Name: Bacong, El Cid A.	**Date Performed:** 9/19/2025
Course/Section: CPE212 - CPE31S4	**Date Submitted:** 9/19/2025
Instructor: Engr. Robin Valenzuela	**Semester and SY:** 1st Sem, 2025-2026

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: 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"
```

```
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
cidee@workstation:~$ sudo add-apt-repository --yes --update ppa:ansible/ansible
Hit:1 http://us.archive.ubuntu.com/ubuntu bionic InRelease
Hit:2 http://security.ubuntu.com/ubuntu bionic-security InRelease
Hit:3 http://us.archive.ubuntu.com/ubuntu bionic-updates InRelease
Get:4 http://ppa.launchpad.net/ansible/ansible/ubuntu bionic InRelease [15.9 kB
]
Hit:5 http://us.archive.ubuntu.com/ubuntu bionic-backports InRelease
Get:6 http://ppa.launchpad.net/ansible/ansible/ubuntu bionic/main i386 Packages
 [704 B]
Get:7 http://ppa.launchpad.net/ansible/ansible/ubuntu bionic/main amd64 Package
s [704 B]
Get:8 http://ppa.launchpad.net/ansible/ansible/ubuntu bionic/main Translation-e
n [472 B]
Fetched 17.8 kB in 2s (10.3 kB/s)
Reading package lists... Done
cidee@workstation:~$ sudo apt install --only-upgrade ansible
Reading package lists... Done
```

```
All packages are up to date.
cidee@workstation:~$ sudo apt install software-properties-common
Reading package lists... Done
```

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
```

```
[db_servers]
192.168.56.110

[web_servers]
192.168.56.105
192.168.56.106

[file_servers]
192.168.56.112
```

Make sure to save the file and exit.

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

```
cidee@workstation:~/CPE212_elcid$ ansible-playbook site.yml -K
BECOME password:

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

TASK [Gathering Facts] *********************************************************
[WARNING]: Platform linux on host 192.168.56.103 is using the discovered Python
interpreter at /usr/bin/python3.13, but future installation of another Python
interpreter could change the meaning of that path. See
https://docs.ansible.com/ansible-
core/2.18/reference_appendices/interpreter_discovery.html for more information.
ok: [192.168.56.103]
[WARNING]: Platform linux on host 192.168.56.104 is using the discovered Python
interpreter at /usr/bin/python3.9, but future installation of another Python
interpreter could change the meaning of that path. See
https://docs.ansible.com/ansible-
core/2.18/reference_appendices/interpreter_discovery.html for more information.
ok: [192.168.56.104]

TASK [install apache and php for Ubuntu servers] *******************************
skipping: [192.168.56.104]
ok: [192.168.56.103]

TASK [install apache and php for CentOS servers] *******************************
skipping: [192.168.56.103]
ok: [192.168.56.104]

PLAY RECAP *********************************************************************
192.168.56.103             : ok=2    changed=0    unreachable=0    failed=0    skipped
=1    rescued=0    ignored=0
192.168.56.104             : ok=2    changed=0    unreachable=0    failed=0    skipped
=1    rescued=0    ignored=0
```

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.

```
  GNU nano 8.3                                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
```

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.

```
cidee@workstation:~/CPE212_elcid$ ansible-playbook site.yml -K
BECOME password:

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

TASK [Gathering Facts] *********************************************************
[WARNING]: Platform linux on host 192.168.56.103 is using the discovered Python
interpreter at /usr/bin/python3.13, but future installation of another Python
interpreter could change the meaning of that path. See
https://docs.ansible.com/ansible-
core/2.18/reference_appendices/interpreter_discovery.html for more information.
ok: [192.168.56.103]
[WARNING]: Platform linux on host 192.168.56.104 is using the discovered Python
interpreter at /usr/bin/python3.9, but future installation of another Python
interpreter could change the meaning of that path. See
https://docs.ansible.com/ansible-
core/2.18/reference_appendices/interpreter_discovery.html for more information.
ok: [192.168.56.104]

TASK [install updates (CentOS)] ************************************************
skipping: [192.168.56.103]
ok: [192.168.56.104]

TASK [install updates (Ubuntu)] ************************************************
skipping: [192.168.56.104]
ok: [192.168.56.103]

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

TASK [Gathering Facts] *********************************************************
ok: [192.168.56.103]

TASK [install apache and php for Ubuntu servers] *******************************
ok: [192.168.56.103]
```

```
TASK [install apache and php for CentOS servers] *******************************
skipping: [192.168.56.103]

PLAY RECAP *********************************************************************
192.168.56.103             : ok=4    changed=0    unreachable=0    failed=0    skipped
=2    rescued=0    ignored=0
192.168.56.104             : ok=2    changed=0    unreachable=0    failed=0    skipped
=1    rescued=0    ignored=0
```

The playbook executed smoothly. All tasks for web_servers completed without errors.

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.

```yaml
- 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"
```

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

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

TASK [Gathering Facts] **********************************************************
ok: [192.168.56.103]
ok: [192.168.56.104]

TASK [install mariadb package (CentOS)] *****************************************
skipping: [192.168.56.103]
ok: [192.168.56.104]

TASK [Mariadb- Restarting/Enabling] *********************************************
changed: [192.168.56.104]
changed: [192.168.56.103]

TASK [install mariadb package (Ubuntu)] *****************************************
skipping: [192.168.56.104]
ok: [192.168.56.103]
```

MariaDB was installed properly on both Ubuntu and CentOS database servers.

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.

```
[cidee@centos ~]$ sudo systemctl status mariadb
[sudo] password for cidee:
● mariadb.service - MariaDB 10.5 database server
     Loaded: loaded (/usr/lib/systemd/system/mariadb.service; enabled; preset: >
     Active: active (running) since Fri 2025-09-19 22:07:42 PST; 2min 58s ago
       Docs: man:mariadbd(8)
             https://mariadb.com/kb/en/library/systemd/
    Process: 93482 ExecStartPre=/usr/libexec/mariadb-check-socket (code=exited,>
    Process: 93504 ExecStartPre=/usr/libexec/mariadb-prepare-db-dir mariadb.ser>
    Process: 93598 ExecStartPost=/usr/libexec/mariadb-check-upgrade (code=exite>
   Main PID: 93586 (mariadbd)
     Status: "Taking your SQL requests now..."
      Tasks: 8 (limit: 2494)
     Memory: 18.1M (peak: 117.1M)
        CPU: 597ms
     CGroup: /system.slice/mariadb.service
             └─93586 /usr/libexec/mariadbd --basedir=/usr

Sep 19 22:07:42 centos mariadb-prepare-db-dir[93543]: The second is mysql@local>
Sep 19 22:07:42 centos mariadb-prepare-db-dir[93543]: you need to be the system>
Sep 19 22:07:42 centos mariadb-prepare-db-dir[93543]: After connecting you can >
Sep 19 22:07:42 centos mariadb-prepare-db-dir[93543]: able to connect as any of>
Sep 19 22:07:42 centos mariadb-prepare-db-dir[93543]: See the MariaDB Knowledge>
Sep 19 22:07:42 centos mariadb-prepare-db-dir[93543]: Please report any problem>
Sep 19 22:07:42 centos mariadb-prepare-db-dir[93543]: The latest information ab>
lines 1-23...skipping...
● mariadb.service - MariaDB 10.5 database server
```

```
cidee@server1:~$ sudo systemctl status mariadb
● mariadb.service - MariaDB 11.4.7 database server
     Loaded: loaded (/usr/lib/systemd/system/mariadb.service; enabl>
     Active: active (running) since Fri 2025-09-19 14:27:40 UTC; 1m>
 Invocation: f091873ede5e4700b4c3c0d1f0e24a3a
       Docs: man:mariadbd(8)
             https://mariadb.com/kb/en/library/systemd/
   Main PID: 17729 (mariadbd)
     Status: "Taking your SQL requests now..."
      Tasks: 10 (limit: 10623)
     Memory: 85.4M (peak: 98.2M)
        CPU: 1.019s
     CGroup: /system.slice/mariadb.service
             └─17729 /usr/sbin/mariadbd

Sep 19 14:27:40 server1 mariadbd[17729]: 2025-09-19 14:27:40 0 [Not>
Sep 19 14:27:40 server1 mariadbd[17729]: 2025-09-19 14:27:40 0 [Not>
Sep 19 14:27:40 server1 mariadbd[17729]: 2025-09-19 14:27:40 0 [Not>
Sep 19 14:27:40 server1 mariadbd[17729]: 2025-09-19 14:27:40 0 [Not>
lines 1-18...skipping...
● mariadb.service - MariaDB 11.4.7 database server
```

Describe the output.

I was able to see that mariadb is enabled and starting on remote servers

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.

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

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

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

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

TASK [Gathering Facts] *********************************************************
ok: [192.168.56.103]

TASK [install samba package] ***************************************************
changed: [192.168.56.103]

PLAY RECAP *********************************************************************
192.168.56.103             : ok=9    changed=2    unreachable=0    failed=0    skipped
=3    rescued=0    ignored=0
192.168.56.104             : ok=7    changed=1    unreachable=0    failed=0    skipped
=3    rescued=0    ignored=0
```

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.

```yaml
---

- 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"
```

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

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

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

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

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

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

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

- hosts: file_servers
  become: true
  tasks:

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

Make sure to save the file and exit.
Run the *site.yml* file and describe the result.

```
cidee@workstation:~/CPE212_elcid$ ansible-playbook site.yml -K

BECOME password:

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

TASK [Gathering Facts] *********************************************************
[WARNING]: Platform linux on host 192.168.56.103 is using the discovered Python
interpreter at /usr/bin/python3.13, but future installation of another Python
interpreter could change the meaning of that path. See
https://docs.ansible.com/ansible-
core/2.18/reference_appendices/interpreter_discovery.html for more information.
ok: [192.168.56.103]
[WARNING]: Platform linux on host 192.168.56.104 is using the discovered Python
interpreter at /usr/bin/python3.9, but future installation of another Python
interpreter could change the meaning of that path. See
https://docs.ansible.com/ansible-
core/2.18/reference_appendices/interpreter_discovery.html for more information.
ok: [192.168.56.104]

TASK [install updates (CentOS)] ************************************************
skipping: [192.168.56.103]
ok: [192.168.56.104]

TASK [install updates (Ubuntu)] ************************************************
skipping: [192.168.56.104]
ok: [192.168.56.103]

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

TASK [Gathering Facts] *********************************************************
ok: [192.168.56.103]
ok: [192.168.56.104]
```

```
TASK [install apache and php for Ubuntu servers] ************************************
skipping: [192.168.56.104]
ok: [192.168.56.103]

TASK [install apache and php for CentOS servers] ************************************
skipping: [192.168.56.103]
ok: [192.168.56.104]

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

TASK [Gathering Facts] **************************************************************
ok: [192.168.56.103]
ok: [192.168.56.104]

TASK [install mariadb package (CentOS)] *********************************************
skipping: [192.168.56.103]
ok: [192.168.56.104]

TASK [Mariadb- Restarting/Enabling] *************************************************
changed: [192.168.56.104]
changed: [192.168.56.103]

TASK [install mariadb package (Ubuntu)] *********************************************
skipping: [192.168.56.104]
ok: [192.168.56.103]

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

TASK [Gathering Facts] **************************************************************
ok: [192.168.56.103]
```

```
TASK [install samba package] ********************************************************
ok: [192.168.56.103]

PLAY RECAP **************************************************************************
192.168.56.103             : ok=9    changed=1    unreachable=0    failed=0    skipped
=3    rescued=0    ignored=0
192.168.56.104             : ok=7    changed=1    unreachable=0    failed=0    skipped
=3    rescued=0    ignored=0
```

Tags worked, and plays can now be run selectively.

2. On the local machine, try to issue the following commands and describe each result:
   2.1 *ansible-playbook --list-tags site.yml*

```
cidee@workstation:~/CPE212_elcid$ ansible-playbook --list-tags site.yml

playbook: site.yml

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

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

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

  play #4 (file_servers): file_servers  TAGS: []
      TASK TAGS: [samba]
```

Displayed all available tags in the playbook.

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

```
cidee@workstation:~/CPE212_elcid$ ansible-playbook --tags centos --ask-become-pass sit
e.yml
BECOME password:

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

TASK [Gathering Facts] *********************************************************
[WARNING]: Platform linux on host 192.168.56.103 is using the discovered Python
interpreter at /usr/bin/python3.13, but future installation of another Python
interpreter could change the meaning of that path. See
https://docs.ansible.com/ansible-
core/2.18/reference_appendices/interpreter_discovery.html for more information.
ok: [192.168.56.103]
[WARNING]: Platform linux on host 192.168.56.104 is using the discovered Python
interpreter at /usr/bin/python3.9, but future installation of another Python
interpreter could change the meaning of that path. See
https://docs.ansible.com/ansible-
core/2.18/reference_appendices/interpreter_discovery.html for more information.
ok: [192.168.56.104]

TASK [install updates (CentOS)] ************************************************
skipping: [192.168.56.103]
ok: [192.168.56.104]

TASK [install updates (Ubuntu)] ************************************************
skipping: [192.168.56.104]
ok: [192.168.56.103]

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

TASK [Gathering Facts] *********************************************************
ok: [192.168.56.103]
ok: [192.168.56.104]
```

```
TASK [install updates (CentOS)] ************************************************
skipping: [192.168.56.103]
ok: [192.168.56.104]

TASK [install updates (Ubuntu)] ************************************************
skipping: [192.168.56.104]
ok: [192.168.56.103]

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

TASK [Gathering Facts] *********************************************************
ok: [192.168.56.103]
ok: [192.168.56.104]

TASK [install apache and php for CentOS servers] *******************************
skipping: [192.168.56.103]
ok: [192.168.56.104]

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

TASK [Gathering Facts] *********************************************************
ok: [192.168.56.103]
ok: [192.168.56.104]

TASK [install mariadb package (CentOS)] ****************************************
skipping: [192.168.56.103]
ok: [192.168.56.104]

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

TASK [Gathering Facts] *********************************************************
ok: [192.168.56.103]
```

```
PLAY RECAP *********************************************************************
192.168.56.103             : ok=5    changed=0    unreachable=0    failed=0    skipped
=3    rescued=0    ignored=0
192.168.56.104             : ok=6    changed=0    unreachable=0    failed=0    skipped
=1    rescued=0    ignored=0
```

Only ran tasks for CentOS servers.

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

```
cidee@workstation:~/CPE212_elcid$ ansible-playbook --tags db --ask-become-pass site.ym
l
BECOME password:

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

TASK [Gathering Facts] *********************************************************
[WARNING]: Platform linux on host 192.168.56.103 is using the discovered Python
interpreter at /usr/bin/python3.13, but future installation of another Python
interpreter could change the meaning of that path. See
https://docs.ansible.com/ansible-
core/2.18/reference_appendices/interpreter_discovery.html for more information.
ok: [192.168.56.103]
[WARNING]: Platform linux on host 192.168.56.104 is using the discovered Python
interpreter at /usr/bin/python3.9, but future installation of another Python
interpreter could change the meaning of that path. See
https://docs.ansible.com/ansible-
core/2.18/reference_appendices/interpreter_discovery.html for more information.
ok: [192.168.56.104]

TASK [install updates (CentOS)] ************************************************
skipping: [192.168.56.103]
ok: [192.168.56.104]

TASK [install updates (Ubuntu)] ************************************************
skipping: [192.168.56.104]
ok: [192.168.56.103]

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

TASK [Gathering Facts] *********************************************************
ok: [192.168.56.103]
ok: [192.168.56.104]
```

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

TASK [Gathering Facts] **********************************************************
ok: [192.168.56.103]
ok: [192.168.56.104]

TASK [install mariadb package (CentOS)] *****************************************
skipping: [192.168.56.103]
ok: [192.168.56.104]

TASK [install mariadb package (Ubuntu)] *****************************************
skipping: [192.168.56.104]
ok: [192.168.56.103]

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

TASK [Gathering Facts] **********************************************************
ok: [192.168.56.103]

PLAY RECAP **********************************************************************
192.168.56.103             : ok=6    changed=0    unreachable=0    failed=0    skipped
=2    rescued=0    ignored=0
192.168.56.104             : ok=5    changed=0    unreachable=0    failed=0    skipped
=2    rescued=0    ignored=0
```

Only executed database installation tasks.

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

```
cidee@workstation:~/CPE212_elcid$ ansible-playbook --tags apache --ask-become-pass sit
e.yml
BECOME password:

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

TASK [Gathering Facts] *********************************************************
[WARNING]: Platform linux on host 192.168.56.103 is using the discovered Python
interpreter at /usr/bin/python3.13, but future installation of another Python
interpreter could change the meaning of that path. See
https://docs.ansible.com/ansible-
core/2.18/reference_appendices/interpreter_discovery.html for more information.
ok: [192.168.56.103]
[WARNING]: Platform linux on host 192.168.56.104 is using the discovered Python
interpreter at /usr/bin/python3.9, but future installation of another Python
interpreter could change the meaning of that path. See
https://docs.ansible.com/ansible-
core/2.18/reference_appendices/interpreter_discovery.html for more information.
ok: [192.168.56.104]

TASK [install updates (CentOS)] ************************************************
skipping: [192.168.56.103]
ok: [192.168.56.104]

TASK [install updates (Ubuntu)] ************************************************
skipping: [192.168.56.104]
ok: [192.168.56.103]

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

TASK [Gathering Facts] *********************************************************
ok: [192.168.56.103]
ok: [192.168.56.104]
```

```
TASK [install apache and php for Ubuntu servers] ***************************************
skipping: [192.168.56.104]
ok: [192.168.56.103]

TASK [install apache and php for CentOS servers] ***************************************
skipping: [192.168.56.103]
ok: [192.168.56.104]

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

TASK [Gathering Facts] *****************************************************************
ok: [192.168.56.103]
ok: [192.168.56.104]

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

TASK [Gathering Facts] *****************************************************************
ok: [192.168.56.103]

PLAY RECAP *****************************************************************************
192.168.56.103             : ok=6    changed=0    unreachable=0    failed=0    skipped
=2    rescued=0    ignored=0
192.168.56.104             : ok=5    changed=0    unreachable=0    failed=0    skipped
=2    rescued=0    ignored=0
```

Only executed Apache + PHP installation tasks.

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

```
cidee@workstation:~/CPE212_elcid$ ansible-playbook --tags "apache,db" --ask-become-pas
s site.yml
BECOME password:

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

TASK [Gathering Facts] *********************************************************
[WARNING]: Platform linux on host 192.168.56.103 is using the discovered Python
interpreter at /usr/bin/python3.13, but future installation of another Python
interpreter could change the meaning of that path. See
https://docs.ansible.com/ansible-
core/2.18/reference_appendices/interpreter_discovery.html for more information.
ok: [192.168.56.103]
[WARNING]: Platform linux on host 192.168.56.104 is using the discovered Python
interpreter at /usr/bin/python3.9, but future installation of another Python
interpreter could change the meaning of that path. See
https://docs.ansible.com/ansible-
core/2.18/reference_appendices/interpreter_discovery.html for more information.
ok: [192.168.56.104]

TASK [install updates (CentOS)] ************************************************
skipping: [192.168.56.103]
ok: [192.168.56.104]

TASK [install updates (Ubuntu)] ************************************************
skipping: [192.168.56.104]
ok: [192.168.56.103]

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

TASK [Gathering Facts] *********************************************************
ok: [192.168.56.104]
ok: [192.168.56.103]
```

```
TASK [install apache and php for Ubuntu servers] ***************************************
skipping: [192.168.56.104]
ok: [192.168.56.103]

TASK [install apache and php for CentOS servers] ***************************************
skipping: [192.168.56.103]
ok: [192.168.56.104]

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

TASK [Gathering Facts] *****************************************************************
ok: [192.168.56.103]
ok: [192.168.56.104]

TASK [install mariadb package (CentOS)] ************************************************
skipping: [192.168.56.103]
ok: [192.168.56.104]

TASK [install mariadb package (Ubuntu)] ************************************************
skipping: [192.168.56.104]
ok: [192.168.56.103]

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

TASK [Gathering Facts] *****************************************************************
ok: [192.168.56.103]

PLAY RECAP *****************************************************************************
192.168.56.103             : ok=7    changed=0    unreachable=0    failed=0    skipped
=3    rescued=0    ignored=0
192.168.56.104             : ok=6    changed=0    unreachable=0    failed=0    skipped
=3    rescued=0    ignored=0
```

Ran both Apache and MariaDB plays, skipped others.

Task 3: Managing Services

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

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

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

Figure 3.1.1
Make sure to save the file and exit.

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

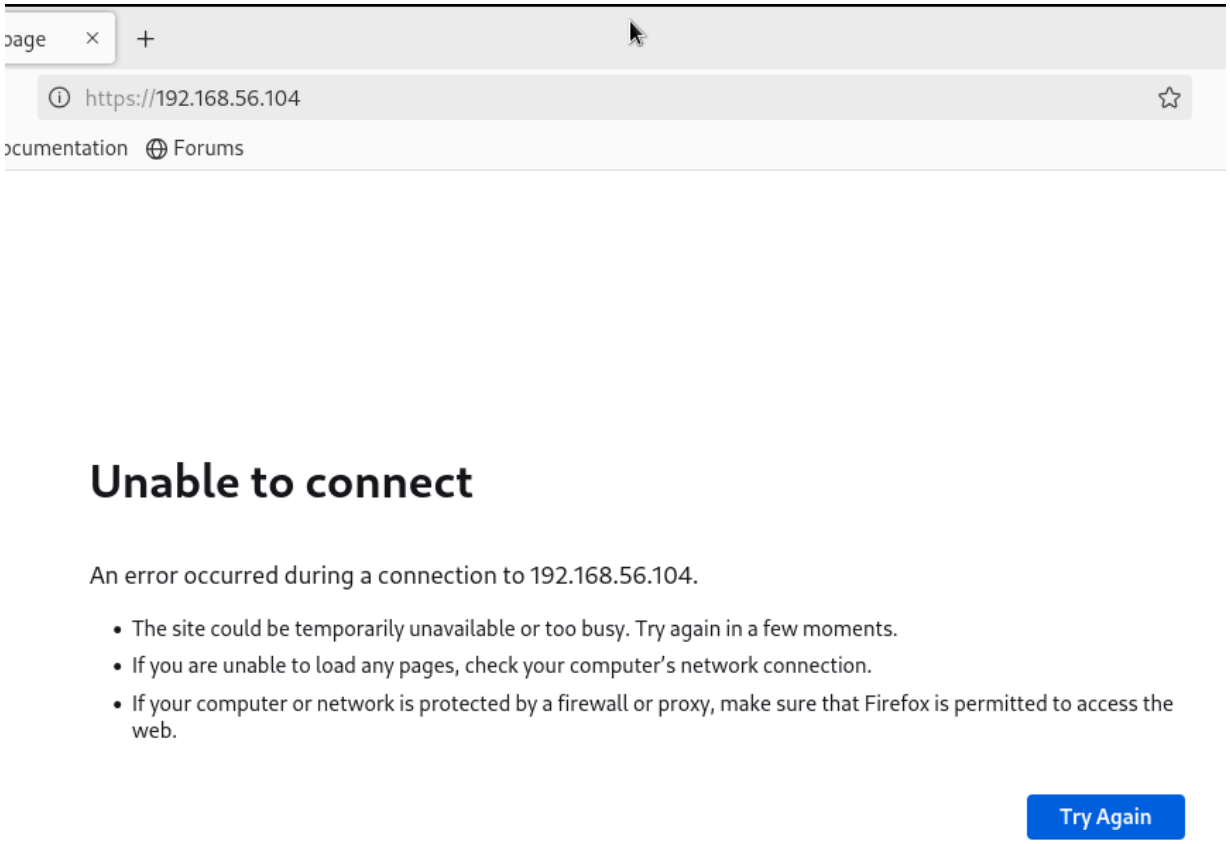
```
- hosts: db_servers
  become: true
  tasks:

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

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

Figure 3.1.2

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

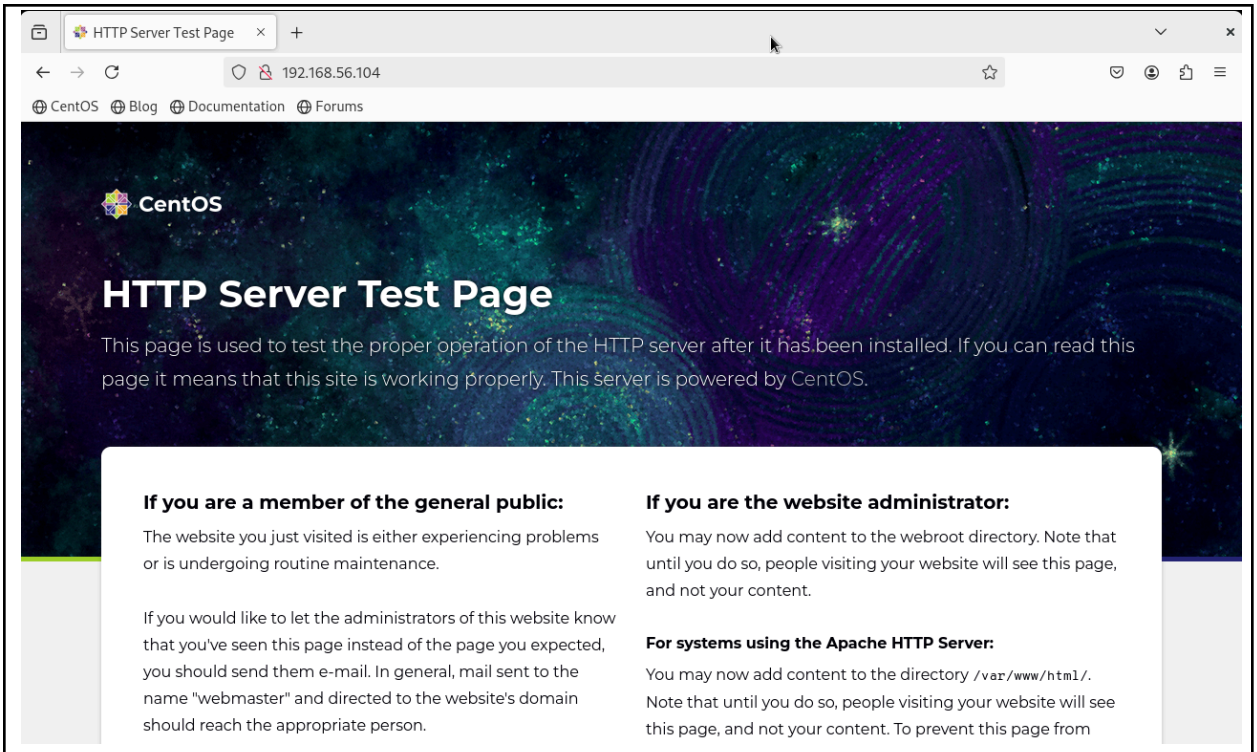
2. To test it, before you run the saved playbook, go to the CentOS server and stop the currently running httpd using the command *sudo systemctl stop httpd*.

When prompted, enter the sudo password. After that, open the browser and enter the CentOS server's IP address. You should not be getting a display because we stopped the httpd service already.



After stopping httpd, the CentOS IP showed no page in the browser.

3. Go to the local machine and this time, run the *site.yml* file. Then after running the file, go again to the CentOS server and enter its IP address on the browser. Describe the result.
   To automatically enable the service every time we run the playbook, use the command *enabled: true* similar to Figure 7.1.2 and save the playbook.



After re-running the playbook, httpd started again. The CentOS IP showed the Apache default page.

Reflections:

Answer the following:

1. What is the importance of putting our remote servers into groups?
   It makes management easier since each group has a specific role, so we can target them properly.
2. What is the importance of tags in playbooks?
   Tags let us run only the parts of the playbook that we need, which saves time.
3. Why do think some services need to be managed automatically in playbooks?
   Because some services don't start after installation. Managing them automatically ensures they're always running.