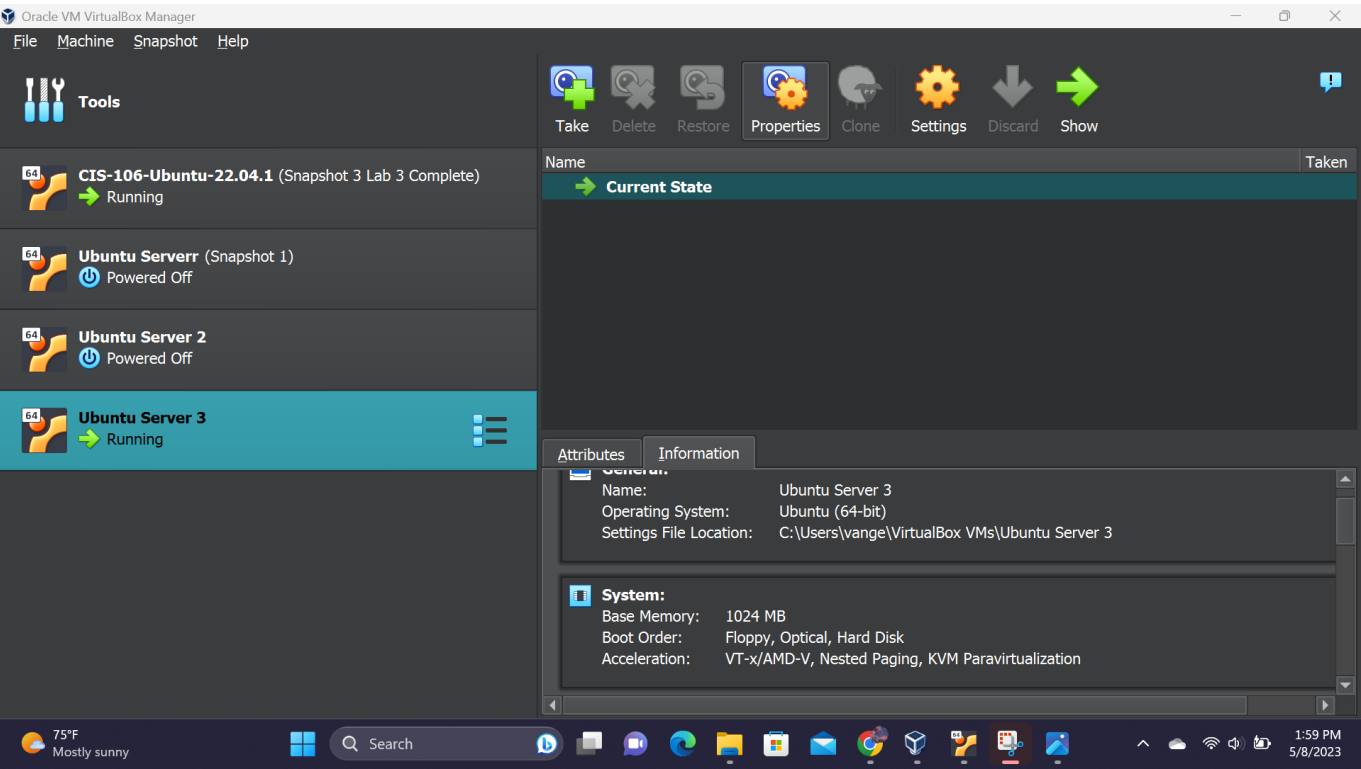


Deliverable 2 Submission

Working with Ubuntu Server and Apache

Create a virtual machine for the server



Attached is an image showcasing the created virtual machine that meets the following specifications like the CPU of 1 Core, RAM of 1 GB and hard disk drive of 10 GB

Install Ubuntu Server

```
Ubuntu 20.04.6 LTS webserver tty1
webserver login: webmaster
Password:
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.4.0-148-generic x86_64)

* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:       https://ubuntu.com/advantage

System information as of Wed May  3 01:36:05 UTC 2023

System load:  0.05          Processes:            109
Usage of /:   49.5% of 8.02GB Users logged in:          0
Memory usage: 19%          IPv4 address for enp0s3: 10.0.2.15
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Tue May  2 20:11:43 UTC 2023 on tty1
webmaster@webserver:~$ _
```

Attached is an image of the installation of Ubuntu Server. Screenshot of the login screen to the server right after you log in to the server

Install Apache2

```
# Use mod_remoteip instead.
#
LogFormat "%v:%p %h %l %u %t \"%r\" %>s %O \"%{Referer}i\" \"%{User-Agent}i\"" vhost_combined
LogFormat "%h %l %u %t \"%r\" %>s %O \"%{Referer}i\" \"%{User-Agent}i\"" combined
LogFormat "%h %l %u %t \"%r\" %>s %O" common
LogFormat "%{Referer}i -> %U" referer
LogFormat "%{User-agent}i" agent

# Include of directories ignores editors' and dpkg's backup files,
# see README.Debian for details.

# Include generic snippets of statements
IncludeOptional conf-enabled/*.conf

# Include the virtual host configurations:
IncludeOptional sites-enabled/*.conf

# vim: syntax=apache ts=4 sw=4 sts=4 sr noet

ServerName 127.0.0.1

webmaster@webserver:~$ sudo apache2ctl configtest
Syntax OK
webmaster@webserver:~$ sudo systemctl restart apache2
webmaster@webserver:~$ sudo apt install apache2
[sudo] password for webmaster:
Reading package lists... Done
Building dependency tree
Reading state information... Done
apache2 is already the newest version (2.4.41-4ubuntu3.14).
The following packages were automatically installed and are no longer required:
  libfwupdplugin1 libxmlb1
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 1 not upgraded.
webmaster@webserver:~$
```

Attached is an image of the installation of Apache2

Showcasing Command Status

```

Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 1 not upgraded.
webmaster@webserver:~$ systemctl status apache2 --no-pager
• apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
   Active: active (running) since Mon 2023-05-08 17:48:54 UTC; 41min ago
     Docs: https://httpd.apache.org/docs/2.4/
  Process: 1581 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
 Main PID: 1595 (apache2)
    Tasks: 55 (limit: 1064)
   Memory: 4.9M
   CGroup: /system.slice/apache2.service
           └─1595 /usr/sbin/apache2 -k start
             └─1596 /usr/sbin/apache2 -k start
               └─1597 /usr/sbin/apache2 -k start

May 08 17:48:54 webserver systemd[1]: apache2.service: Succeeded.
May 08 17:48:54 webserver systemd[1]: Stopped The Apache HTTP Server.
May 08 17:48:54 webserver systemd[1]: Starting The Apache HTTP Server...
May 08 17:48:54 webserver systemd[1]: Started The Apache HTTP Server.
webmaster@webserver:~$ systemctl status ssh --no-pager
• ssh.service - OpenBSD Secure Shell server
   Loaded: loaded (/lib/systemd/system/ssh.service; enabled; vendor preset: enabled)
   Active: active (running) since Mon 2023-05-08 17:33:12 UTC; 58min ago
     Docs: man:sshd(8)
           man:sshd_config(5)
 Main PID: 769 (sshd)
    Tasks: 1 (limit: 1064)
   Memory: 3.4M
   CGroup: /system.slice/ssh.service
           └─769 sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups

May 08 17:33:11 webserver systemd[1]: Starting OpenBSD Secure Shell server...
May 08 17:33:12 webserver sshd[769]: Server listening on 0.0.0.0 port 22.
May 08 17:33:12 webserver sshd[769]: Server listening on :: port 22.
May 08 17:33:12 webserver systemd[1]: Started OpenBSD Secure Shell server.
webmaster@webserver:~$ _

```

Attached is an image of the following commands:

- `systemctl status apache2 --no-pager`
- `systemctl status sshd --no-pager`
- `systemctl status ufw --no-pager`

Showcasing Last 10 lines of the following files

```
[Mon May 08 17:48:54.802584 2023] [mpm_event:notice] [pid 795:tid 140506323221568] AH00491: caught SIGTERM, shutting down
[Mon May 08 17:48:54.878224 2023] [mpm_event:notice] [pid 1595:tid 140371821866048] AH00489: Apache/2.4.41 (Ubuntu) configured -- resuming normal operations
[Mon May 08 17:48:54.878290 2023] [core:notice] [pid 1595:tid 140371821866048] AH00094: Command line: '/usr/sbin/apache2'
webmaster@webserver:~$ sudo tail -n 10 /var/log/apache2/auth.log
tail: cannot open '/var/log/apache2/auth.log' for reading: No such file or directory
webmaster@webserver:~$ sudo tail -n 10 /var/log/ssh/auth.log
tail: cannot open '/var/log/ssh/auth.log' for reading: No such file or directory
webmaster@webserver:~$ sudo tail -n 10 /var/log/ssh/auth.log
tail: cannot open '/var/log/ssh/auth.log' for reading: No such file or directory
webmaster@webserver:~$ sudo tail -n 10 /var/log/apache2/access.log
webmaster@webserver:~$ sudo tail -n 10 /var/log/apache2/error.log
[Mon May 08 17:22:26.129451 2023] [core:notice] [pid 794:tid 140456353680448] AH00094: Command line: '/usr/sbin/apache2'
[Mon May 08 17:30:39.523480 2023] [mpm_event:notice] [pid 794:tid 140456353680448] AH00491: caught SIGTERM, shutting down
[Mon May 08 17:30:39.575043 2023] [mpm_event:notice] [pid 1424:tid 139893809241152] AH00489: Apache/2.4.41 (Ubuntu) configured -- resuming normal operations
[Mon May 08 17:30:39.575106 2023] [core:notice] [pid 1424:tid 139893809241152] AH00094: Command line: '/usr/sbin/apache2'
[Mon May 08 17:30:55.239528 2023] [mpm_event:notice] [pid 1424:tid 139893809241152] AH00491: caught SIGTERM, shutting down
[Mon May 08 17:33:12.368609 2023] [mpm_event:notice] [pid 795:tid 140506323221568] AH00489: Apache/2.4.41 (Ubuntu) configured -- resuming normal operations
[Mon May 08 17:33:12.374217 2023] [core:notice] [pid 795:tid 140506323221568] AH00094: Command line: '/usr/sbin/apache2'
[Mon May 08 17:48:54.802584 2023] [mpm_event:notice] [pid 795:tid 140506323221568] AH00491: caught SIGTERM, shutting down
[Mon May 08 17:48:54.878224 2023] [mpm_event:notice] [pid 1595:tid 140371821866048] AH00489: Apache/2.4.41 (Ubuntu) configured -- resuming normal operations
[Mon May 08 17:48:54.878290 2023] [core:notice] [pid 1595:tid 140371821866048] AH00094: Command line: '/usr/sbin/apache2'
webmaster@webserver:~$ sudo tail -n 10 /var/log/ssh/auth.log
tail: cannot open '/var/log/ssh/auth.log' for reading: No such file or directory
webmaster@webserver:~$
```

Attached is an image of the following commands:

- Apache: access.log
- Apache: error.log
- SSH: auth.log

Screenshot of the following configuration:

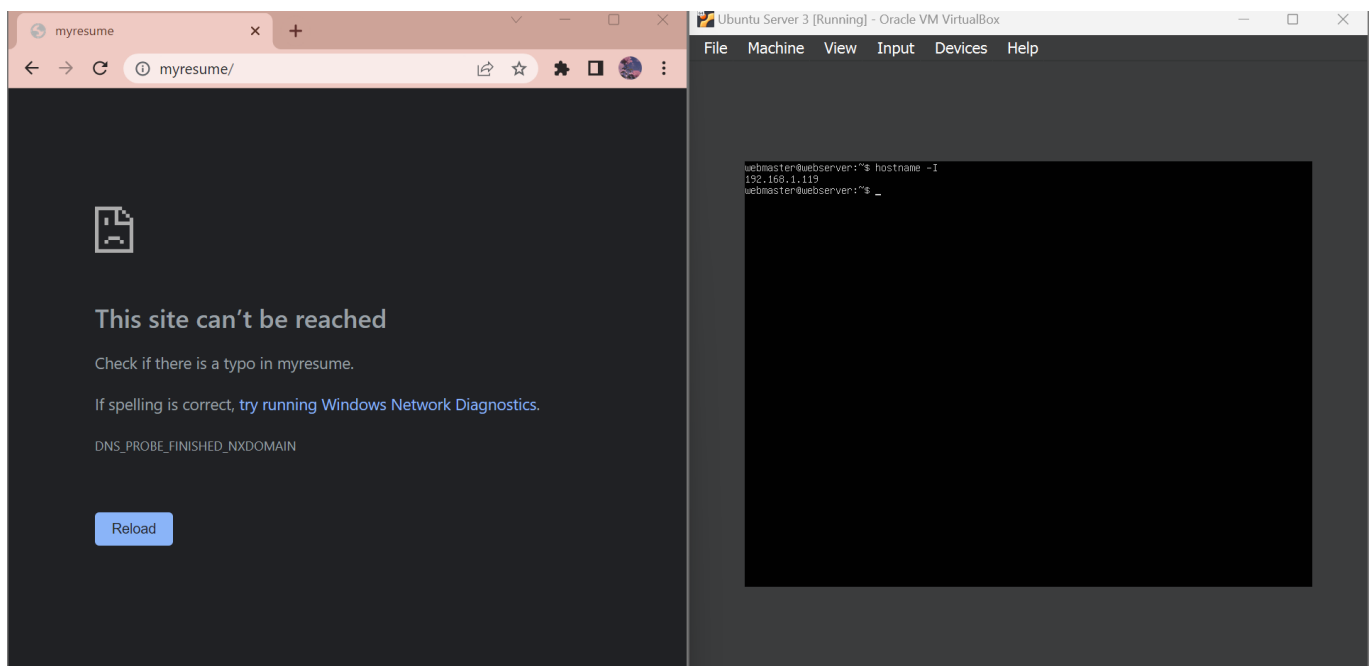
```
GNU nano 4.8 /etc/apache2/sites-available/myresume.conf
<VirtualHost *:80>
    ServerAdmin webmaster@localhost
    ServerName myresume
    ServerAlias www.myresume
    DocumentRoot /var/www/myresume
    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>
```

```
GNU nano 4.8 /etc/apache2/apache2.conf
# configuration directives that give the server its instructions.
# See http://httpd.apache.org/docs/2.4/ for detailed information about
# the directives and /usr/share/doc/apache2/README.Debian about Debian specific
# hints.
#
#
# Summary of how the Apache 2 configuration works in Debian:
# The Apache 2 web server configuration in Debian is quite different to
# upstream's suggested way to configure the web server. This is because Debian's
# default Apache2 installation attempts to make adding and removing modules,
# virtual hosts, and extra configuration directives as flexible as possible, in
# order to make automating the changes and administering the server as easy as
# possible.
#
# It is split into several files forming the configuration hierarchy outlined
# below, all located in the /etc/apache2/ directory:
#
#   /etc/apache2/
#   |-- apache2.conf
#   |   |-- ports.conf
#   |-- mods-enabled
#   |   |-- *.load
#   |   |-- *.conf
#   |-- conf-enabled
#   |   |-- *.conf
#   |-- sites-enabled
#   |   |-- *.conf
#
#
# * apache2.conf is the main configuration file (this file). It puts the pieces
#   together by including all remaining configuration files when starting up the
#   web server.
#
#
```

Attached are images of the configuration of:

- sites-available config file
- apache2.conf

Image of the ip address & Website attempt accessed



Attached is a screenshot of the IP showing and the attempt to show the sample document.

