

Final Exam	
Course & Sec: CPE31S4 - CPE212	Date: Nov 16, 2025
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Tools Needed:	
1. VM with Ubuntu, CentOS and Ansible installed	
2. Web browser	
Procedure:	
1. Create a repository and label it as "Final_Exam_Surname"	
2. Clone your new repository in your VM	
3. Create an Ansible playbook that does the following with an input of a config.yaml file and structure inventory file.	
3.1 Install and configure one enterprise service that can be installed in Debian and Centos servers	
3.2 Install and configure one monitoring tool that can be installed in Debian and Centos servers (if it is a stack there should be option of different host)	
4.4 Change Motd as "Ansible Managed by <username>"	
4. Push and commit your files in GitHub	
5. Make sure to show evidence of input (codes) process (codes successfully running) and output (evidence of installation)	
5. For your final exam to be counted, please paste your repository link as an answer in this exam.	
Note: Extra points if you will implement the said services via containerization.	
https://github.com/Patrickcruz14/Final_Exam_Cruz	

github.com/Patrickcruz14/Final_Exam_Cruz

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Code

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config.yaml	Final Exam	1 minute ago
inventory.ini	Final Exam	1 minute ago
playbook.yaml	Final Exam	1 minute ago

README

Final_Exam_Cruz

About

No description, website, or topics provided.

Readme Activity 0 stars 0 watching 0 forks

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```
patrick@Workstation:~/Final_Exam_Cruz$ ansible-playbook -i inventory.ini playbook.k.yaml -K
BECOME password:

PLAY [Configure Enterprise Services with Docker] *****

TASK [Gathering Facts] *****
[WARNING]: Platform linux on host 192.168.64.5 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: [192.168.64.5]
[WARNING]: Platform linux on host 192.168.64.13 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: [192.168.64.13]
[WARNING]: Platform linux on host 192.168.64.15 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
```

```
TASK [Install required packages for Docker (Debian/Ubuntu)] *****
skipping: [192.168.64.12]
ok: [192.168.64.13]
ok: [192.168.64.5]
ok: [192.168.64.15]

TASK [Install required packages for Docker (CentOS)] *****
skipping: [192.168.64.5]
skipping: [192.168.64.13]
skipping: [192.168.64.15]
ok: [192.168.64.12]

TASK [Create keyrings directory (Debian/Ubuntu)] *****
skipping: [192.168.64.12]
ok: [192.168.64.5]
ok: [192.168.64.13]
ok: [192.168.64.15]

TASK [Add Docker GPG key (Debian/Ubuntu)] *****
skipping: [192.168.64.12]
ok: [192.168.64.15]
ok: [192.168.64.5]
ok: [192.168.64.13]
```

```
TASK [Add Docker repository (Debian/Ubuntu)] *****
skipping: [192.168.64.12]
ok: [192.168.64.5]
ok: [192.168.64.13]
ok: [192.168.64.15]

TASK [Update apt cache after adding Docker repo] *****
skipping: [192.168.64.12]
changed: [192.168.64.5]
changed: [192.168.64.13]
changed: [192.168.64.15]

TASK [Add Docker repository (CentOS)] *****
skipping: [192.168.64.5]
skipping: [192.168.64.13]
skipping: [192.168.64.15]
ok: [192.168.64.12]

TASK [Install Docker (Debian/Ubuntu)] *****
skipping: [192.168.64.12]
ok: [192.168.64.5]
ok: [192.168.64.13]
ok: [192.168.64.15]
```

```
TASK [Add Docker repository (CentOS)] *****
skipping: [192.168.64.5]
skipping: [192.168.64.13]
skipping: [192.168.64.15]
ok: [192.168.64.12]

TASK [Install Docker (Debian/Ubuntu)] *****
skipping: [192.168.64.12]
ok: [192.168.64.5]
ok: [192.168.64.13]
ok: [192.168.64.15]

TASK [Install Docker (CentOS)] *****
skipping: [192.168.64.5]
skipping: [192.168.64.13]
skipping: [192.168.64.15]
ok: [192.168.64.12]

TASK [Start and enable Docker] *****
ok: [192.168.64.15]
ok: [192.168.64.13]
ok: [192.168.64.5]
ok: [192.168.64.12]
```

```
TASK [Install Docker (CentOS)] *****
skipping: [192.168.64.5]
skipping: [192.168.64.13]
skipping: [192.168.64.15]
ok: [192.168.64.12]

TASK [Start and enable Docker] *****
ok: [192.168.64.15]
ok: [192.168.64.13]
ok: [192.168.64.5]
ok: [192.168.64.12]

TASK [Install Python3 pip] *****
ok: [192.168.64.5]
ok: [192.168.64.13]
ok: [192.168.64.12]
ok: [192.168.64.15]

TASK [Install Docker Python module (Debian/Ubuntu)] *****
skipping: [192.168.64.12]
changed: [192.168.64.13]
changed: [192.168.64.5]
```

```

TASK [Install Docker Python module (CentOS)] *****
skipping: [192.168.64.5]
skipping: [192.168.64.13]
skipping: [192.168.64.15]
ok: [192.168.64.12]

TASK [Run Apache container] *****
ok: [192.168.64.12]
changed: [192.168.64.13]
changed: [192.168.64.5]
changed: [192.168.64.15]

TASK [Run PostgreSQL container] *****
ok: [192.168.64.12]
changed: [192.168.64.15]
changed: [192.168.64.13]
changed: [192.168.64.5]

TASK [Run Node Exporter container] *****
ok: [192.168.64.12]
changed: [192.168.64.13]
changed: [192.168.64.15]
changed: [192.168.64.5]

```

```

TASK [Update MOTD] *****
ok: [192.168.64.15]
ok: [192.168.64.13]
ok: [192.168.64.5]
ok: [192.168.64.12]

PLAY RECAP *****
192.168.64.12 : ok=11 changed=0 unreachable=0 failed=0 s
kipped=7 rescued=0 ignored=0
192.168.64.13 : ok=14 changed=5 unreachable=0 failed=0 s
kipped=4 rescued=0 ignored=0
192.168.64.15 : ok=14 changed=5 unreachable=0 failed=0 s
kipped=4 rescued=0 ignored=0
192.168.64.5 : ok=14 changed=5 unreachable=0 failed=0 s
kipped=4 rescued=0 ignored=0

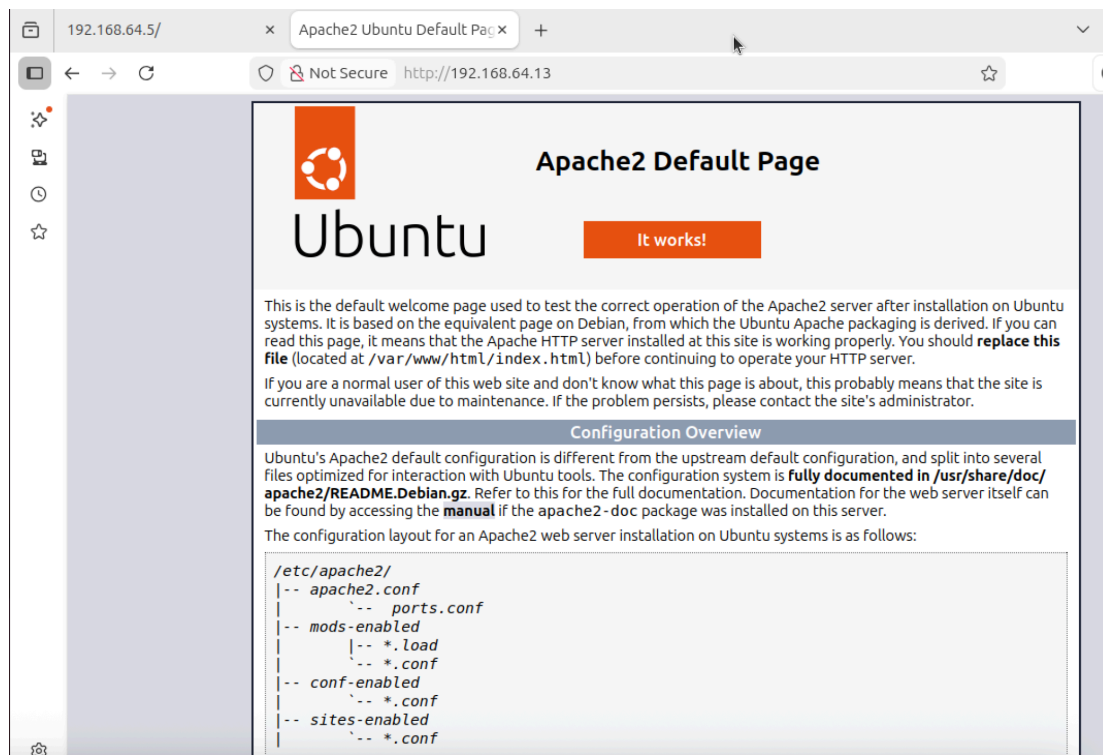
```

```

enterprise_db=# \c
enterprise_db=# CREATE TABLE test_table (
    id SERIAL PRIMARY KEY,
    name VARCHAR(100),
    created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP
);
CREATE TABLE
enterprise_db=# INSERT INTO test_table (name) VALUES ('Ansible Test'), ('Docker
Test');
INSERT 0 2
enterprise_db=# SELECT * FROM test_table;
 id |      name      |      created_at
-----+-----+-----
  1 | Ansible Test   | 2025-11-16 05:39:03.681784
  2 | Docker Test    | 2025-11-16 05:39:03.681784
(2 rows)

enterprise_db=# \dt
      List of relations
Schema |      Name      | Type  | Owner
-----+-----+-----+-----
public | test_table     | table | admin
(1 row)

```



192.168.64.5/ Apache2 Ubuntu Default Page x +

Not Secure http://192.168.64.13

Apache2 Default Page

Ubuntu

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should **replace this file** (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.

Configuration Overview

Ubuntu's Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Ubuntu tools. The configuration system is **fully documented in `/usr/share/doc/apache2/README.Debian.gz`**. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the **manual** if the `apache2-doc` package was installed on this server.

The configuration layout for an Apache2 web server installation on Ubuntu systems is as follows:

```

/etc/apache2/
|-- apache2.conf
|   |-- ports.conf
|-- mods-enabled
|   |-- *.load
|   |-- *.conf
|-- conf-enabled
|   |-- *.conf
|-- sites-enabled
|   |-- *.conf

```