protected by a firewall or proxy, make sure that Firefox is permitted to access the Web.

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

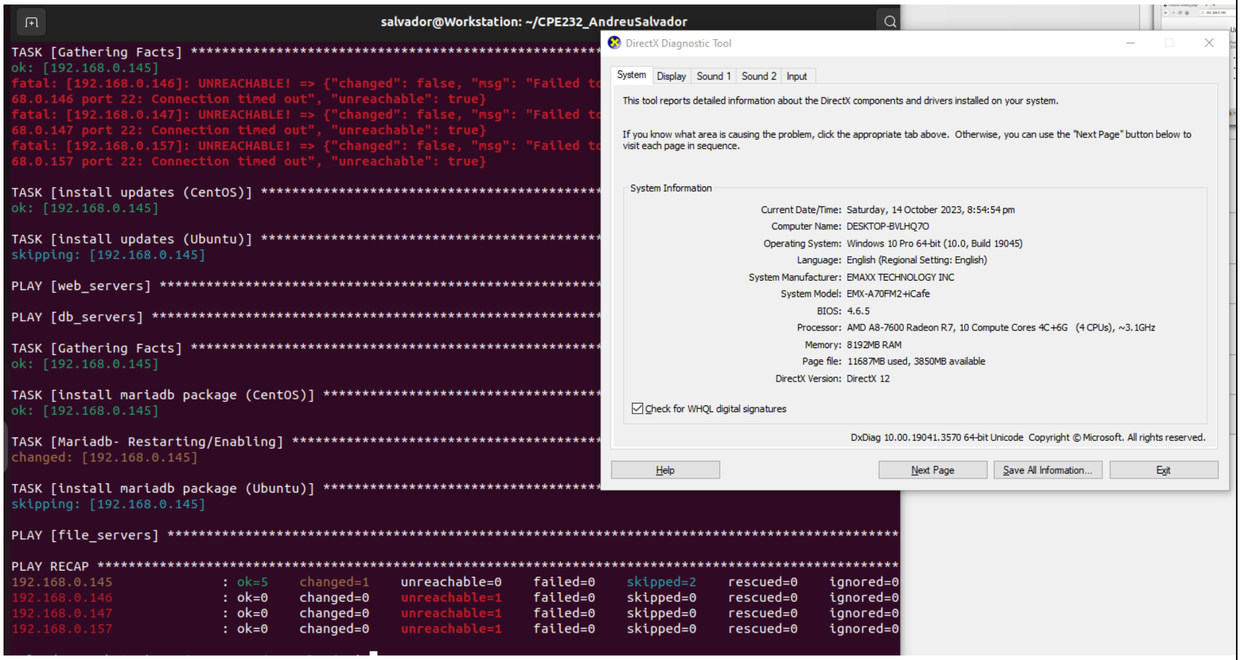
```
     Current Date/Time: Saturday, 14 October 2023, 8:54:54 pm
         Computer Name: DESKTOP-BVLHQ7O
      Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
              Language: English (Regional Setting: English)
   System Manufacturer: EMAXX TECHNOLOGY INC
          System Model: EMX-A70FM2+iCafe
                  BIOS: 4.6.5
             Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G   (4 CPUs), ~3.1GHz
                Memory: 8192MB RAM
             Page file: 11687MB used, 3850MB available
       DirectX Version: DirectX 12
```

☑ Check for WHQL digital signatures

DxDiag 10.00.19041.3570 64-bit Unicode Copyright © Microsoft. All rights reser

```
ibution == "CentOS"
tarting/Enabling"
```

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.



salvador@Workstation: ~/CPE232_AndreuSalvador

```
TASK [Gathering Facts] **************************************************
ok: [192.168.0.145]
fatal: [192.168.0.146]: UNREACHABLE! => {"changed": false, "msg": "Failed to
68.0.146 port 22: Connection timed out", "unreachable": true}
fatal: [192.168.0.147]: UNREACHABLE! => {"changed": false, "msg": "Failed to
68.0.147 port 22: Connection timed out", "unreachable": true}
fatal: [192.168.0.157]: UNREACHABLE! => {"changed": false, "msg": "Failed to
68.0.157 port 22: Connection timed out", "unreachable": true}

TASK [install updates (CentOS)] *****************************************
ok: [192.168.0.145]

TASK [install updates (Ubuntu)] *****************************************
skipping: [192.168.0.145]

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

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

TASK [Gathering Facts] **************************************************
ok: [192.168.0.145]

TASK [install mariadb package (CentOS)] *********************************
ok: [192.168.0.145]

TASK [Mariadb- Restarting/Enabling] *************************************
changed: [192.168.0.145]

TASK [install mariadb package (Ubuntu)] *********************************
skipping: [192.168.0.145]

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

PLAY RECAP **************************************************************************************************
192.168.0.145              : ok=5    changed=1    unreachable=0    failed=0    skipped=2    rescued=0    ignored=0
192.168.0.146              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0
192.168.0.147              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0
192.168.0.157              : ok=0    changed=0    unreachable=1    failed=0    skipped=0    rescued=0    ignored=0
```

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 below to visit each page in sequence.

System Information

Current Date/Time: Saturday, 14 October 2023, 8:54:54 pm
Computer Name: DESKTOP-BVLHQ7O
Operating System: Windows 10 Pro 64-bit (10.0, Build 19045)
Language: English (Regional Setting: English)
System Manufacturer: EMAXX TECHNOLOGY INC
System Model: EMX-A70FM2+iCafe
BIOS: 4.6.5
Processor: AMD A8-7600 Radeon R7, 10 Compute Cores 4C+6G (4 CPUs), ~3.1GHz
Memory: 8192MB RAM
Page file: 11687MB used, 3850MB available
DirectX Version: DirectX 12

☑ Check for WHQL digital signatures

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This indication of changed is possibly the starting of the httpd that we earlier stopped in the centos server.

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.

Reflections:

Answer the following:

1. What is the importance of putting our remote servers into groups?
   - To separate those servers for their specified functions such as this server is for web_server, etc. Groups also lets you specify where you want certain tasks to only work or run on for instance is in the procedure above wherein the db_servers are indicated on the following tasks wherein the tasks that was written inside the playbook will only affect the servers inside the group that was indicated in the playbook.
2. What is the importance of tags in playbooks?
   - Tags are similar to the premise of what we use groups for. Tags lets you put “marks” on tasks written inside the playbook afterwards you can indicate the tag that you place on those tasks when playing the playbook to only run that specific tasks with the appropriate tag indicated.

3. Why do think some services need to be managed automatically in playbooks?
    - To fix errors that occurs when services aren’t managed consistently. Using automation, it will help services that need maintenance consistently, thus playbooks that runs the serives automatically will be a huge help in such problem of various kinds of service.