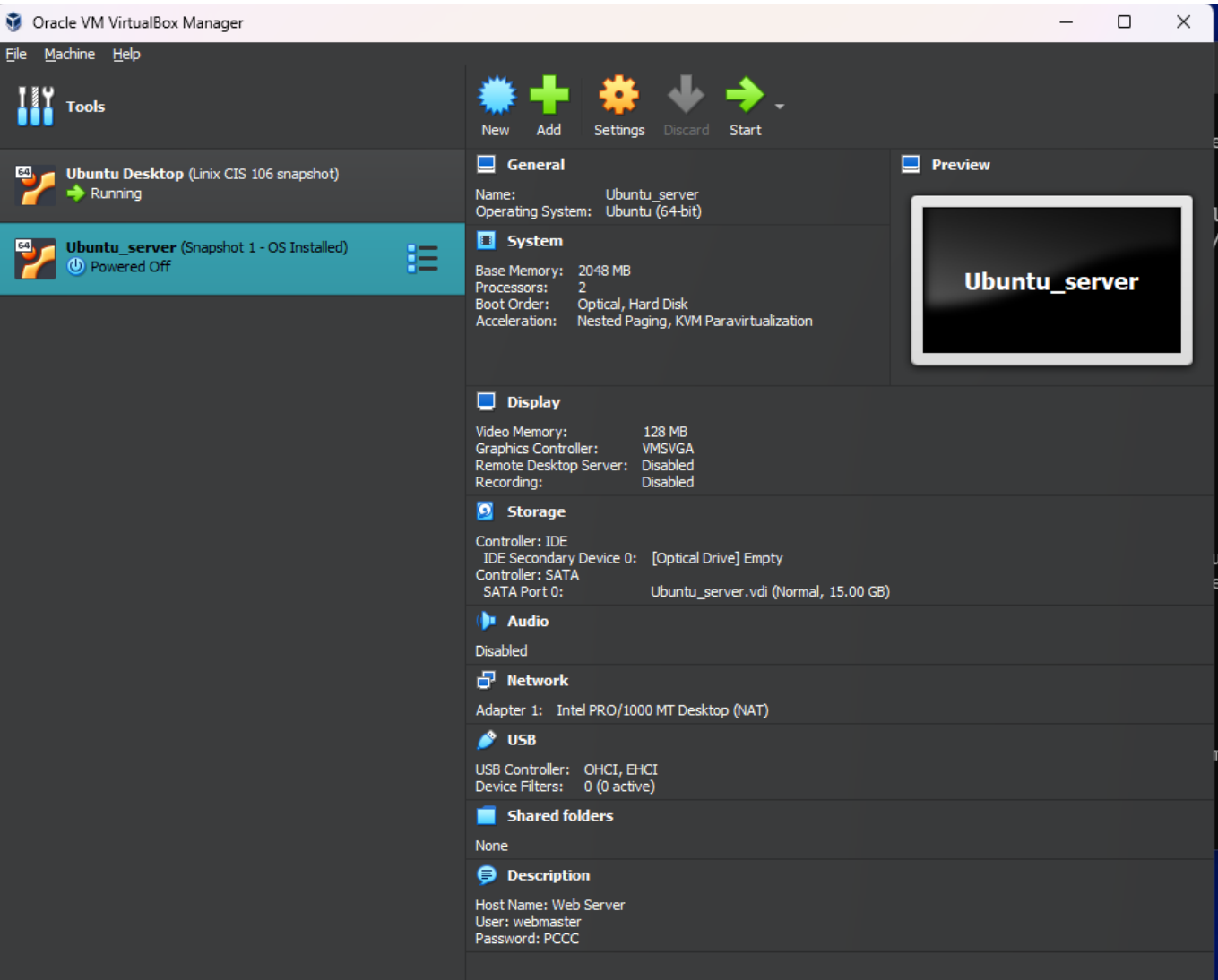
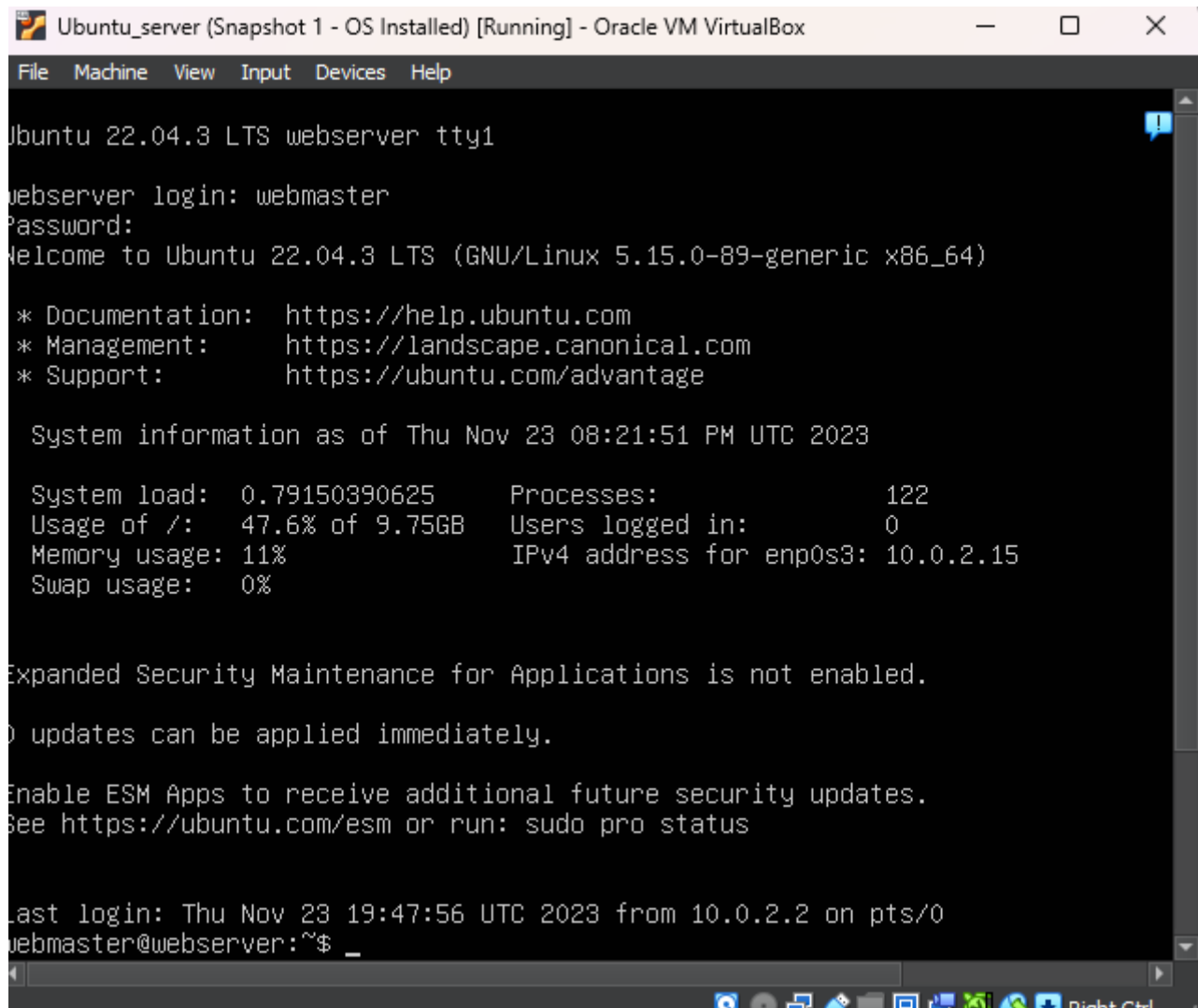


Deliverable 2

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



2. What is Ubuntu server log in screen?

A screenshot of a terminal window titled 'Ubuntu_server (Snapshot 1 - OS Installed) [Running] - Oracle VM VirtualBox'. The terminal shows the login process for 'webserver' with username 'webmaster'. It displays system information for Ubuntu 22.04.3 LTS, including system load, memory usage, and the IP address 10.0.2.15. It also shows a message about security updates and the last login time.

```
Ubuntu 22.04.3 LTS webserver tty1
webserver login: webmaster
Password:
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 5.15.0-89-generic x86_64)

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

System information as of Thu Nov 23 08:21:51 PM UTC 2023

System load: 0.79150390625      Processes:           122
Usage of /:  47.6% of 9.75GB    Users logged in:    0
Memory usage: 11%              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: Thu Nov 23 19:47:56 UTC 2023 from 10.0.2.2 on pts/0
webmaster@webserver:~$ _
```

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

127.0.0.1

4. How do you enable the Ubuntu Firewall?

sudo ufw enable

5. How do you check if the Ubuntu Firewall is running?

sudo ufw status

6. How do you disable the Ubuntu Firewall?

sudo ufw disable

7. How do you add Apache to the Firewall?

sudo ufw allow 'Apache'

8. What is the command you used to install Apache?

apt-get install apache2

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

```
sudo systemctl status apache2
```

10. What is the command you use to stop Apache?

```
sudo systemctl stop apache2
```

11. What is the command you use to restart Apache?

```
sudo systemctl restart apache2
```

12. What is the command used to test Apache configuration?

```
sudo apache2ctl configtest
```

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

```
apache2 -v
```

14. What are the most common commands to troubleshoot Apache errors? Provide a brief description of each command.

- `sudo systemctl status apache2`: This command provides the current status of the Apache service, including whether it is active, inactive, or encountering errors.
- `sudo apachectl configtest`: Verifies the syntax of your Apache configuration files without restarting the server. It helps identify syntax errors in your configuration.
- `sudo tail -f /var/log/apache2/error.log`: Displays the last few lines of the Apache error log for monitoring errors as they occur.
- `sudo tail -f /var/log/apache2/access.log`: Checks Apache Access Log

15. Which are Apache Log Files, and what are they used for? Provide examples and screenshots.

- **Error Log**: The error log contains information about errors and issues encountered by Apache during its operation. This log is crucial for diagnosing and troubleshooting problems with the server.
Example: `sudo tail -n 20 /var/log/apache2/error.log`
- **Access Log**: The access log records every request made to the Apache server, including information about the source IP address, requested URL, response status, and more. It is useful for analyzing traffic patterns and identifying potential security issues. Example: `sudo tail -n 20 /var/log/apache2/access.log`