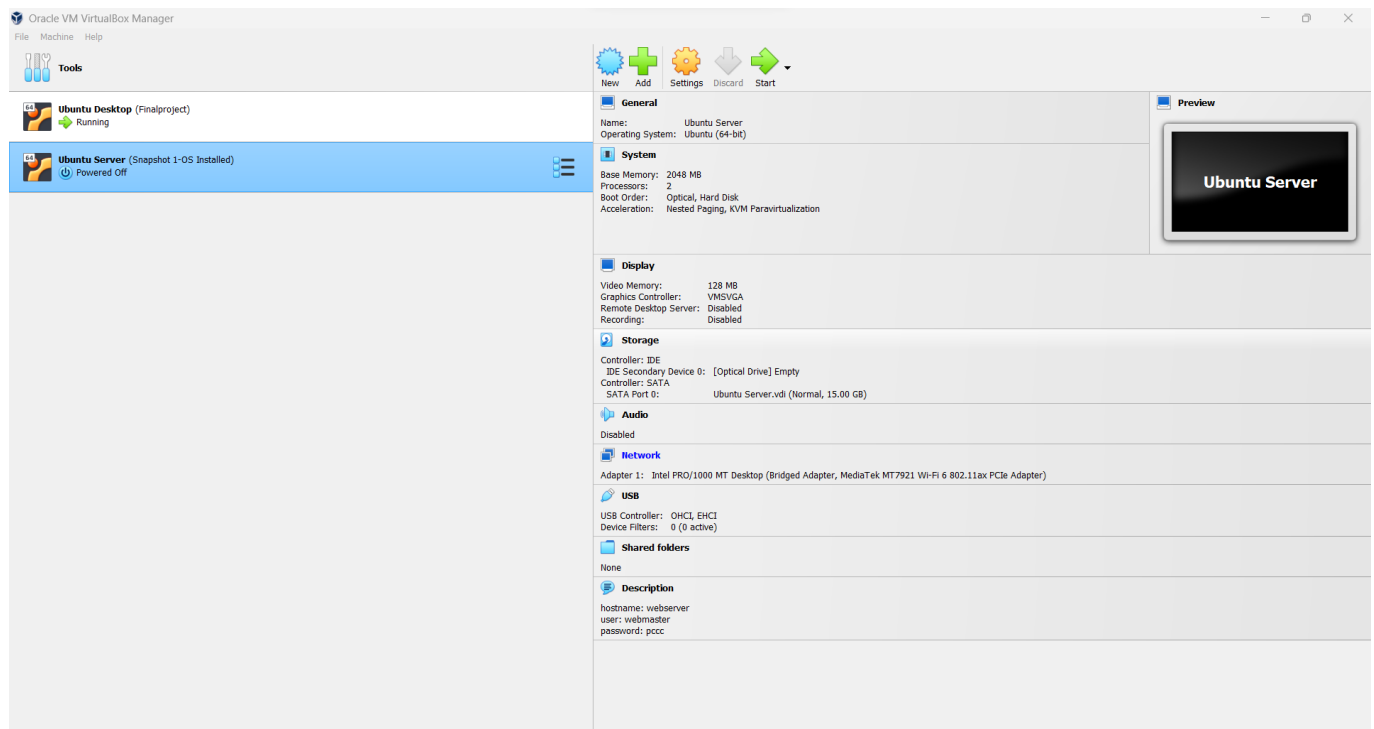
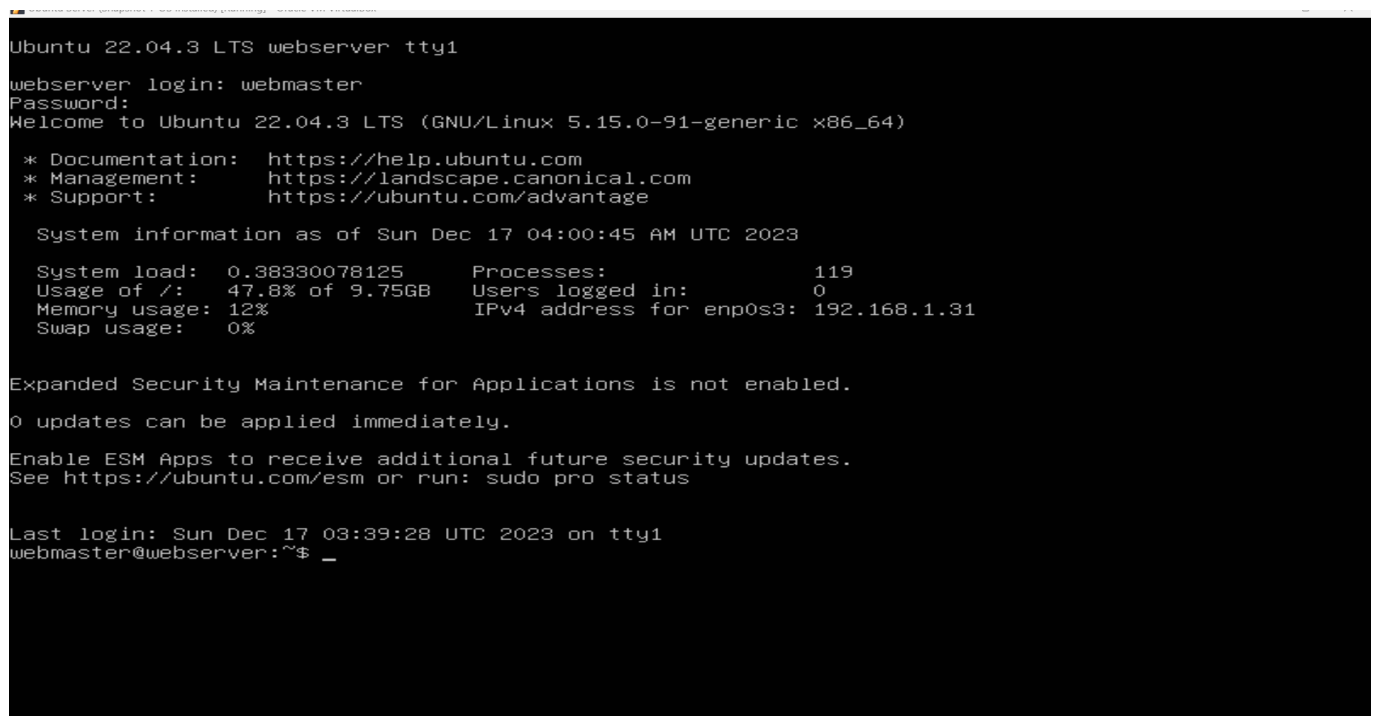


Deliverable 2 Submission

What are the server hardware specifications (virtual machine settings)?



What is Ubuntu server log in screen?



What is the IP address of your Ubuntu Server Virtual Machine?

```
Ubuntu 22.04.3 LTS webserver tty1
webserver login: webmaster
Password:
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 5.15.0-91-generic x86_64)

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

System information as of Sun Dec 17 04:00:45 AM UTC 2023

System load:  0.38330078125      Processes:           119
Usage of /:   47.8% of 9.75GB    Users logged in:     0
Memory usage: 12%               IPv4 address for enp0s3: 192.168.1.31
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: Sun Dec 17 03:39:28 UTC 2023 on tty1
webmaster@webserver:~$ _
```

How do you enable the Ubuntu Firewall?

- You would enable the Ubuntu firewall by using the command `sudo ufw enable`
- Example:

```
webmaster@webserver:~$ sudo ufw enable
Command may disrupt existing ssh connections. Proceed with operation (y|n)?
y
Firewall is active and enabled on system startup
webmaster@webserver:~$
```

How do you check if the Ubuntu Firewall is running?

- Check by using the command `sudo ufw status`
- Example:

```
webmaster@webserver:~$ sudo ufw status
[sudo] password for webmaster:
Status: active

To Action From
--
Apache ALLOW Anywhere
OpenSSH ALLOW Anywhere
Apache (v6) ALLOW Anywhere (v6)
OpenSSH (v6) ALLOW Anywhere (v6)
```

How do you disable the Ubuntu Firewall?

- Disable by using the command `sudo ufw disable`

- Example:

```
webmaster@webserver:~$ sudo ufw disable
Firewall stopped and disabled on system startup
webmaster@webserver:~$
```

How do you add Apache to the Firewall?

- To add Apache, you will need to run the command `sudo ufw allow 'Apache'`
- Example:

```
webmaster@webserver:~$ sudo ufw allow 'Apache'
[sudo] password for webmaster:
Skipping adding existing rule
Skipping adding existing rule (v6)
webmaster@webserver:~$
```

What is the command you used to install Apache?

- To install Apache, use the command `sudo apt install apache2 -y`
- Example:

```
webmaster@webserver:~$ sudo apt install apache2 -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
apache2 is already the newest version (2.4.52-1ubuntu4.7).
0 upgraded, 0 newly installed, 0 to remove and 2 not upgraded.
webmaster@webserver:~$
```

What is the command you use to check if Apache is running?

- To check if Apache is running use `systemctl status apache2 --no-pager`
- Example:

```
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 Sun 2023-12-17 04:00:01 UTC; 45min ago
     Docs: https://httpd.apache.org/docs/2.4/
   Process: 704 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
   Main PID: 781 (apache2)
     Tasks: 55 (limit: 2220)
    Memory: 7.5M
       CPU: 272ms
    CGroup: /system.slice/apache2.service
           └─781 /usr/sbin/apache2 -k start
             └─785 /usr/sbin/apache2 -k start
               └─786 /usr/sbin/apache2 -k start

Dec 17 04:00:01 webserver systemd[1]: Starting The Apache HTTP Server...
Dec 17 04:00:01 webserver systemd[1]: Started The Apache HTTP Server.
webmaster@webserver:~$
```

What is the command you use to stop Apache?

- To stop Apache run this command `sudo systemctl stop apache2`
- Example:

```
Dec 17 04:00:01 webserver systemd[1]: Started The Apache HTTP Server.  
webmaster@webserver:~$ sudo systemctl stop apache2
```

What is the command you use to restart Apache?

- To restart Apache use `sudo systemctl restart apache2`
- Example:

```
webmaster@webserver:~$ sudo systemctl restart apache2  
webmaster@webserver:~$ systemctl status apache2 --no-pager  
● apache2.service - The Apache HTTP Server  
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor pr
```

What is the command used to test Apache configuration?

- To test Apache configuration, use `sudo apachectl -t`
- Example:

```
Dec 17 04:51:35 webserver systemd[1]: Started The Apache HTTP Server.  
webmaster@webserver:~$ sudo apachectl -t  
Syntax OK  
webmaster@webserver:~$
```

What is the command used to check the installed version of Apache?

- To check installed version of Apache, use `sudo apache2 -v`
- Example:

```
webmaster@webserver:~$ sudo apache2 -v  
Server version: Apache/2.4.52 (Ubuntu)  
Server built: 2023-10-26T13:44:44  
webmaster@webserver:~$
```

What are the most common commands to troubleshoot Apache errors?

- `systemctl` - Used to control and interact with Linux services via the systemd service manager.
- `journalctl` - Used to query and view the logs that are generated by systemd.
- `apachectl` - When troubleshooting, this command is used to check Apache's configuration.

Which are Apache Log Files, and what are they used for?

- Apache log files are a very helpful resource for troubleshooting.
- Normally, any error that you receive in a browser or other HTTP client will have a corresponding entry in Apache's logs.

- Example:

```
webmaster@webserver:~$ sudo tail -n 2 /var/log/apache2/error.log
[Sun Dec 17 04:51:35.511240 2023] [mpm_event:notice] [pid 1963:tid 139897587865472] AH00489: Apache/2.4.52 (Ubuntu) configured -- resuming normal operations
[Sun Dec 17 04:51:35.511402 2023] [core:notice] [pid 1963:tid 139897587865472] AH00094: Command line: '/usr/sbin/apache2'
webmaster@webserver:~$
```