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Course/Section: CPE212 / CPE31S4	**Date Submitted:** 09/19/25
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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.

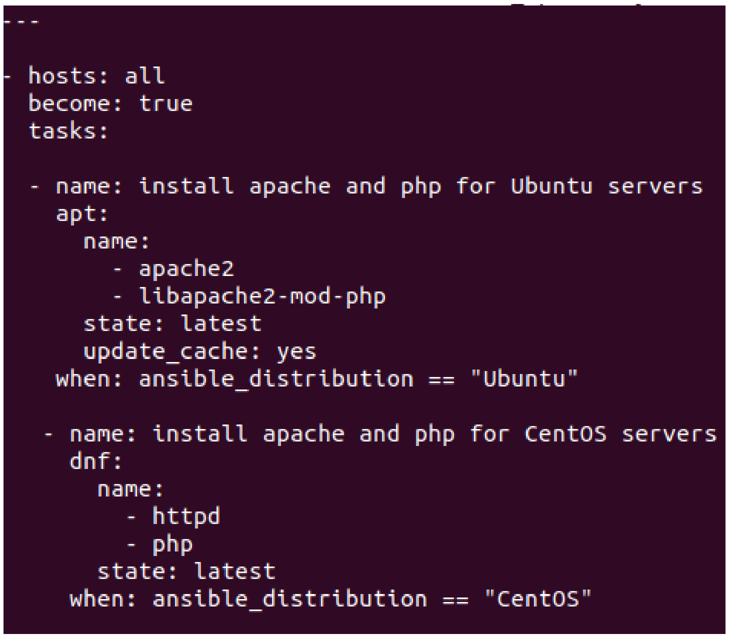
We also try to manage services that do not automatically run using the automations in playbook. For example, when we install web servers or httpd for CentOS, we notice that the service did not start automatically.

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.

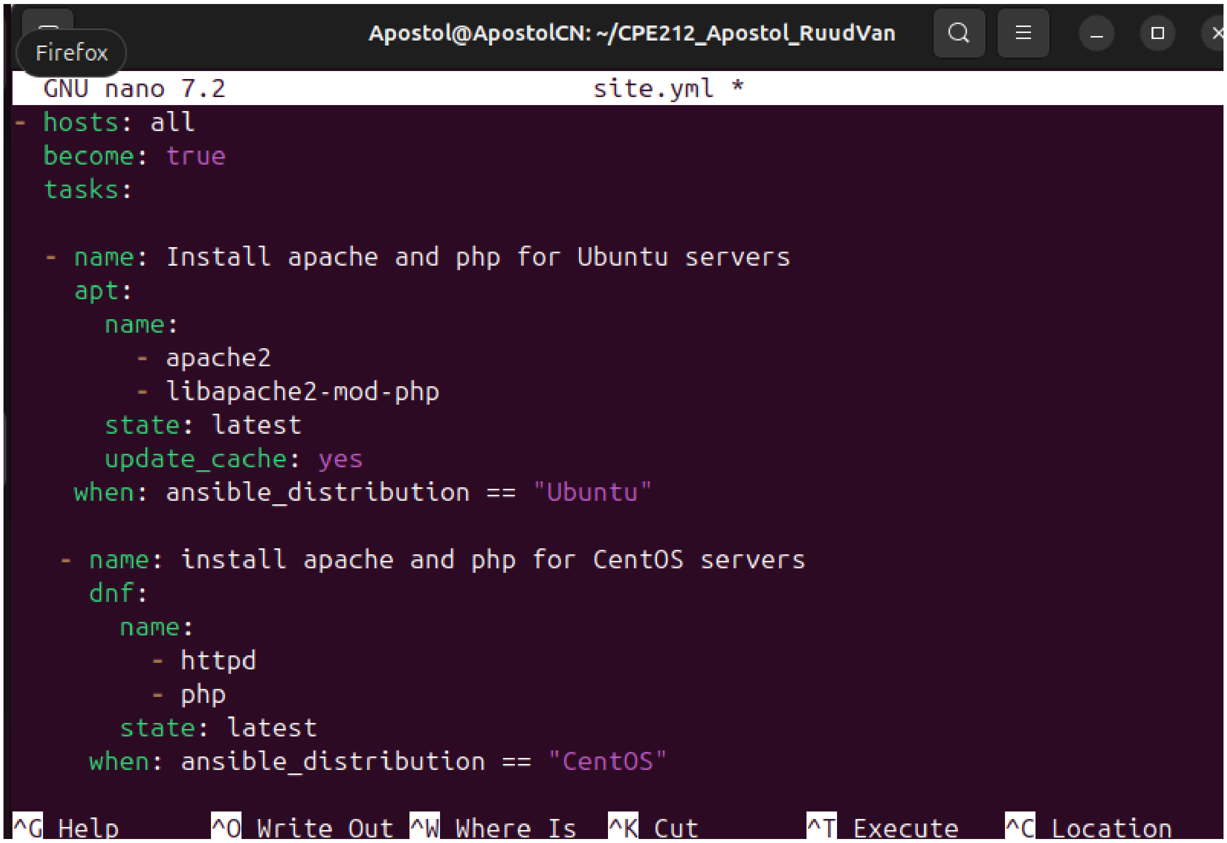
Task 1: Targeting Specific Nodes

1. cd
2. 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"
```

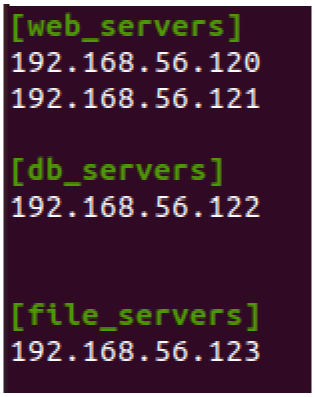
Output:



```
  GNU nano 7.2                        site.yml *
- 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"

^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute   ^C Location
```

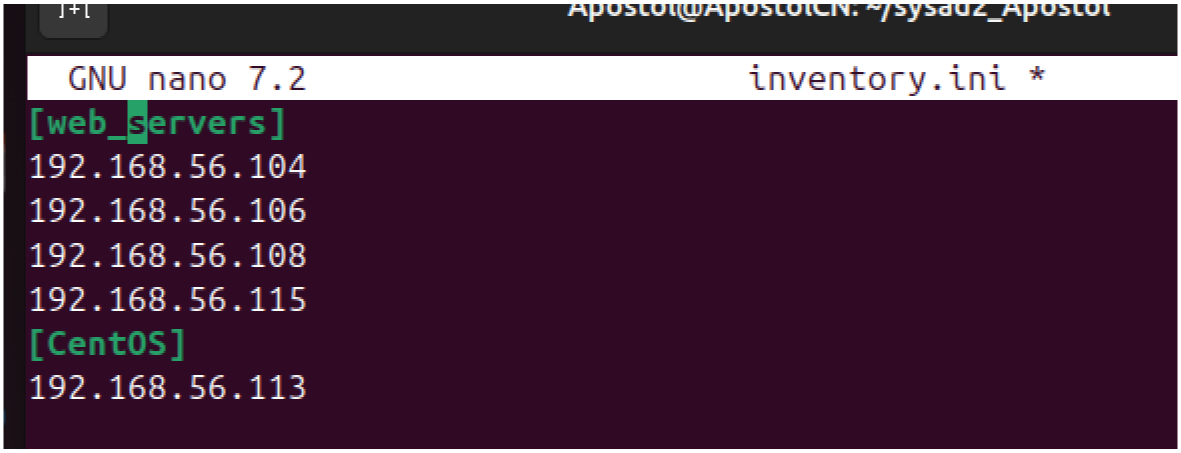
ans

3. 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
```

Output:

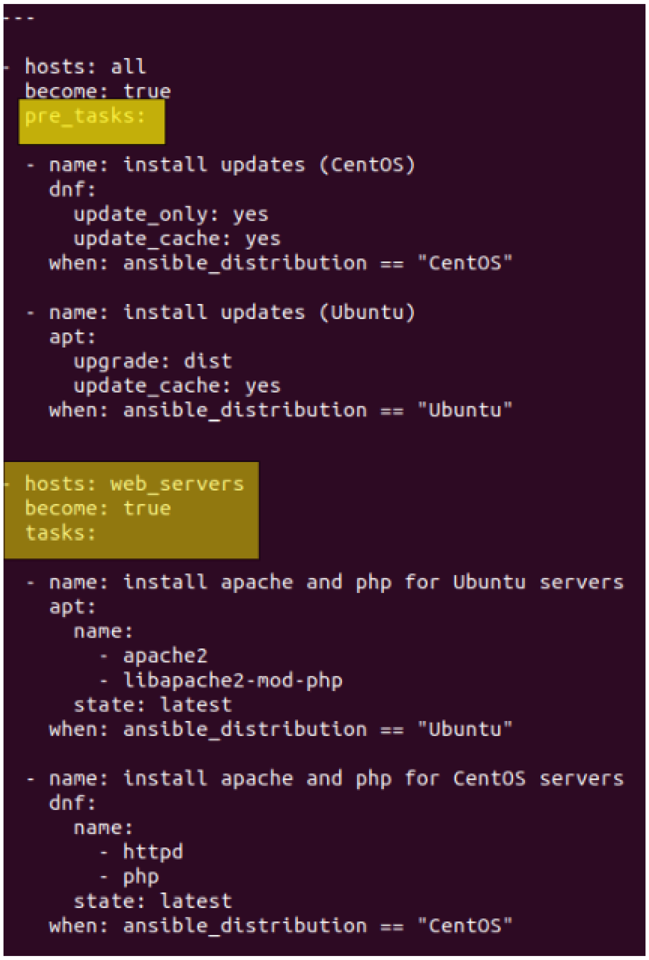


```
Apostol@ApostolCN: ~/sysad2_Apostol
  GNU nano 7.2                          inventory.ini *
[web_servers]
192.168.56.104
192.168.56.106
192.168.56.108
192.168.56.115
[CentOS]
192.168.56.113
```

Make sure to save the file and exit.

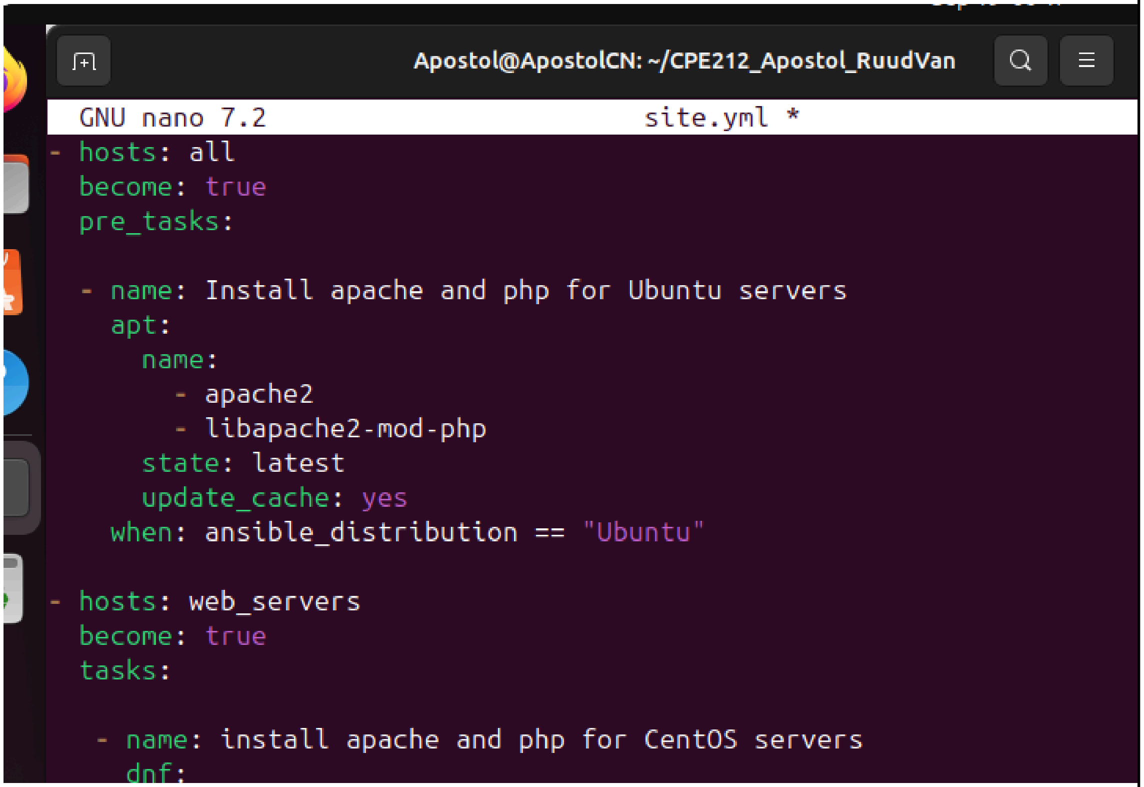
Right now, we have created groups in our inventory file and put each server in its own group. In other cases, you can have a server be a member of multiple groups, for example you have a test server that is also a web server.

4. 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"
```

Output:



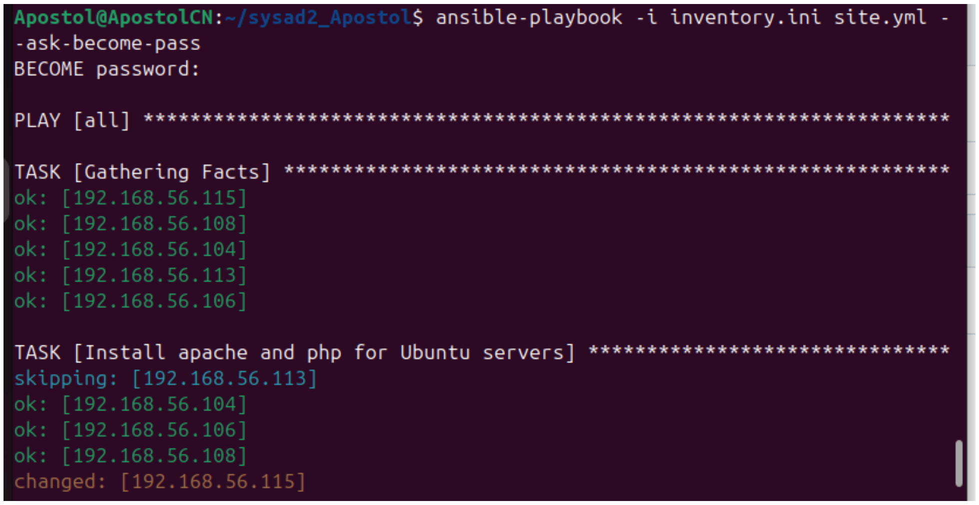
```
GNU nano 7.2                              site.yml *
- hosts: all
  become: true
  pre_tasks:

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

- hosts: web_servers
  become: true
  tasks:

   - name: install apache and php for CentOS servers
     dnf:
```

Make sure to save the file and exit.

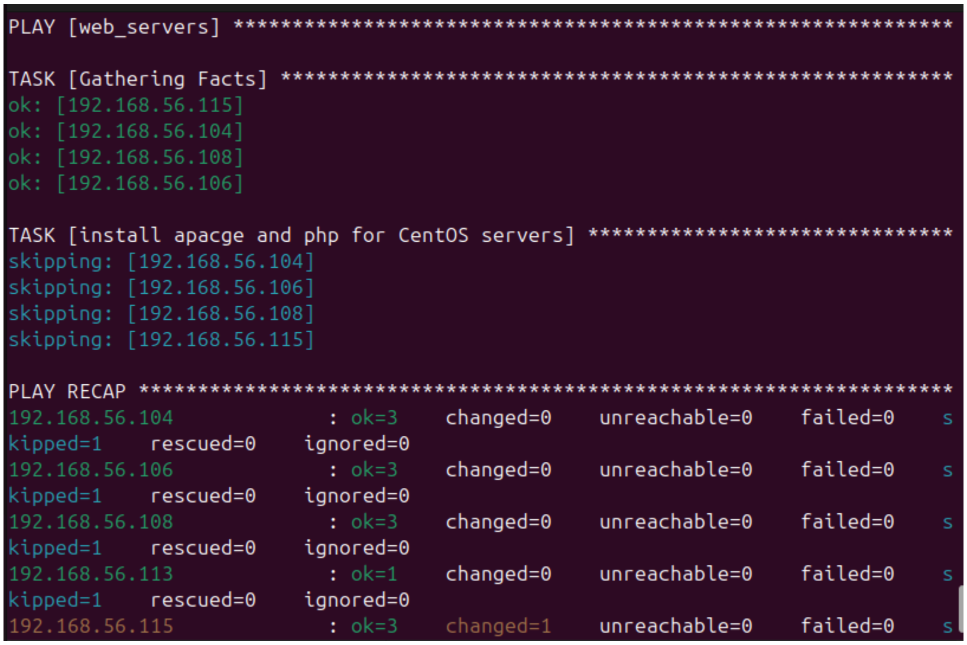
The *pre-tasks* command tells the ansible to run it before any other thing. In the *pre-tasks*, CentOS will install updates while Ubuntu will upgrade its distribution package. This will run before running the second play, which is targeted at *web_servers*. In the second play, apache and php will be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

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

Output:

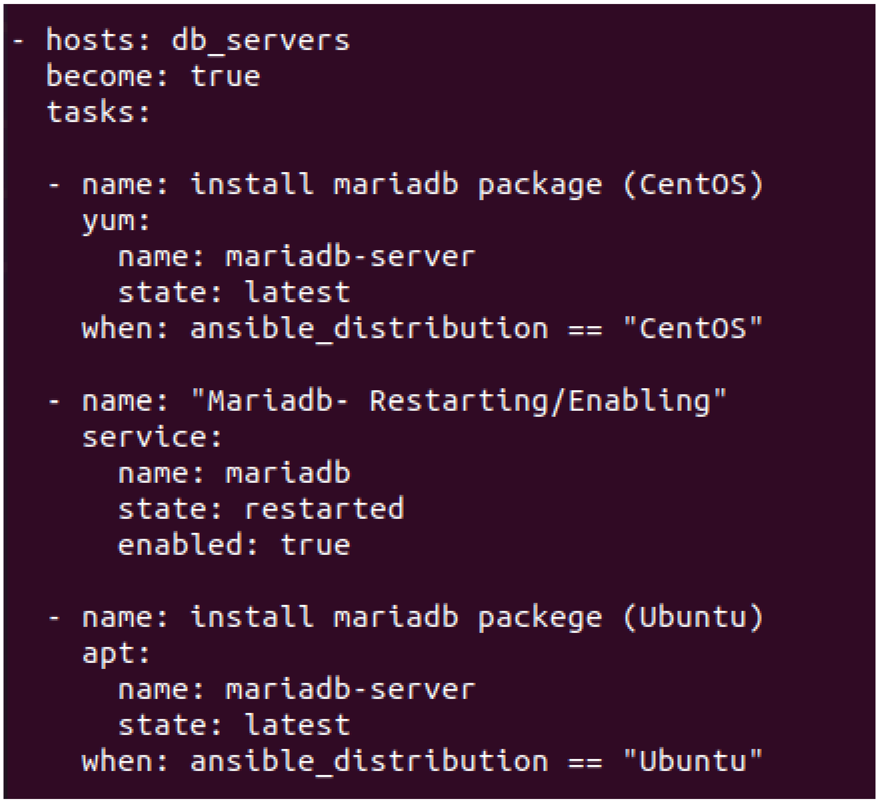


```
Apostol@ApostolCN:~/sysad2_Apostol$ ansible-playbook -i inventory.ini site.yml -
-ask-become-pass
BECOME password:

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

TASK [Gathering Facts] **********************************************************
ok: [192.168.56.115]
ok: [192.168.56.108]
ok: [192.168.56.104]
ok: [192.168.56.113]
ok: [192.168.56.106]

TASK [Install apache and php for Ubuntu servers] ********************************
skipping: [192.168.56.113]
ok: [192.168.56.104]
ok: [192.168.56.106]
ok: [192.168.56.108]
changed: [192.168.56.115]
```



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

TASK [Gathering Facts] **********************************************************
ok: [192.168.56.115]
ok: [192.168.56.104]
ok: [192.168.56.108]
ok: [192.168.56.106]

TASK [install apacge and php for CentOS servers] ********************************
skipping: [192.168.56.104]
skipping: [192.168.56.106]
skipping: [192.168.56.108]
skipping: [192.168.56.115]

PLAY RECAP **********************************************************************
192.168.56.104             : ok=3    changed=0    unreachable=0    failed=0    s
kipped=1    rescued=0    ignored=0
192.168.56.106             : ok=3    changed=0    unreachable=0    failed=0    s
kipped=1    rescued=0    ignored=0
192.168.56.108             : ok=3    changed=0    unreachable=0    failed=0    s
kipped=1    rescued=0    ignored=0
192.168.56.113             : ok=1    changed=0    unreachable=0    failed=0    s
kipped=1    rescued=0    ignored=0
192.168.56.115             : ok=3    changed=1    unreachable=0    failed=0    s
```

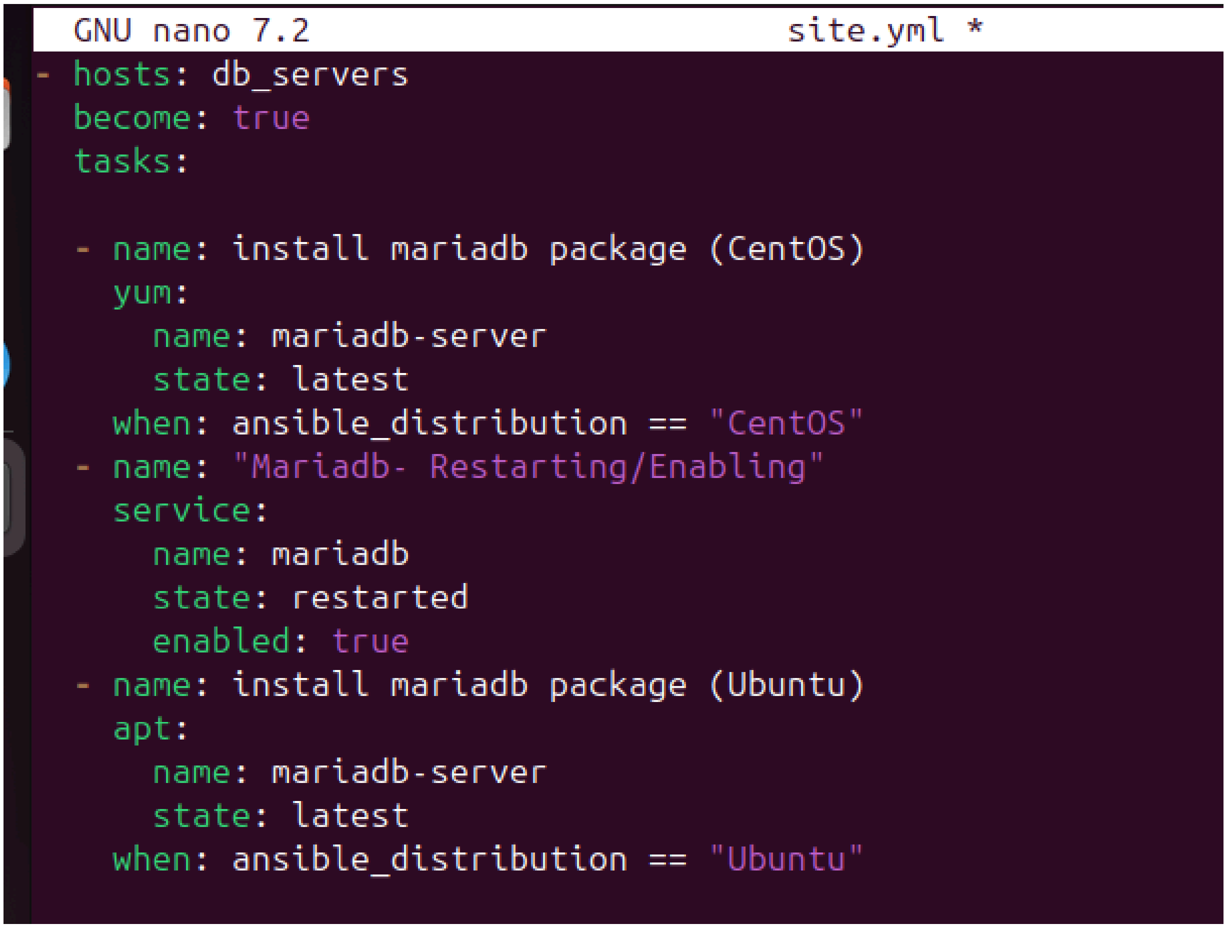
5. Let’s try to edit again the *site.yml* file. This time, we are going to add plays targeting the other servers. This time we target the *db_servers* by adding it on the current *site.yml*. Below is an example: (Note add this at the end of the playbooks from task 1.3.



```
- 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.

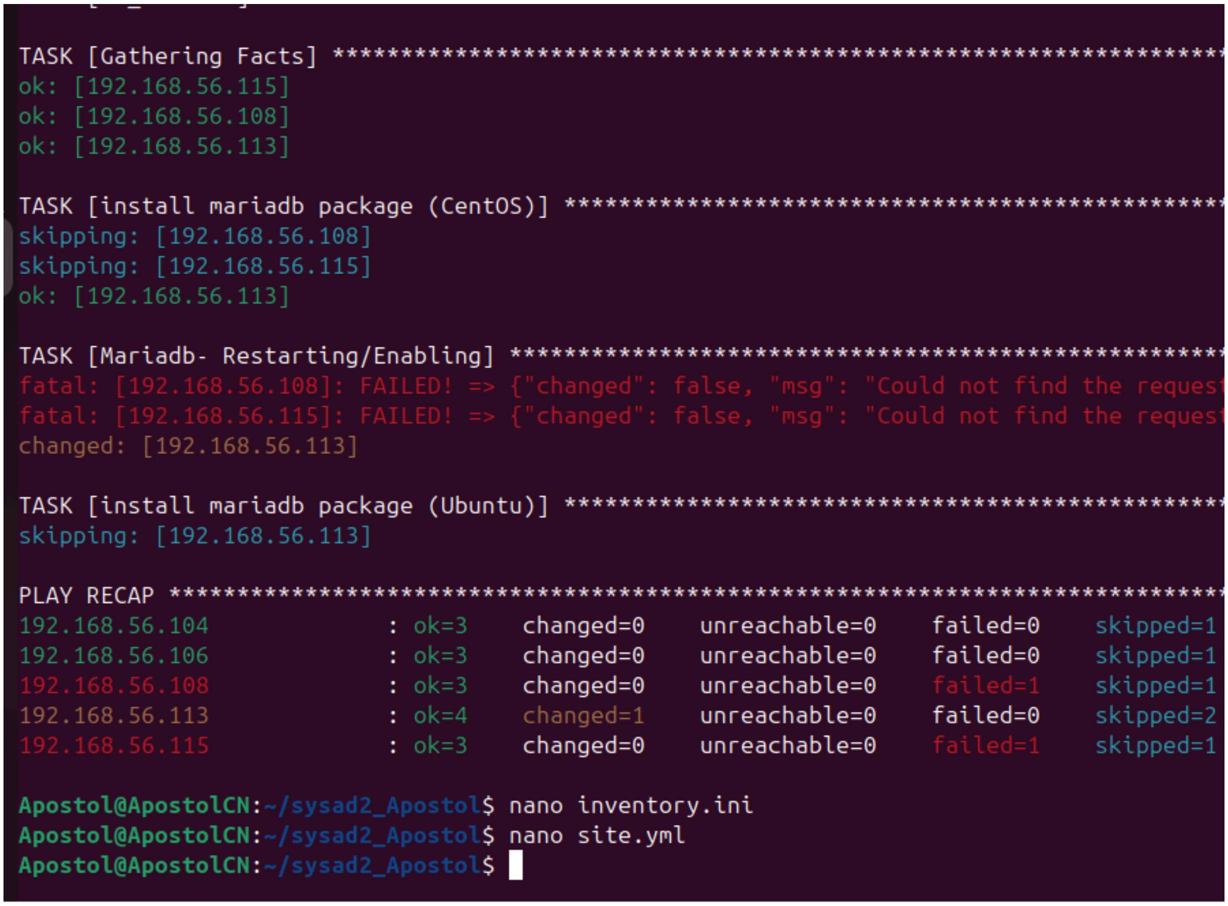
Output:



```
GNU nano 7.2                          site.yml *
- 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.

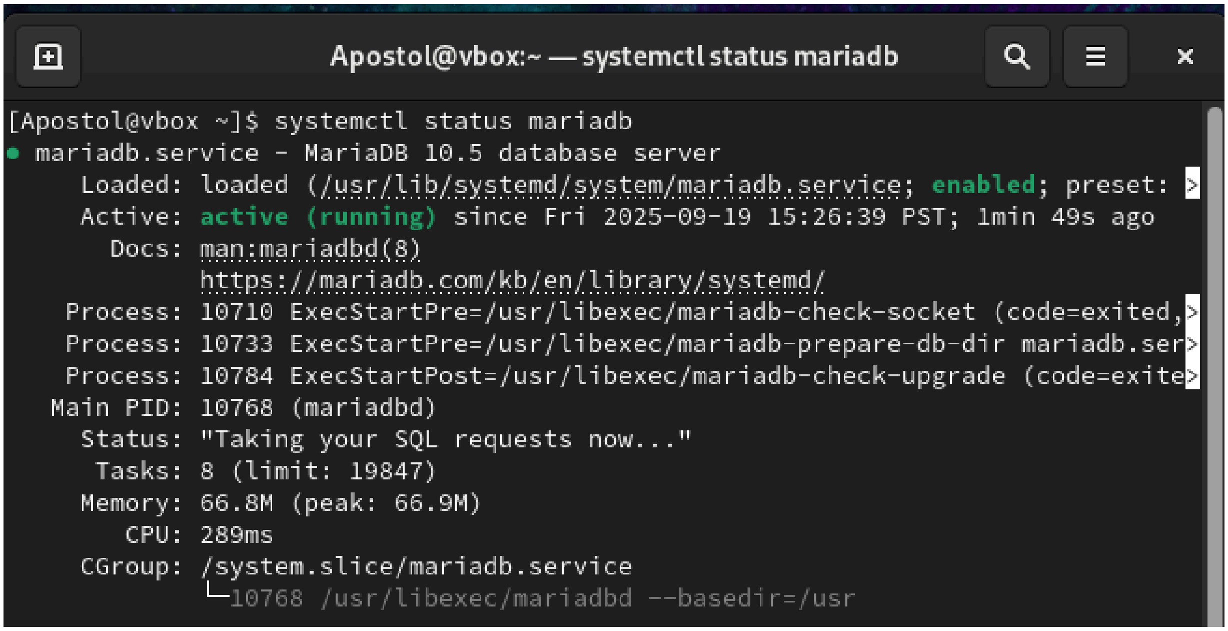
Output:



```
TASK [Gathering Facts] ***********************************************************
ok: [192.168.56.115]
ok: [192.168.56.108]
ok: [192.168.56.113]

TASK [install mariadb package (CentOS)] ******************************************
skipping: [192.168.56.108]
skipping: [192.168.56.115]
ok: [192.168.56.113]

TASK [Mariadb- Restarting/Enabling] **********************************************
fatal: [192.168.56.108]: FAILED! => {"changed": false, "msg": "Could not find the request
fatal: [192.168.56.115]: FAILED! => {"changed": false, "msg": "Could not find the request
changed: [192.168.56.113]

TASK [install mariadb package (Ubuntu)] ******************************************
skipping: [192.168.56.113]

PLAY RECAP ***********************************************************************
192.168.56.104             : ok=3    changed=0    unreachable=0    failed=0    skipped=1
192.168.56.106             : ok=3    changed=0    unreachable=0    failed=0    skipped=1
192.168.56.108             : ok=3    changed=0    unreachable=0    failed=1    skipped=1
192.168.56.113             : ok=4    changed=1    unreachable=0    failed=0    skipped=2
192.168.56.115             : ok=3    changed=0    unreachable=0    failed=1    skipped=1

Apostol@ApostolCN:~/sysad2_Apostol$ nano inventory.ini
Apostol@ApostolCN:~/sysad2_Apostol$ nano site.yml
Apostol@ApostolCN:~/sysad2_Apostol$ 
```

6. 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.

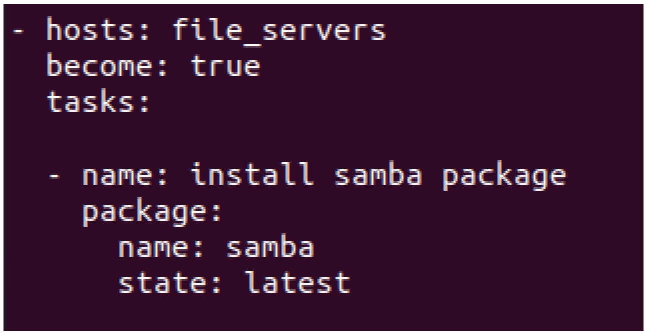
   Describe the output.



Apostol@vbox:~ — systemctl status mariadb

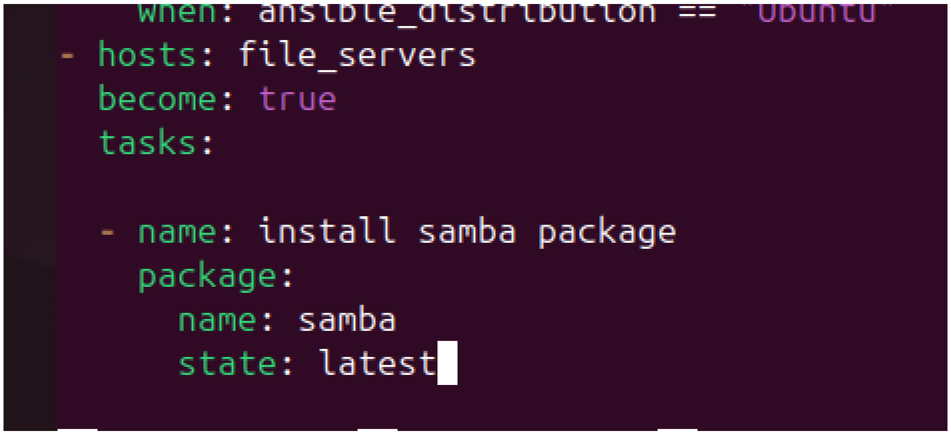
```
[Apostol@vbox ~]$ systemctl status mariadb
● mariadb.service - MariaDB 10.5 database server
     Loaded: loaded (/usr/lib/systemd/system/mariadb.service; enabled; preset: >
     Active: active (running) since Fri 2025-09-19 15:26:39 PST; 1min 49s ago
       Docs: man:mariadbd(8)
             https://mariadb.com/kb/en/library/systemd/
    Process: 10710 ExecStartPre=/usr/libexec/mariadb-check-socket (code=exited,>
    Process: 10733 ExecStartPre=/usr/libexec/mariadb-prepare-db-dir mariadb.ser>
    Process: 10784 ExecStartPost=/usr/libexec/mariadb-check-upgrade (code=exite>
  Main PID: 10768 (mariadbd)
     Status: "Taking your SQL requests now..."
      Tasks: 8 (limit: 19847)
     Memory: 66.8M (peak: 66.9M)
        CPU: 289ms
     CGroup: /system.slice/mariadb.service
             └─10768 /usr/libexec/mariadbd --basedir=/usr
```

7. 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
```

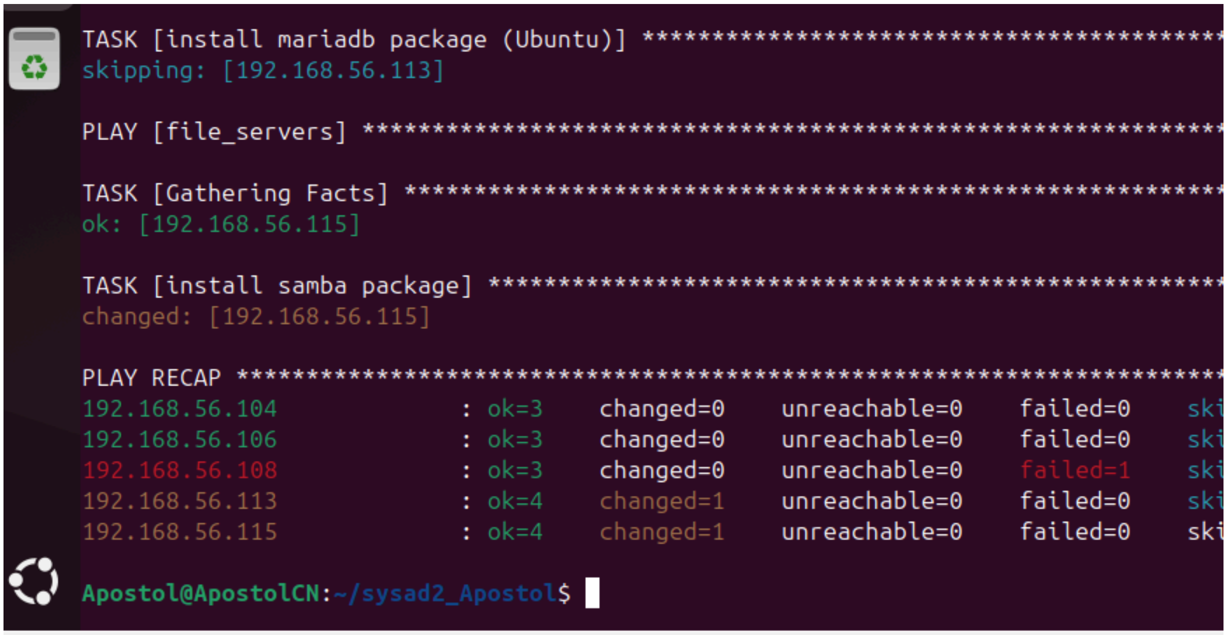
Output:



```
    when: ansible_distribution == "Ubuntu"
- hosts: file_servers
  become: true
  tasks:

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

Make sure to save the file and exit.

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



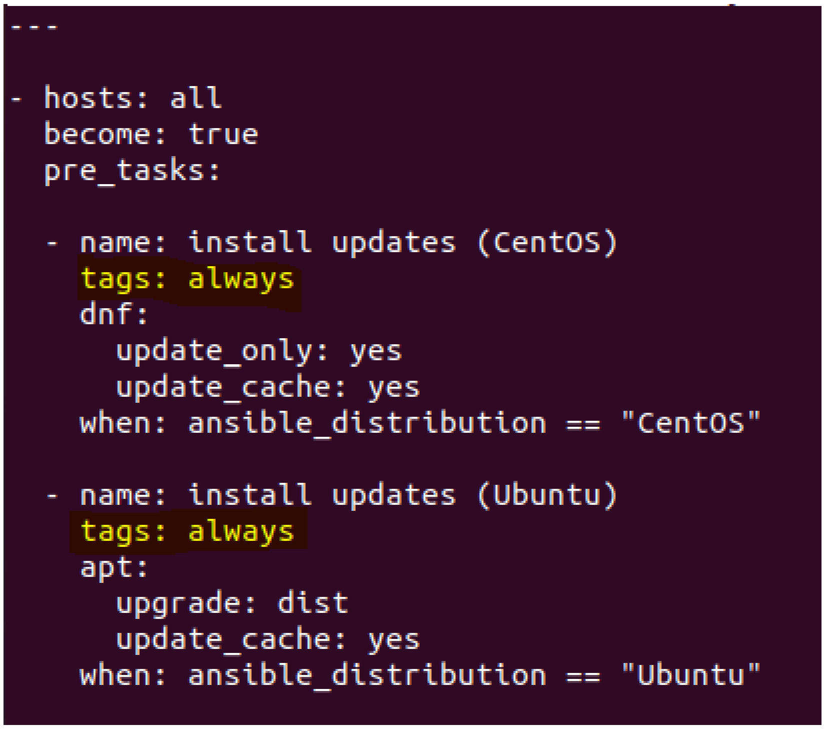
```
TASK [install mariadb package (Ubuntu)] ********************************************
skipping: [192.168.56.113]

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

TASK [Gathering Facts] *************************************************************
ok: [192.168.56.115]

TASK [install samba package] *******************************************************
changed: [192.168.56.115]

PLAY RECAP *************************************************************************
192.168.56.104             : ok=3    changed=0    unreachable=0    failed=0    ski
192.168.56.106             : ok=3    changed=0    unreachable=0    failed=0    ski
192.168.56.108             : ok=3    changed=0    unreachable=0    failed=1    ski
192.168.56.113             : ok=4    changed=1    unreachable=0    failed=0    ski
192.168.56.115             : ok=4    changed=1    unreachable=0    failed=0    ski

Apostol@ApostolCN:~/sysad2_Apostol$
```

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

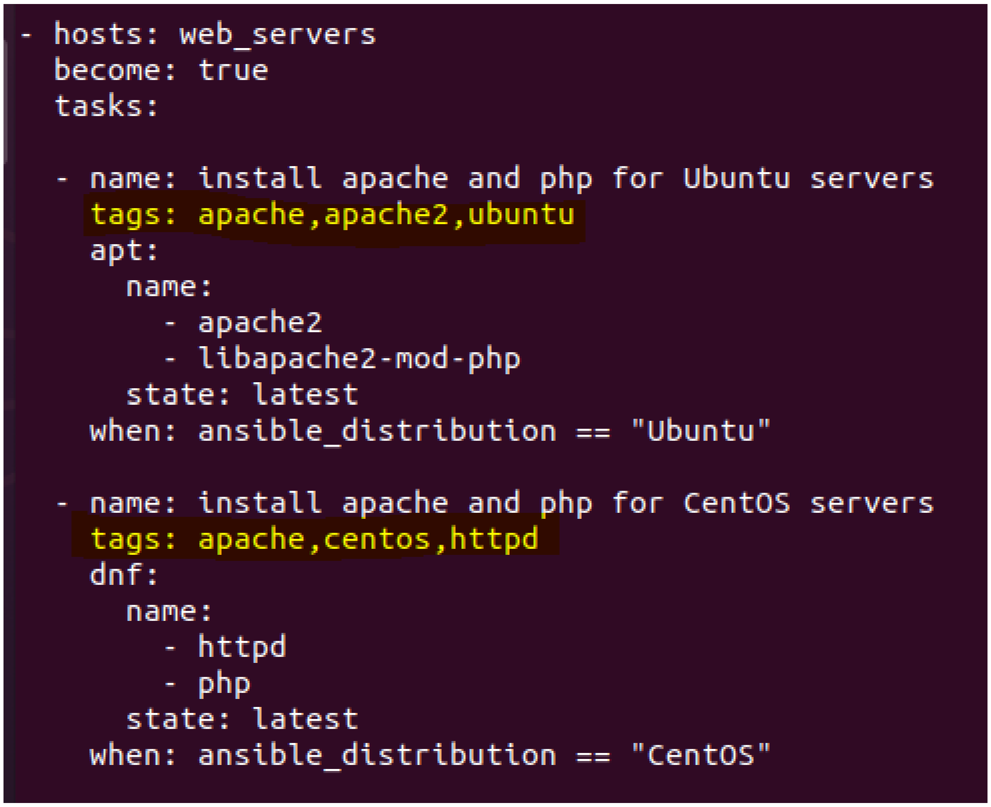
Task 2: Using Tags in running playbooks

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

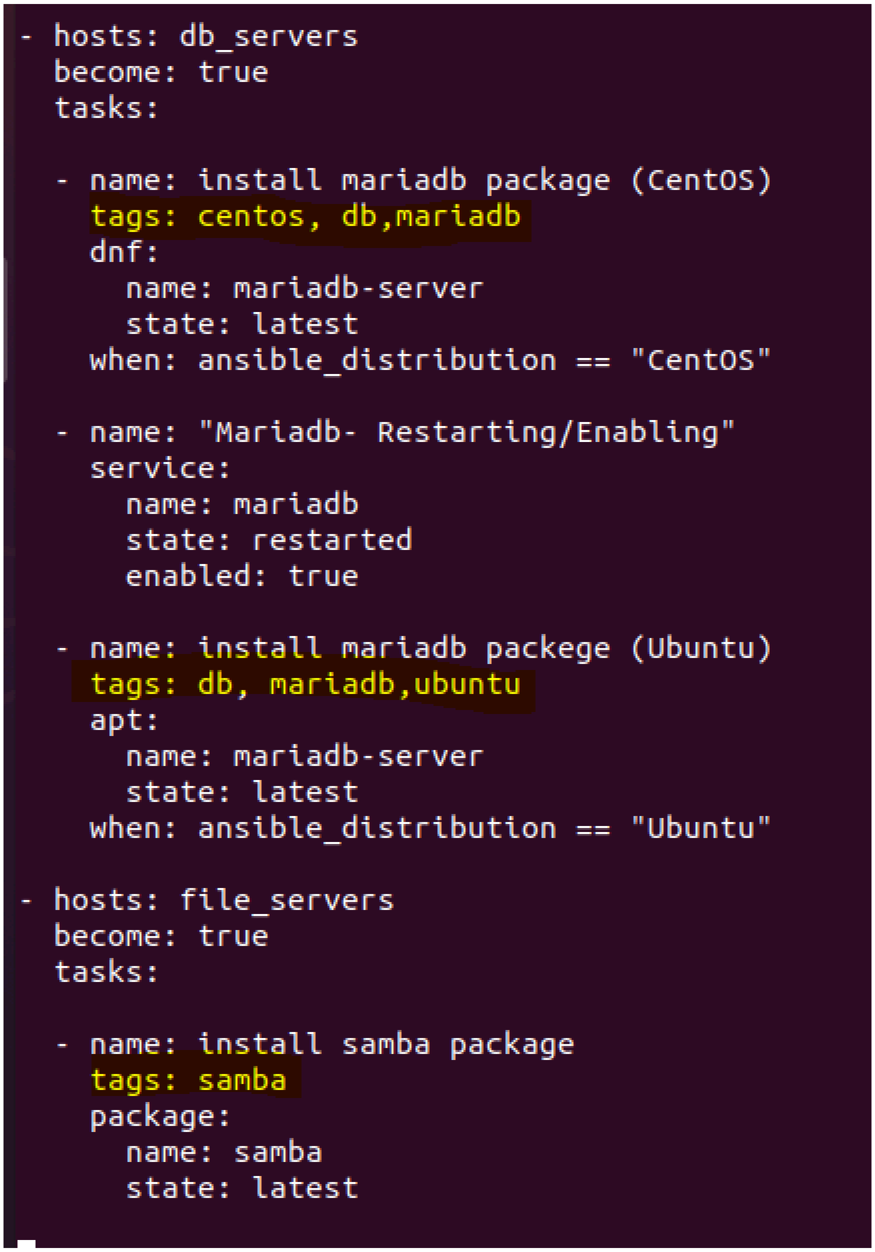
1. Edit the *site.yml* file. Add tags to the playbook. After the name, we can place the tags: *name_of_tag*. This is an arbitrary command, which means you can use any name for a tag.



```
---

- hosts: all
  become: true
  pre_tasks:

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

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



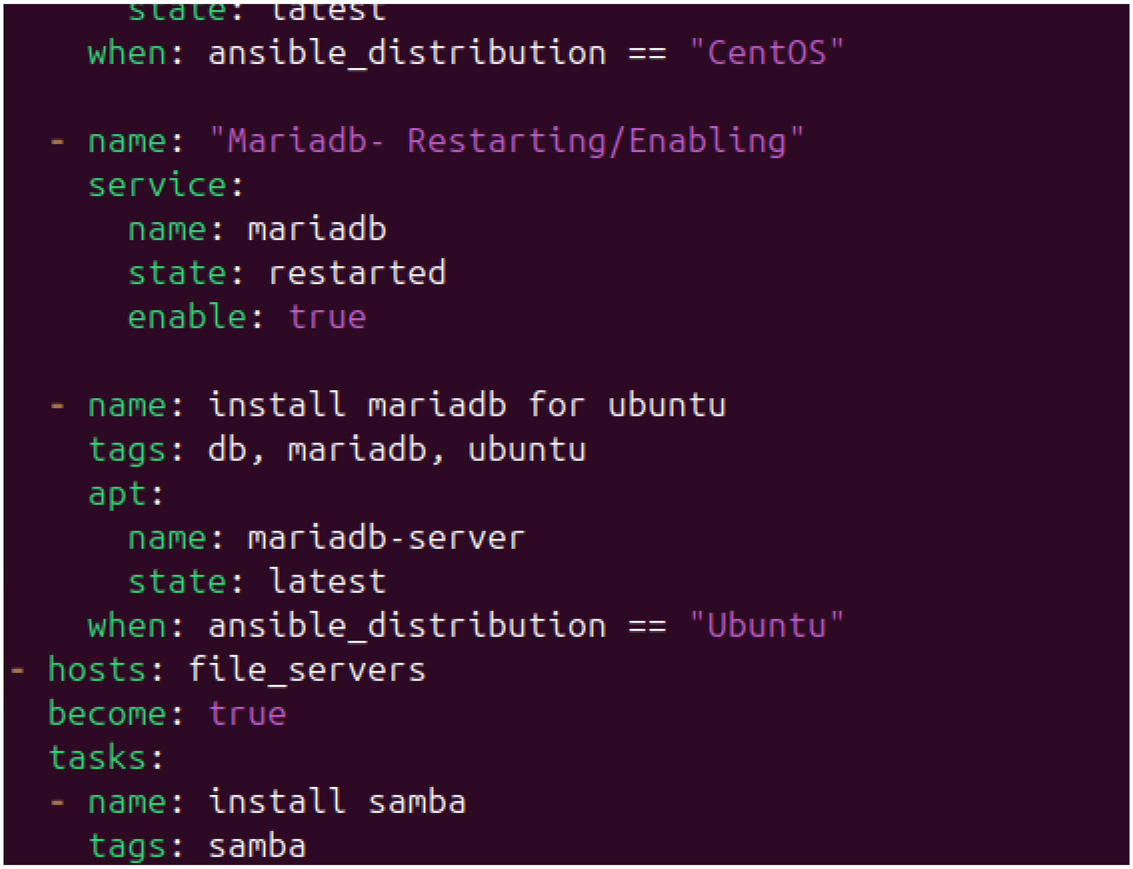
```
- hosts: web_servers
  become: true
  tasks:

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

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



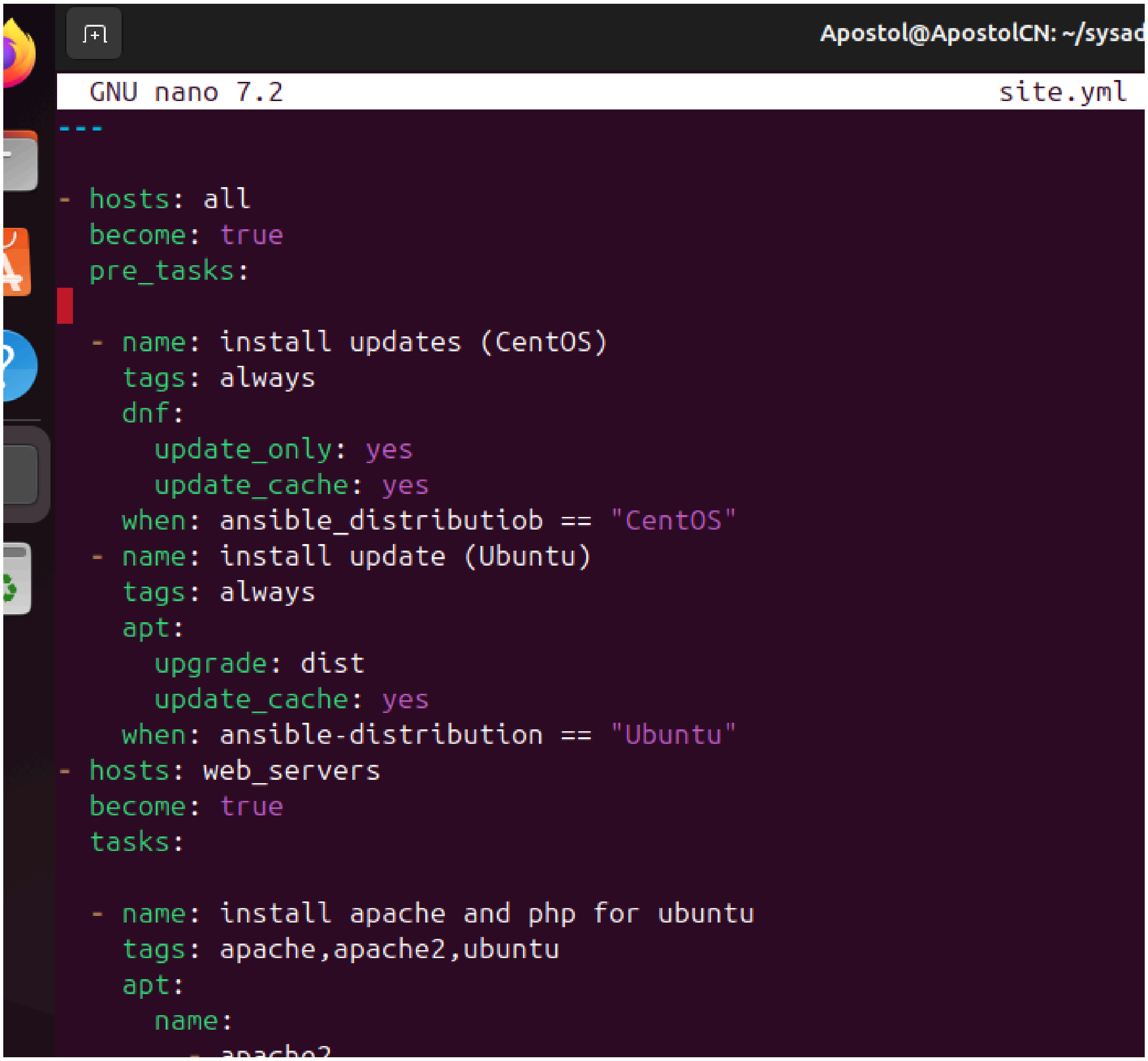
```
- hosts: db_servers
  become: true
  tasks:

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

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

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

- hosts: file_servers
  become: true
  tasks:

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

Make sure to save the file and exit.

Output:

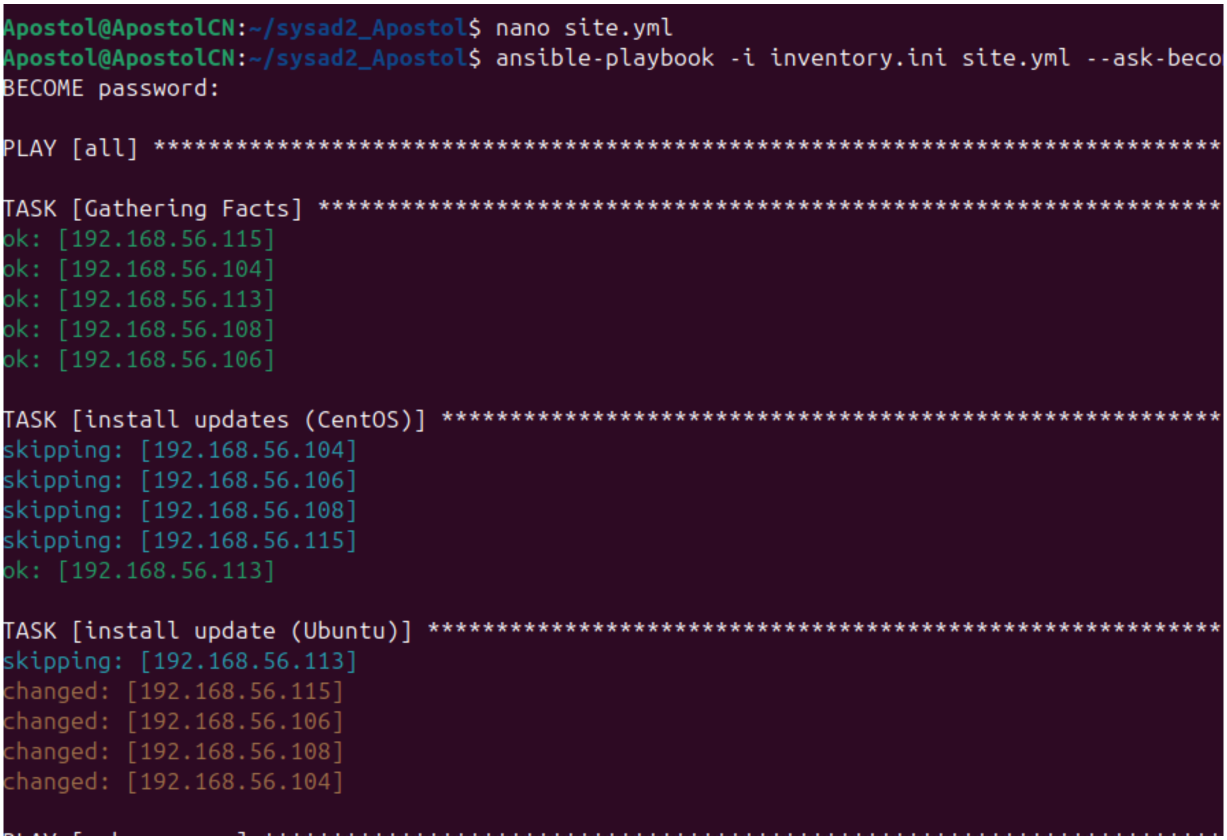


```
      state: latest
    when: ansible_distribution == "CentOS"

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

  - name: install mariadb for ubuntu
    tags: db, mariadb, ubuntu
    apt:
      name: mariadb-server
      state: latest
    when: ansible_distribution == "Ubuntu"
- hosts: file_servers
  become: true
  tasks:
  - name: install samba
    tags: samba
```

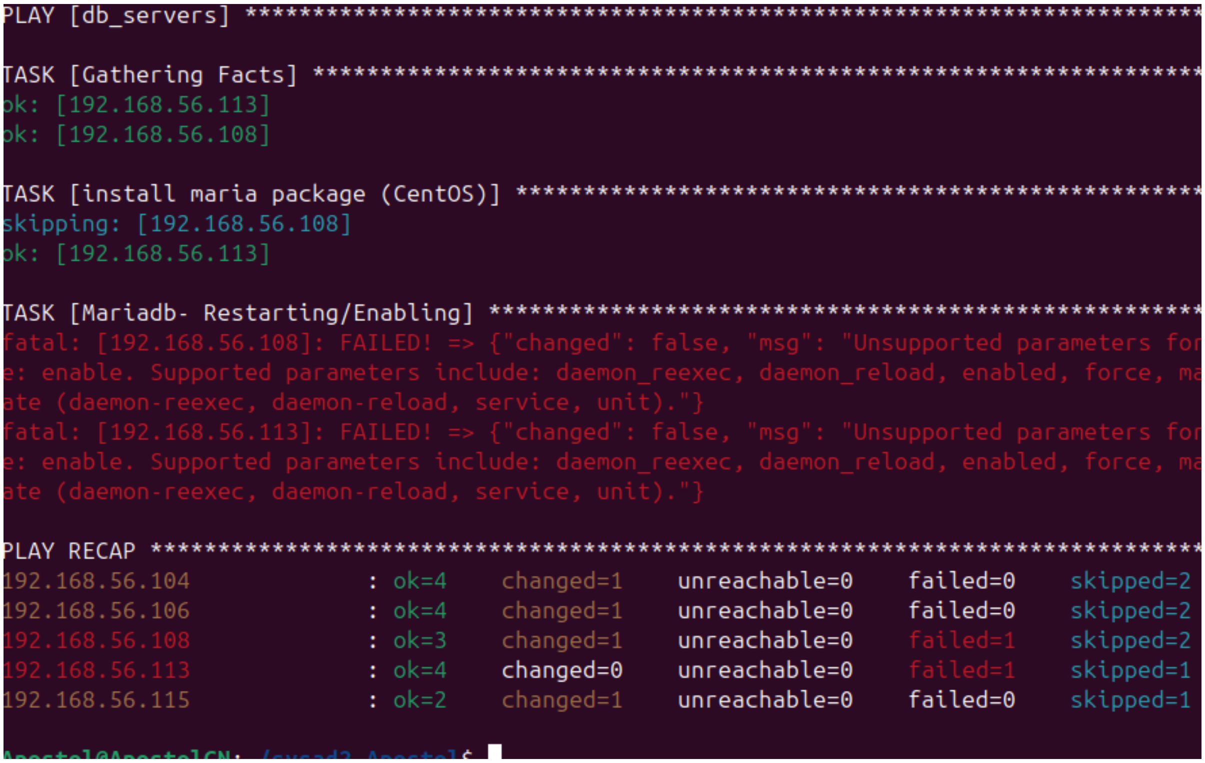


```
  GNU nano 7.2                                                      site.yml
---

- hosts: all
  become: true
  pre_tasks:

  - name: install updates (CentOS)
    tags: always
    dnf:
      update_only: yes
      update_cache: yes
    when: ansible_distributiob == "CentOS"
  - name: install update (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
    tags: apache,apache2,ubuntu
    apt:
      name:
        - apache2
```

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



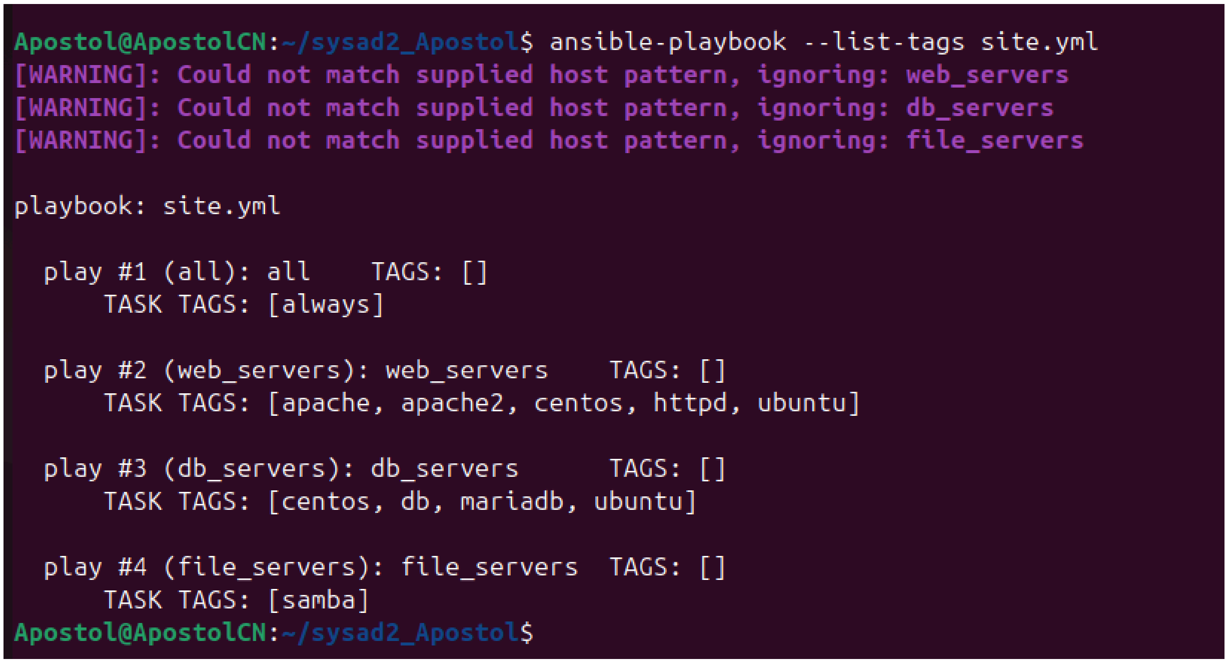
```
Apostol@ApostolCN:~/sysad2_Apostol$ nano site.yml
Apostol@ApostolCN:~/sysad2_Apostol$ ansible-playbook -i inventory.ini site.yml --ask-beco
BECOME password:

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

TASK [Gathering Facts] ******************************************************************
ok: [192.168.56.115]
ok: [192.168.56.104]
ok: [192.168.56.113]
ok: [192.168.56.108]
ok: [192.168.56.106]

TASK [install updates (CentOS)] *********************************************************
skipping: [192.168.56.104]
skipping: [192.168.56.106]
skipping: [192.168.56.108]
skipping: [192.168.56.115]
ok: [192.168.56.113]

TASK [install update (Ubuntu)] **********************************************************
skipping: [192.168.56.113]
changed: [192.168.56.115]
changed: [192.168.56.106]
changed: [192.168.56.108]
changed: [192.168.56.104]
```



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

TASK [Gathering Facts] *****************************************************************
ok: [192.168.56.113]
ok: [192.168.56.108]

TASK [install maria package (CentOS)] **************************************************
skipping: [192.168.56.108]
ok: [192.168.56.113]

TASK [Mariadb- Restarting/Enabling] ****************************************************
fatal: [192.168.56.108]: FAILED! => {"changed": false, "msg": "Unsupported parameters for
e: enable. Supported parameters include: daemon_reexec, daemon_reload, enabled, force, ma
ate (daemon-reexec, daemon-reload, service, unit)."}
fatal: [192.168.56.113]: FAILED! => {"changed": false, "msg": "Unsupported parameters for
e: enable. Supported parameters include: daemon_reexec, daemon_reload, enabled, force, ma
ate (daemon-reexec, daemon-reload, service, unit)."}

PLAY RECAP *****************************************************************************
192.168.56.104             : ok=4    changed=1    unreachable=0    failed=0    skipped=2
192.168.56.106             : ok=4    changed=1    unreachable=0    failed=0    skipped=2
192.168.56.108             : ok=3    changed=1    unreachable=0    failed=1    skipped=2
192.168.56.113             : ok=4    changed=0    unreachable=0    failed=1    skipped=1
192.168.56.115             : ok=2    changed=1    unreachable=0    failed=0    skipped=1

Apostol@ApostolCN:~/sysad2_Apostol$
```

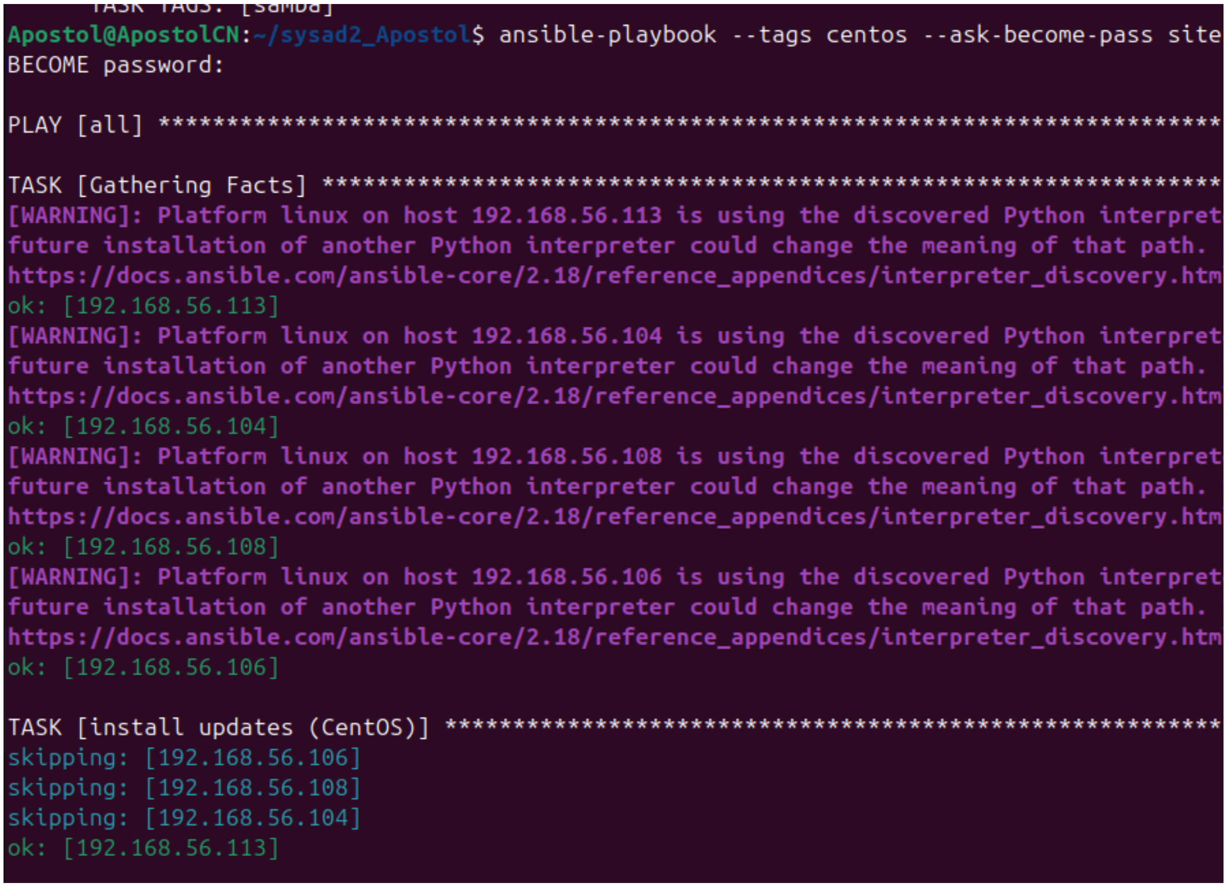
2. On the local machine, try to issue the following commands and describe each result:

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

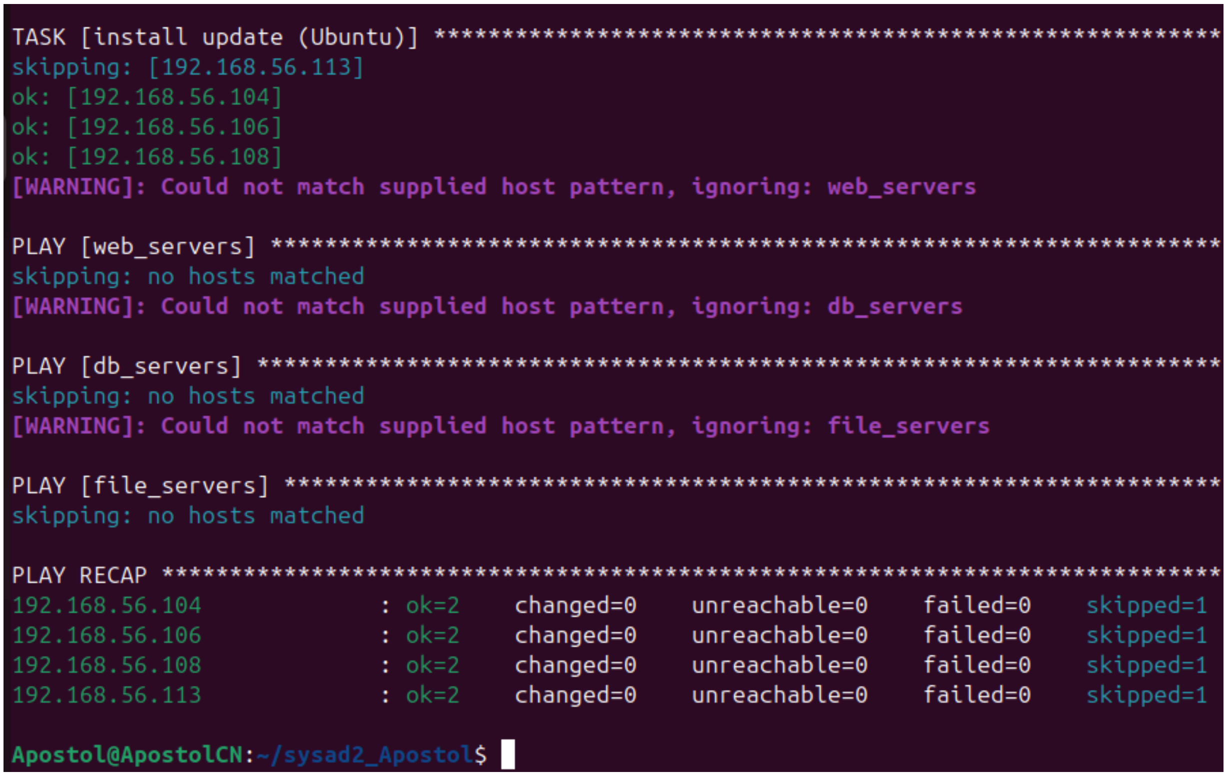


```
Apostol@ApostolCN:~/sysad2_Apostol$ ansible-playbook --list-tags site.yml
[WARNING]: Could not match supplied host pattern, ignoring: web_servers
[WARNING]: Could not match supplied host pattern, ignoring: db_servers
[WARNING]: Could not match supplied host pattern, ignoring: file_servers

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]
Apostol@ApostolCN:~/sysad2_Apostol$
```

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

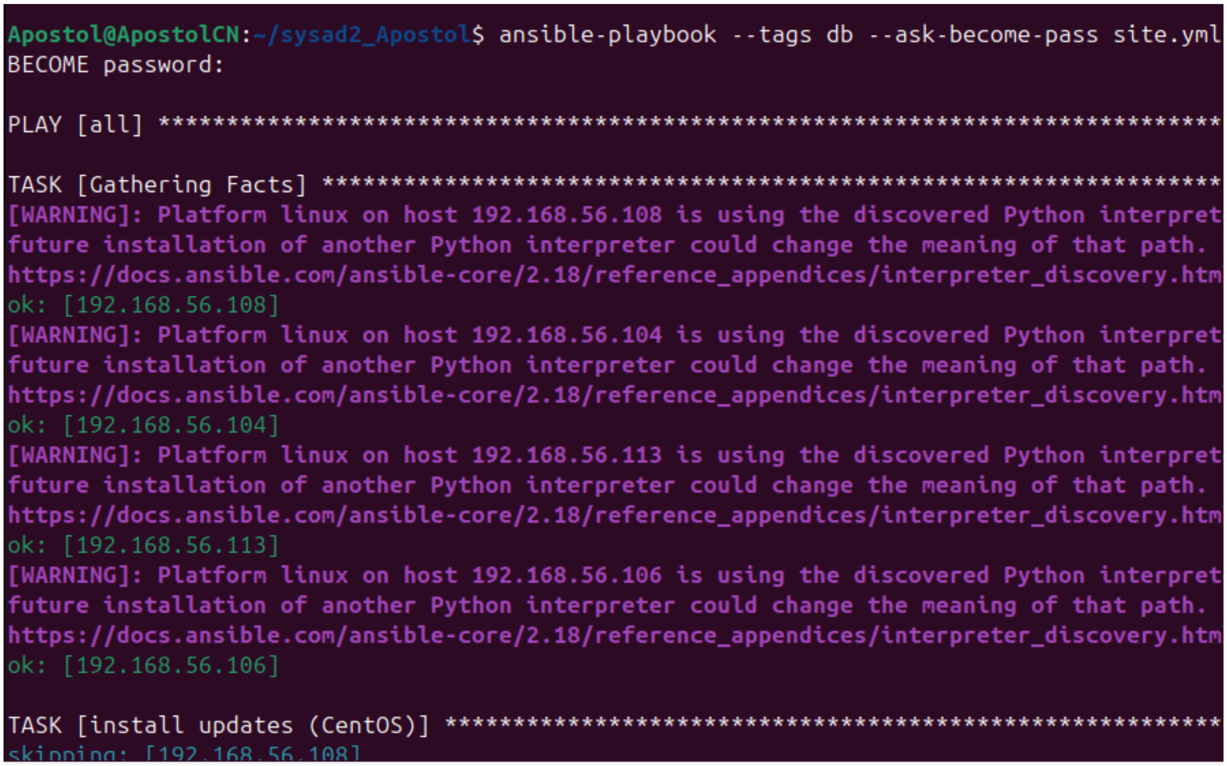


```
      TASK TAGS: [samba]
Apostol@ApostolCN:~/sysad2_Apostol$ ansible-playbook --tags centos --ask-become-pass site
BECOME password:

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

TASK [Gathering Facts] ****************************************************************
[WARNING]: Platform linux on host 192.168.56.113 is using the discovered Python interpret
future installation of another Python interpreter could change the meaning of that path.
https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.htm
ok: [192.168.56.113]
[WARNING]: Platform linux on host 192.168.56.104 is using the discovered Python interpret
future installation of another Python interpreter could change the meaning of that path.
https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.htm
ok: [192.168.56.104]
[WARNING]: Platform linux on host 192.168.56.108 is using the discovered Python interpret
future installation of another Python interpreter could change the meaning of that path.
https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.htm
ok: [192.168.56.108]
[WARNING]: Platform linux on host 192.168.56.106 is using the discovered Python interpret
future installation of another Python interpreter could change the meaning of that path.
https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.htm
ok: [192.168.56.106]

TASK [install updates (CentOS)] *******************************************************
skipping: [192.168.56.106]
skipping: [192.168.56.108]
skipping: [192.168.56.104]
ok: [192.168.56.113]
```

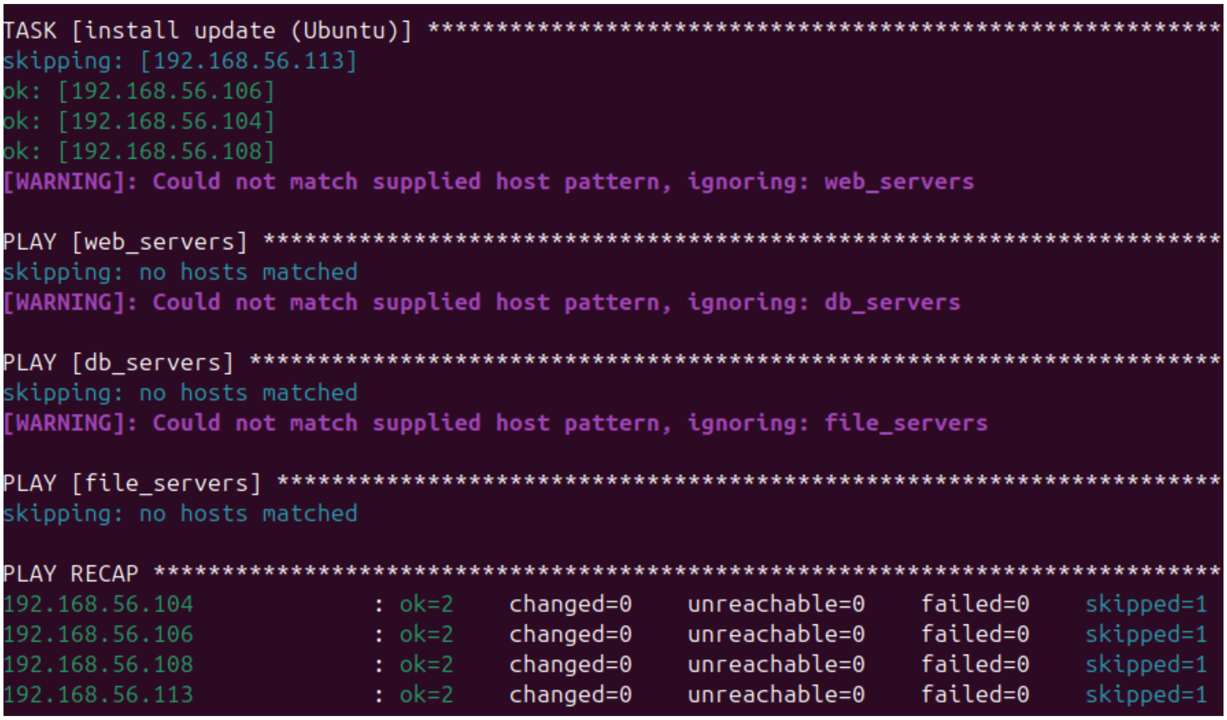


```
TASK [install update (Ubuntu)] **********************************************************
skipping: [192.168.56.113]
ok: [192.168.56.104]
ok: [192.168.56.106]
ok: [192.168.56.108]
[WARNING]: Could not match supplied host pattern, ignoring: web_servers

PLAY [web_servers] **********************************************************************
skipping: no hosts matched
[WARNING]: Could not match supplied host pattern, ignoring: db_servers

PLAY [db_servers] ***********************************************************************
skipping: no hosts matched
[WARNING]: Could not match supplied host pattern, ignoring: file_servers

PLAY [file_servers] *********************************************************************
skipping: no hosts matched

PLAY RECAP ******************************************************************************
192.168.56.104             : ok=2    changed=0    unreachable=0    failed=0    skipped=1
192.168.56.106             : ok=2    changed=0    unreachable=0    failed=0    skipped=1
192.168.56.108             : ok=2    changed=0    unreachable=0    failed=0    skipped=1
192.168.56.113             : ok=2    changed=0    unreachable=0    failed=0    skipped=1

Apostol@ApostolCN:~/sysad2_Apostol$ 
```

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

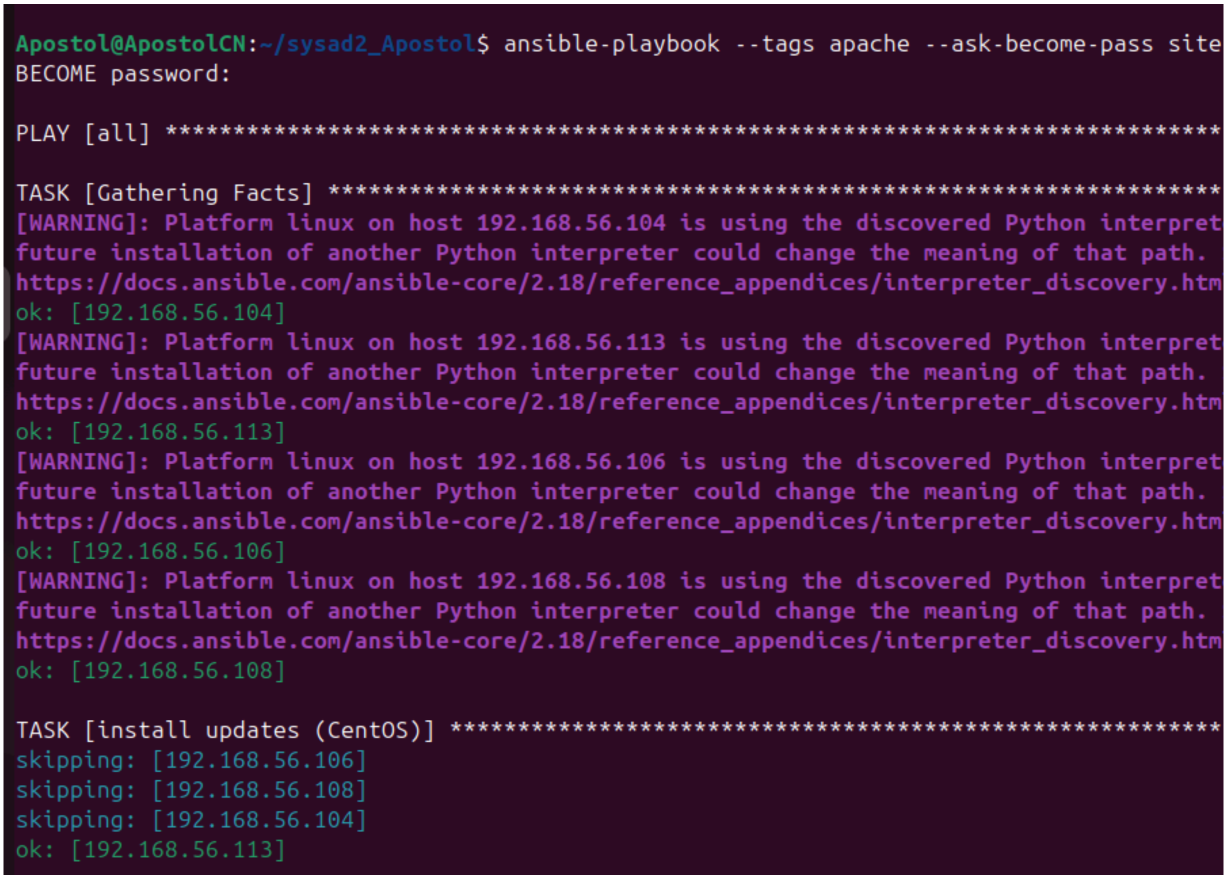


```
Apostol@ApostolCN:~/sysad2_Apostol$ ansible-playbook --tags db --ask-become-pass site.yml
BECOME password:

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

TASK [Gathering Facts] ******************************************************************
[WARNING]: Platform linux on host 192.168.56.108 is using the discovered Python interpret
future installation of another Python interpreter could change the meaning of that path.
https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.htm
ok: [192.168.56.108]
[WARNING]: Platform linux on host 192.168.56.104 is using the discovered Python interpret
future installation of another Python interpreter could change the meaning of that path.
https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.htm
ok: [192.168.56.104]
[WARNING]: Platform linux on host 192.168.56.113 is using the discovered Python interpret
future installation of another Python interpreter could change the meaning of that path.
https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.htm
ok: [192.168.56.113]
[WARNING]: Platform linux on host 192.168.56.106 is using the discovered Python interpret
future installation of another Python interpreter could change the meaning of that path.
https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.htm
ok: [192.168.56.106]

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

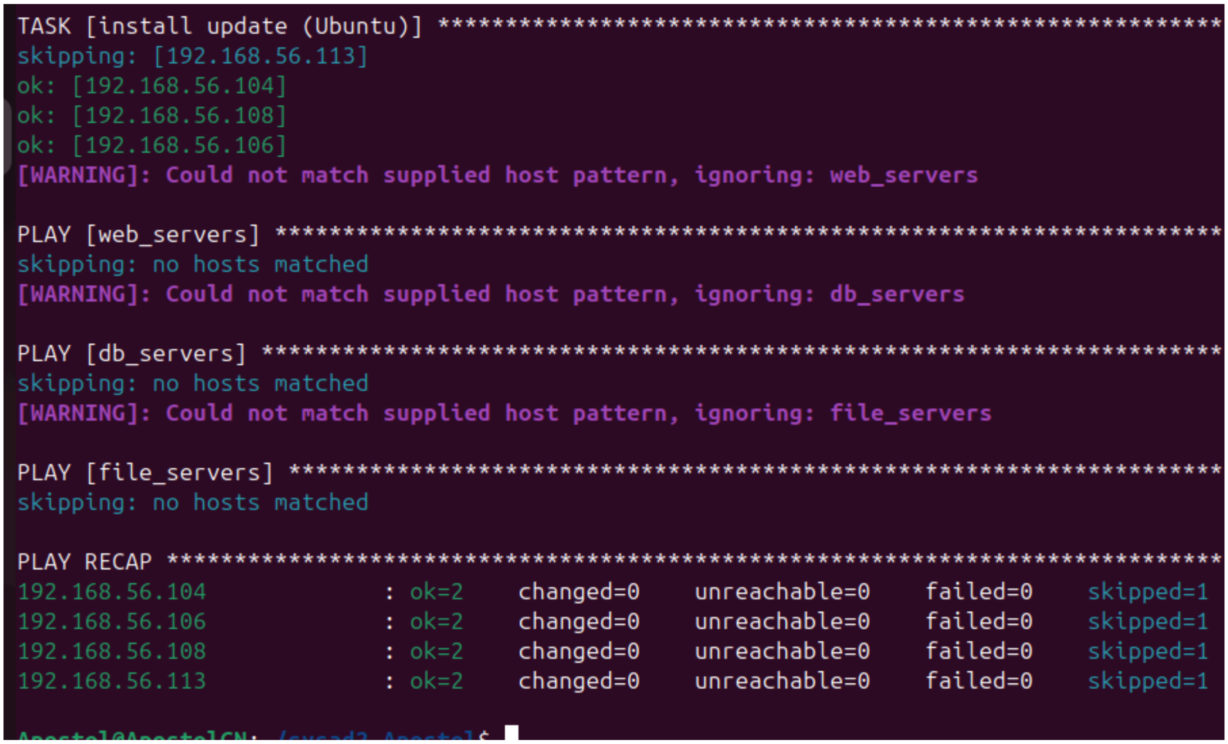


```
TASK [install update (Ubuntu)] **********************************************************
skipping: [192.168.56.113]
ok: [192.168.56.106]
ok: [192.168.56.104]
ok: [192.168.56.108]
[WARNING]: Could not match supplied host pattern, ignoring: web_servers

PLAY [web_servers] *********************************************************************
skipping: no hosts matched
[WARNING]: Could not match supplied host pattern, ignoring: db_servers

PLAY [db_servers] **********************************************************************
skipping: no hosts matched
[WARNING]: Could not match supplied host pattern, ignoring: file_servers

PLAY [file_servers] ********************************************************************
skipping: no hosts matched

PLAY RECAP ******************************************************************************
192.168.56.104             : ok=2    changed=0    unreachable=0    failed=0    skipped=1
192.168.56.106             : ok=2    changed=0    unreachable=0    failed=0    skipped=1
192.168.56.108             : ok=2    changed=0    unreachable=0    failed=0    skipped=1
192.168.56.113             : ok=2    changed=0    unreachable=0    failed=0    skipped=1
```

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

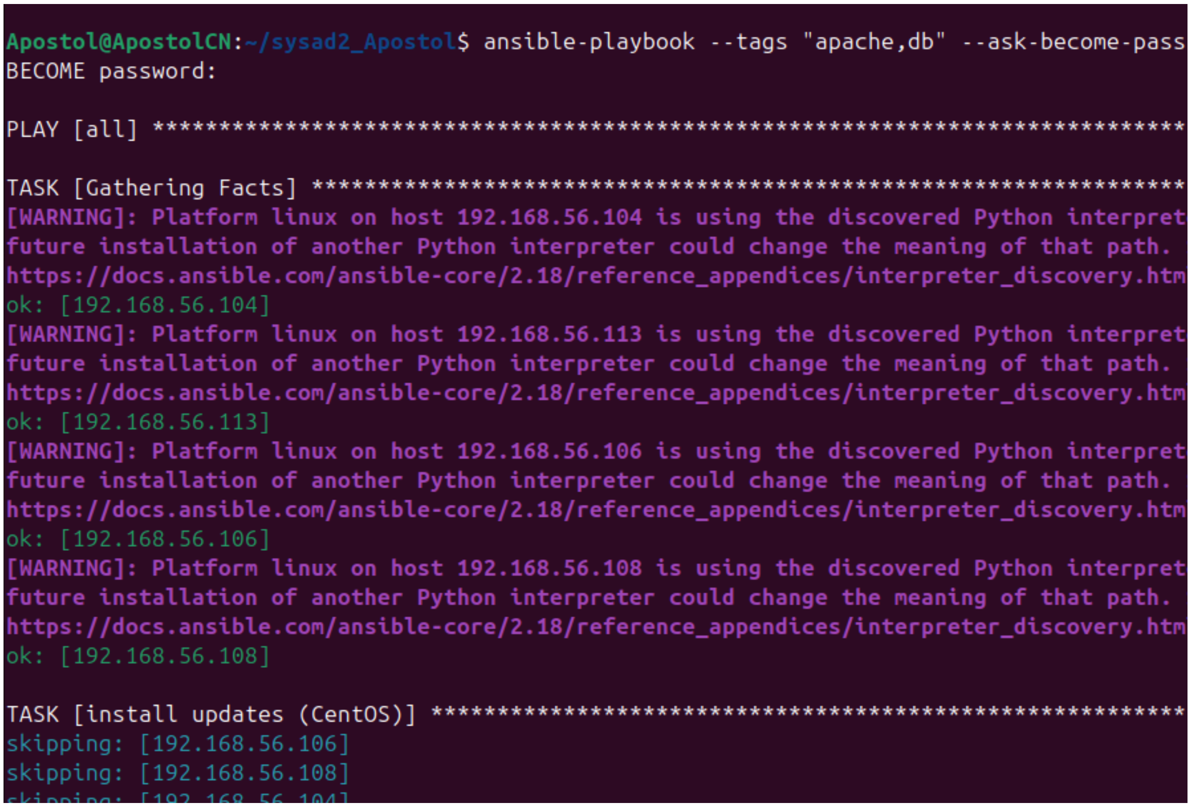


```
Apostol@ApostolCN:~/sysad2_Apostol$ ansible-playbook --tags apache --ask-become-pass site
BECOME password:

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

TASK [Gathering Facts] *****************************************************************
[WARNING]: Platform linux on host 192.168.56.104 is using the discovered Python interpret
future installation of another Python interpreter could change the meaning of that path.
https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.htm
ok: [192.168.56.104]
[WARNING]: Platform linux on host 192.168.56.113 is using the discovered Python interpret
future installation of another Python interpreter could change the meaning of that path.
https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.htm
ok: [192.168.56.113]
[WARNING]: Platform linux on host 192.168.56.106 is using the discovered Python interpret
future installation of another Python interpreter could change the meaning of that path.
https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.htm
ok: [192.168.56.106]
[WARNING]: Platform linux on host 192.168.56.108 is using the discovered Python interpret
future installation of another Python interpreter could change the meaning of that path.
https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.htm
ok: [192.168.56.108]

TASK [install updates (CentOS)] ********************************************************
skipping: [192.168.56.106]
skipping: [192.168.56.108]
skipping: [192.168.56.104]
ok: [192.168.56.113]
```

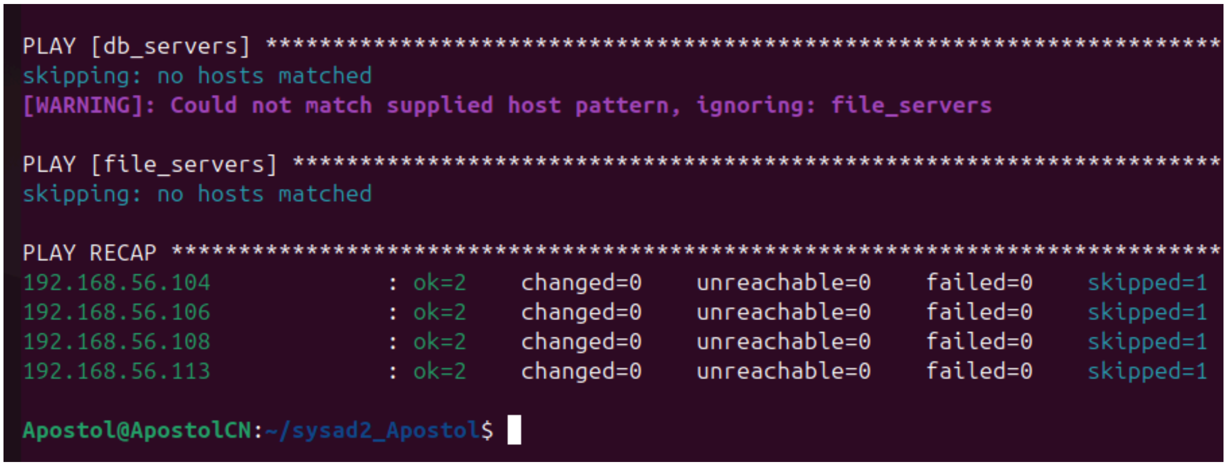


```
TASK [install update (Ubuntu)] ************************************************************
skipping: [192.168.56.113]
ok: [192.168.56.104]
ok: [192.168.56.108]
ok: [192.168.56.106]
[WARNING]: Could not match supplied host pattern, ignoring: web_servers

PLAY [web_servers] ************************************************************************
skipping: no hosts matched
[WARNING]: Could not match supplied host pattern, ignoring: db_servers

PLAY [db_servers] *************************************************************************
skipping: no hosts matched
[WARNING]: Could not match supplied host pattern, ignoring: file_servers

PLAY [file_servers] ***********************************************************************
skipping: no hosts matched

PLAY RECAP ********************************************************************************
192.168.56.104             : ok=2    changed=0    unreachable=0    failed=0    skipped=1
192.168.56.106             : ok=2    changed=0    unreachable=0    failed=0    skipped=1
192.168.56.108             : ok=2    changed=0    unreachable=0    failed=0    skipped=1
192.168.56.113             : ok=2    changed=0    unreachable=0    failed=0    skipped=1

Apostol@ApostolCN:~/sysad2_Apostol$
```

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



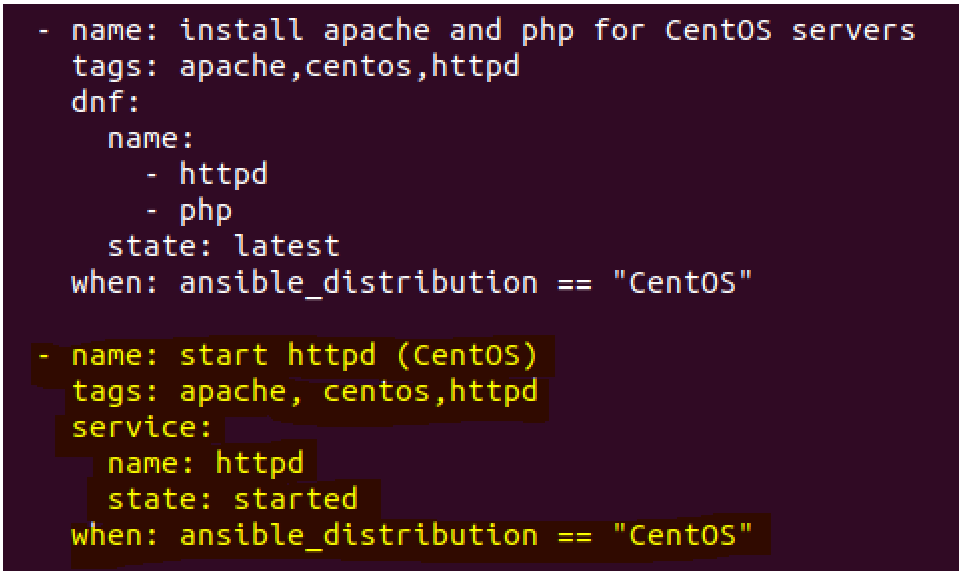
```
Apostol@ApostolCN:~/sysad2_Apostol$ ansible-playbook --tags "apache,db" --ask-become-pass
BECOME password:

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

TASK [Gathering Facts] ******************************************************************
[WARNING]: Platform linux on host 192.168.56.104 is using the discovered Python interpret
future installation of another Python interpreter could change the meaning of that path.
https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.htm
ok: [192.168.56.104]
[WARNING]: Platform linux on host 192.168.56.113 is using the discovered Python interpret
future installation of another Python interpreter could change the meaning of that path.
https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.htm
ok: [192.168.56.113]
[WARNING]: Platform linux on host 192.168.56.106 is using the discovered Python interpret
future installation of another Python interpreter could change the meaning of that path.
https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.htm
ok: [192.168.56.106]
[WARNING]: Platform linux on host 192.168.56.108 is using the discovered Python interpret
future installation of another Python interpreter could change the meaning of that path.
https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.htm
ok: [192.168.56.108]

TASK [install updates (CentOS)] *********************************************************
skipping: [192.168.56.106]
skipping: [192.168.56.108]
skipping: [192.168.56.104]
```



```
PLAY [db_servers] ***************************************************************
skipping: no hosts matched
[WARNING]: Could not match supplied host pattern, ignoring: file_servers

PLAY [file_servers] *************************************************************
skipping: no hosts matched

PLAY RECAP **********************************************************************
192.168.56.104             : ok=2    changed=0    unreachable=0    failed=0    skipped=1
192.168.56.106             : ok=2    changed=0    unreachable=0    failed=0    skipped=1
192.168.56.108             : ok=2    changed=0    unreachable=0    failed=0    skipped=1
192.168.56.113             : ok=2    changed=0    unreachable=0    failed=0    skipped=1

Apostol@ApostolCN:~/sysad2_Apostol$ 
```

Task 3: Managing Services

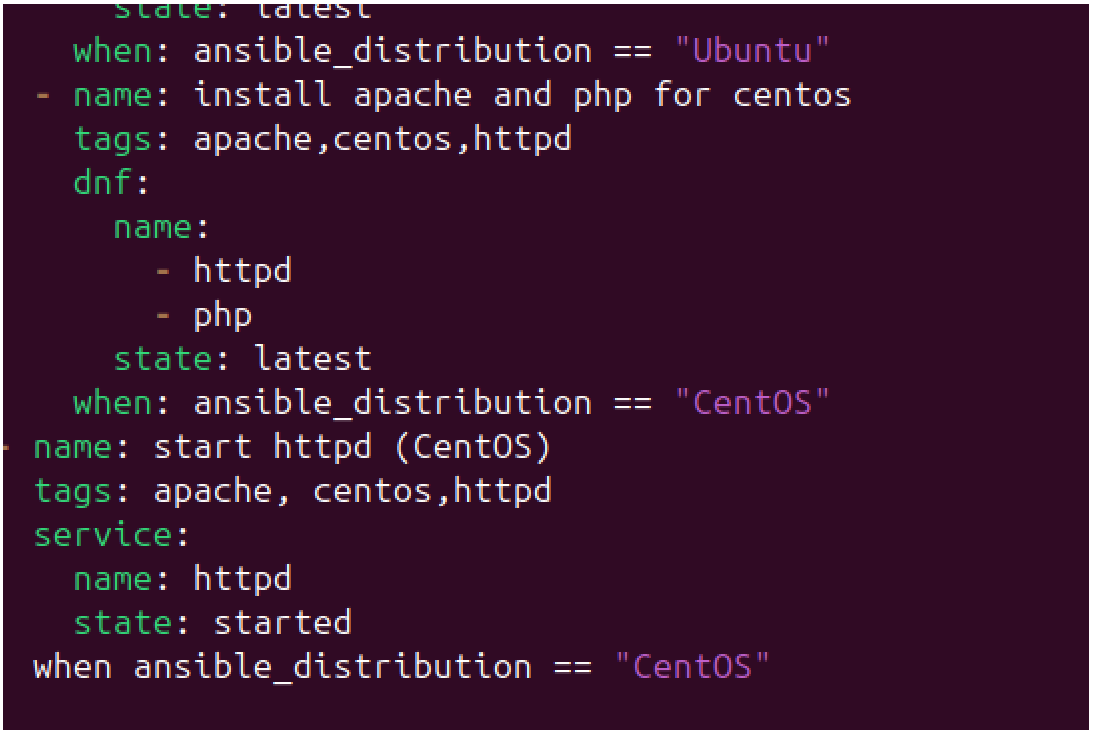
1. Edit the file site.yml and add a play that will automatically start the httpd on CentOS server.



```
- 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"
```

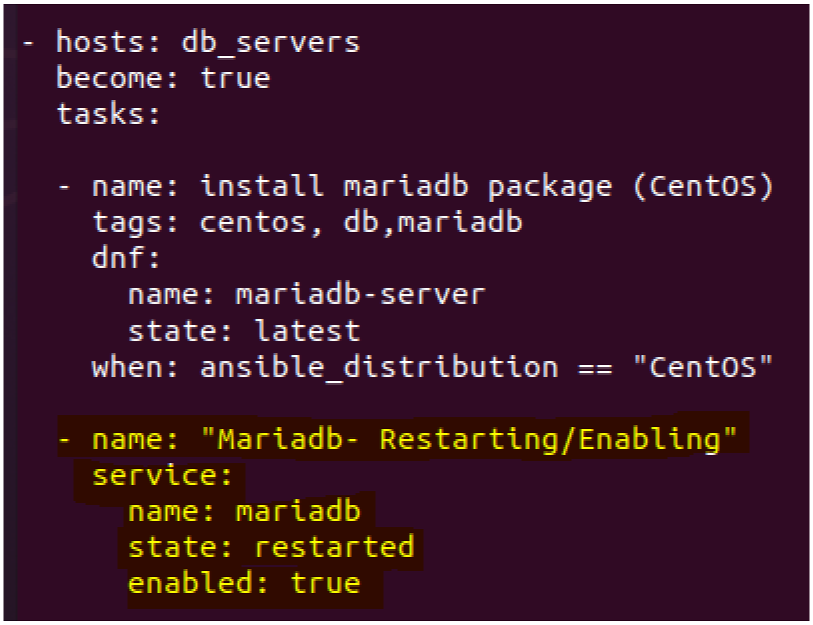
Figure 3.1.1

Make sure to save the file and exit.



```
      state: latest
    when: ansible_distribution == "Ubuntu"
  - name: install apache and php for centos
    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"
```

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

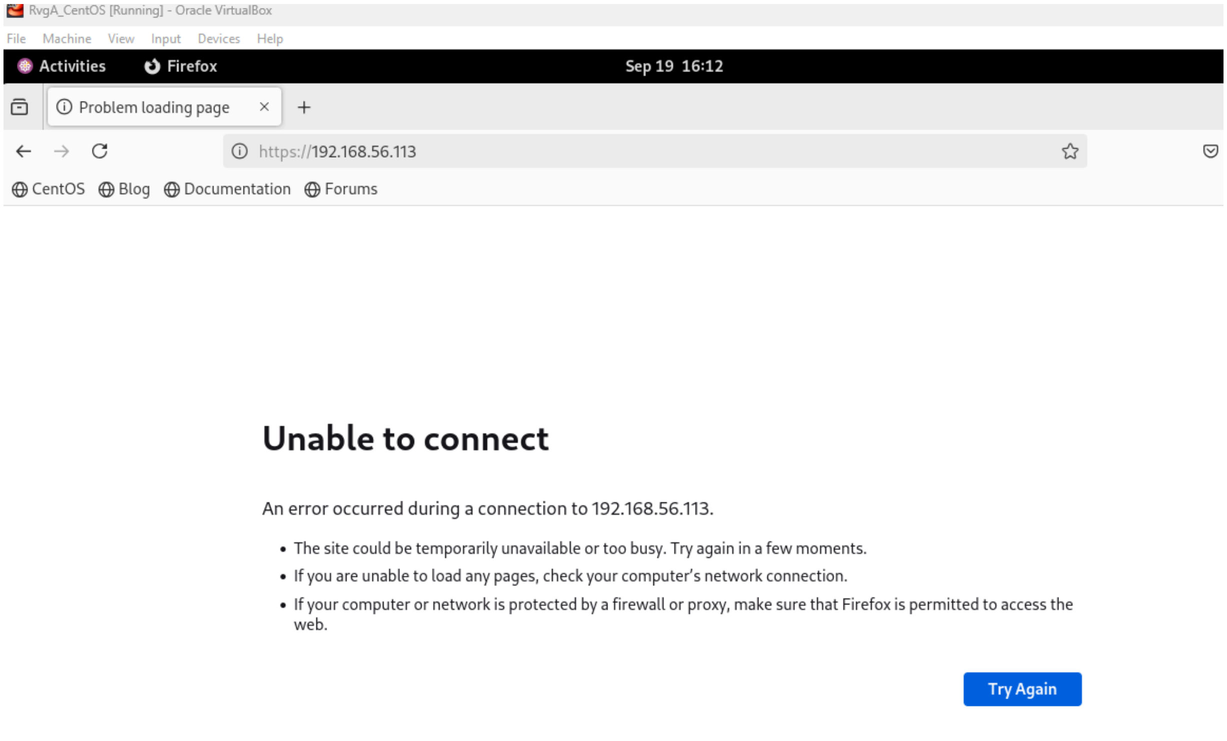


```
- hosts: db_servers
  become: true
  tasks:

  - 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

An error occurred during a connection to 192.168.56.113.

- 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.

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.

Reflections:

Answer the following:

1. **What is the importance of putting our remote servers into groups?**
   - Grouping remote servers is important for simplifying management by applying consistent configurations, improving security through role-based access controls, and enhancing scalability by facilitating load balancing and resource allocation.
2. **What is the importance of tags in playbooks?**
   - Tags in playbooks provide control over task execution, improve organization, and enhance flexibility.
3. **Why do think some services need to be managed automatically in playbooks?**
   - Services require automated playbook management for **efficiency and speed**, as automation reduces manual effort and allows for faster resolution of repetitive tasks.