

Deliverable 2 Submission

Server Specifications

Attributes

Information

General:

Name:

Ubuntu Server

Operating System:

Ubuntu (64-bit)

Settings File Location:

C:\Users\LukeM\Downloads\Ubuntu Server

System:

Base Memory:

2048 MB

Processors:

2

Boot Order:

Optical, Hard Disk

Acceleration:

VT-x/AMD-V, Nested Paging, KVM Paravirtualization

Display:

Video Memory:

128 MB

Graphics Controller:

VMSVGA

Remote Desktop Server:

Disabled

Recording File:

C:\Users\LukeM\Downloads\Ubuntu Server\Ubuntu Server-screen0.webm

Recording Attributes:

Frame Size: 1024x768, Frame Rate: 25fps, Bit Rate: 512kbps

Audio:

Disabled

Storage:

Controller: IDE

IDE Secondary Device 0 [Optical Drive]: ubuntu-24.04.2-live-server-amd64.iso (2.99 GB)

Controller: SATA

SATA Port 0: Ubuntu Server.vdi (Normal, 15.00 GB)

Network:

Adapter 1: Intel PRO/1000 MT Desktop (NAT)

Serial ports:

Disabled

USB:

USB Controller:

OHCI, EHCI

Device Filters:

0 (0 active)

Shared folders:

None

Ubuntu Login Screen

```
Ubuntu 24.04.2 LTS webserver tty1
webserver login: webmaster
Password:
Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 6.8.0-59-generic x86_64)

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

System information as of Mon May 12 09:38:36 PM UTC 2025

System load:  0.07          Processes:            123
Usage of /:   44.7% of 9.75GB Users logged in:      0
Memory usage: 10%          IPv4 address for enp0s3: 10.0.0.6
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

webmaster@webserver:~$
```

Questions

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

10.0.0.6 I used the `ip a` command to find the IP address

Definition:

The `ip a` command lists all IP addresses assigned to the system's network interfaces.

Syntax:

```
ip a
```

Examples:

```
ip a
ip addr show
```

4. How do you enable the Ubuntu Firewall?

```
sudo ufw enable
```

Definition:

`ufw` stands for Uncomplicated Firewall. It's a simple interface for managing iptables-based firewalls on Ubuntu.

Syntax/Example:

```
sudo ufw enable
```

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

```
ufw status
```

Syntax:

```
sudo ufw status
```

Examples:

```
sudo ufw status
sudo ufw status -v
```

6. How do you disable the Ubuntu Firewall?

```
ufw disable
```

Syntax/Example:

```
sudo ufw disable
```

1. How do you add Apache to the Firewall?

```
ufw allow 'Apache'
```

Syntax:

```
ufw allow <package-name>
```

Examples:

```
sudo ufw allow 'Apache'
sudo ufw allow ssh
```

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

```
apt install apache2
```

Definition:

`apt` is a command-line tool for handling packages in Ubuntu and Debian systems.

Syntax:

```
sudo apt install <package-name>
```

Examples:

```
sudo apt install apache2
sudo apt install curl
```

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

```
systemctl status apache2
```

Definition:

`systemctl` is used to examine and control the systemd system and service manager.

Syntax:

```
sudo systemctl status <service-name>
```

Examples:

```
sudo systemctl status apache2
sudo systemctl status ssh
```

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

```
systemctl stop apache2
```

Syntax:

```
sudo systemctl stop <service-name>
```

Examples:

```
sudo systemctl stop apache2
sudo systemctl stop ssh
```

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

```
systemctl restart apache2
```

Syntax:

```
sudo systemctl restart <service-name>
```

Examples:

```
sudo systemctl restart apache2
sudo systemctl restart ssh
```

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

```
apachectl configtest
```

Definition:

`apachectl` is a control interface for the Apache HTTP Server. The `configtest` option checks the Apache configuration for syntax errors.

Syntax/Example:

```
sudo apachectl configtest
```

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

```
apachectl -v
```

Syntax:

```
apachectl -v
```

Examples:

```
apachectl -v
apache2 -v
```

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

- `journalctl -xe` - Shows system logs including detailed errors related to services like Apache. Helpful if Apache won't start or fails silently.
 - `sudo apachectl configtest` - Tests Apache's configuration files for syntax errors. If something is off, it will usually tell you what and where.
 - `tail -f /var/log/apache2/error.log` - Live view of the error log. Great for watching what happens in real time when you restart Apache or visit a webpage.
-

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

Apache typically logs activity in two main files:

- `/var/log/apache2/access.log` - Records every request made to the server. It logs things like the user's IP, requested URL, response status, and browser info. Useful for traffic analysis and seeing what pages are getting hit.
- `/var/log/apache2/error.log` - Logs any errors Apache runs into, like misconfigured files or permission issues. This is the first place to check when something goes wrong.

These logs help with debugging, monitoring traffic, and even detecting suspicious activity.

Screenshots

access.log

```
webmaster@webserver: ~  
webmaster@webserver: $ cat /var/log/apache2/access.log  
10.0.0.1 - - [12/May/2025:21:17:05 +0000] "OPTIONS rtsp://10.0.0.6/ RTSP/1.0" 400 483 "-" "-"  
10.0.0.1 - - [12/May/2025:21:17:05 +0000] "POST /onvif/device_service HTTP/1.1" 404 431 "-" "-"  
10.0.0.1 - - [12/May/2025:21:17:10 +0000] "GET / HTTP/1.1" 200 10945 "-" "-"  
10.0.0.1 - - [12/May/2025:21:17:11 +0000] "GET /%24%7Bj%24%7B%3A%3A-n%7Dd%24%7B%3A%3A-i%7D%24%7Benv%3ATEST%3A-%3A%7D%24%7B%3A%3A-d%7Dn%24%7Benv%3ATEST%3A-s%7D%3A%2F%2F10.0.0.1%3A51610%2FFQInecqtqGqXgHXAbjdznsDR1RnvqpXF%7D HTTP/1.1" 404 450  
"- " "${j${::-n}d${::-i}}${env:TEST:-:}${::-d}n${env:TEST:-s}://10.0.0.1:51610/FQInecqtqGqXgHXAbjdznsDR1RnvqpXF}"  
10.0.0.1 - - [12/May/2025:21:17:21 +0000] "POST / HTTP/1.1" 200 10945 "-" "${${::-j}ndi:${::-d}ns://10.0.0.1:51610/FQInecqtqGqXgHXAbjdznsDR1RnvqpXF}"  
10.0.0.7 - - [12/May/2025:21:38:53 +0000] "GET / HTTP/1.1" 200 450 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/136.0.0.0 Safari/537.36"  
10.0.0.7 - - [12/May/2025:21:38:53 +0000] "GET /favicon.ico HTTP/1.1" 404 486 "http://10.0.0.6/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/136.0.0.0 Safari/537.36"  
webmaster@webserver: $
```

error.log

```
webmaster@webserver: ~
webmaster@webserver: $ webmaster@webserver: $ cat /var/log/apache2/error.log
[Mon May 12 20:29:31.413313 2025] [mpm_event:notice] [pid 1565:tid 136229142275968] AH00489: Apache/2.4.58 (Ubuntu) configured -- resuming normal operations
[Mon May 12 20:29:31.413380 2025] [core:notice] [pid 1565:tid 136229142275968] AH00094: Command line: '/usr/sbin/apache2'
[Mon May 12 21:09:40.855718 2025] [mpm_event:notice] [pid 1565:tid 136229142275968] AH00492: caught SIGWINCH, shutting down gracefully
[Mon May 12 21:09:40.908079 2025] [mpm_event:notice] [pid 2122:tid 126083882461056] AH00489: Apache/2.4.58 (Ubuntu) configured -- resuming normal operations
[Mon May 12 21:09:40.908150 2025] [core:notice] [pid 2122:tid 126083882461056] AH00094: Command line: '/usr/sbin/apache2'
[Mon May 12 21:09:53.607731 2025] [mpm_event:notice] [pid 2122:tid 126083882461056] AH00492: caught SIGWINCH, shutting down gracefully
[Mon May 12 21:09:53.669747 2025] [mpm_event:notice] [pid 2194:tid 138153159862144] AH00489: Apache/2.4.58 (Ubuntu) configured -- resuming normal operations
[Mon May 12 21:09:53.669815 2025] [core:notice] [pid 2194:tid 138153159862144] AH00094: Command line: '/usr/sbin/apache2'
[Mon May 12 21:12:46.078993 2025] [mpm_event:notice] [pid 2194:tid 138153159862144] AH00492: caught SIGWINCH, shutting down gracefully
[Mon May 12 21:16:18.886691 2025] [mpm_event:notice] [pid 924:tid 123790708463488] AH00489: Apache/2.4.58 (Ubuntu) configured -- resuming normal operations
[Mon May 12 21:16:18.888154 2025] [core:notice] [pid 924:tid 123790708463488] AH00094: Command line: '/usr/sbin/apache2' [Mon May 12 21:20:15.923599 2025] [mpm_event:notice] [pid 924:tid 123790708463488] AH00492: caught SIGWINCH, shutting down gracefully
[Mon May 12 21:20:59.020606 2025] [mpm_event:notice] [pid 906:tid 133997194282880] AH00489: Apache/2.4.58 (Ubuntu) configured -- resuming normal operations
[Mon May 12 21:20:59.022084 2025] [core:notice] [pid 906:tid 133997194282880] AH00094: Command line: '/usr/sbin/apache2' [Mon May 12 21:33:49.121164 2025] [mpm_event:notice] [pid 906:tid 133997194282880] AH00492: caught SIGWINCH, shutting down gracefully
[Mon May 12 21:33:49.165646 2025] [mpm_event:notice] [pid 1217:tid 127104601667456] AH00489: Apache/2.4.58 (Ubuntu) configured -- resuming normal operations
[Mon May 12 21:33:49.165715 2025] [core:notice] [pid 1217:tid 127104601667456] AH00094: Command line: '/usr/sbin/apache2'
[Mon May 12 21:38:32.169034 2025] [mpm_event:notice] [pid 888:tid 127956681959296] AH00489: Apache/2.4.58 (Ubuntu) configured -- resuming normal operations
[Mon May 12 21:38:32.169644 2025] [core:notice] [pid 888:tid 127956681959296] AH00094: Command line: '/usr/sbin/apache2' [Mon May 12 21:42:34.727732 2025] [mpm_event:notice] [pid 888:tid 127956681959296] AH00492: caught SIGWINCH, shutting down gracefully
[Mon May 12 21:45:54.033899 2025] [mpm_event:notice] [pid 929:tid 134527886800768] AH00489: Apache/2.4.58 (Ubuntu) configured -- resuming normal operations
[Mon May 12 21:45:54.034712 2025] [core:notice] [pid 929:tid 134527886800768] AH00094: Command line: '/usr/sbin/apache2' [Mon May 12 21:51:39.430438 2025] [mpm_event:notice] [pid 929:tid 134527886800768] AH00492: caught SIGWINCH, shutting down gracefully
[Mon May 12 21:52:01.092011 2025] [mpm_event:notice] [pid 1195:tid 140441277462400] AH00489: Apache/2.4.58 (Ubuntu) configured -- resuming normal operations
[Mon May 12 21:52:01.092081 2025] [core:notice] [pid 1195:tid 140441277462400] AH00094: Command line: '/usr/sbin/apache2'
webmaster@webserver: $
```