





# Deliverable 2 Submission


## Server Specifications


New

Add


Settings

Discard


Start

General


Name: Ubuntu Server  
Operating System: Ubuntu (64-bit)

System


Base Memory: 2048 MB  
Processors: 2  
Boot Order: Optical, Hard Disk  
Acceleration: Nested Paging, KVM Paravirtualization

Display


Video Memory: 128 MB  
Graphics Controller: VMSVGA  
Remote Desktop Server: Disabled  
Recording: Disabled


Storage

Controller: IDE  
IDE Secondary Device 0: [Optical Drive] Empty  
Controller: SATA  
SATA Port 0: Ubuntu Server.vdi (Normal, 15.00 GB)

Audio

Disabled

Preview



## Ubuntu Login Screen

```
webmaster@webserv: ~  
ssh: connect to host 192.168.0.140 port 22: Connection timed out  
PS C:\Users\zaner>  
PS C:\Users\zaner> ssh webmaster@192.168.1.140  
webmaster@192.168.1.140's 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 Tue Dec 19 04:40:19 PM UTC 2023  
  
System load:  0.8623046875      Processes:            121  
Usage of /:   48.9% of 9.75GB   Users logged in:     0  
Memory usage: 10%              IPv4 address for enp0s3: 192.168.1.140  
Swap usage:   0%  
  
* Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s  
  just raised the bar for easy, resilient and secure K8s cluster deployment.  
  
https://ubuntu.com/engage/secure-kubernetes-at-the-edge  
  
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 Dec 19 12:34:25 2023 from 192.168.1.250
```

## Questions

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

- The IP address of the Ubuntu Server is : 192.168.1.140.

### 4. How do you enable the Ubuntu Firewall?

- To enable the Ubuntu Firewall use the following command: 'sudo ufw enable'.

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

- To check the if the Ubuntu Firewall is running use the following command: 'sudo ufw status'.

### 6. How do you disable the Ubuntu Firewall?

- To disable the Ubuntu Firewall use the following the command: 'sudo ufw disable'.

### 7. How do you add Apache to the Firewall?

- To add Apache to the Firewall use the following command: 'sudo ufw allow 'Apache'.

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

- To install Apache use the following command: 'sudo apt install apache2 -y'.

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

- To check if Apache is running use the following command: 'systemctl status apache2 --no-pager'.

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

- To stop Apache use the following command: 'sudo systemctl stop apache2'.

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

- To restart Apache use the following command: 'sudo systemctl restart apache2'.

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

- To test Apache configuration use the following command: 'sudo apache2ctl configtest'.

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

- To check the installed version of Apache use the following command: 'sudo apache2 -v'.

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

- The most common commands to troubleshoot Apache errors are:
  - 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.

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

- Apache log files are a help resource for troubleshooting as any error that you receive in a browser or other HTTP client will have a corresponding entry in Apache's logs. Apache will also output errors related to configuration, built-in modules, and other debugging information to its log files.

```
webmaster@webserver: ~  
webmaster@webserver:~$ sudo head -n 5 /var/log/apache2/error.log  
[Tue Dec 19 08:38:34.303449 2023] [mpm_event:notice] [pid 1595:tid 139765755352960] AH00489: Apache/2.4.52 (Ubuntu) configured -- res  
uming normal operations  
[Tue Dec 19 08:38:34.303548 2023] [core:notice] [pid 1595:tid 139765755352960] AH00094: Command line: '/usr/sbin/apache2'  
[Tue Dec 19 08:44:55.487864 2023] [mpm_event:notice] [pid 1595:tid 139765755352960] AH00492: caught SIGWINCH, shutting down gracefull  
y  
[Tue Dec 19 08:48:48.672909 2023] [mpm_event:notice] [pid 781:tid 140516869764992] AH00489: Apache/2.4.52 (Ubuntu) configured -- resu  
ming normal operations  
[Tue Dec 19 08:48:48.674926 2023] [core:notice] [pid 781:tid 140516869764992] AH00094: Command line: '/usr/sbin/apache2'  
webmaster@webserver:~$ |
```

```
webmaster@webserver: ~  
webmaster@webserver:~$ sudo tail -n 5 /var/log/apache2/error.log  
[Tue Dec 19 11:58:43.596785 2023] [mpm_event:notice] [pid 785:tid 140146764978048] AH00489: Apache/2.4.52 (Ubuntu) configured -- resu  
ming normal operations  
[Tue Dec 19 11:58:43.609785 2023] [core:notice] [pid 785:tid 140146764978048] AH00094: Command line: '/usr/sbin/apache2'  
[Tue Dec 19 11:59:19.258362 2023] [mpm_event:notice] [pid 785:tid 140146764978048] AH00492: caught SIGWINCH, shutting down gracefully  
[Tue Dec 19 12:00:15.090442 2023] [mpm_event:notice] [pid 779:tid 140236182890368] AH00489: Apache/2.4.52 (Ubuntu) configured -- resu  
ming normal operations  
[Tue Dec 19 12:00:15.110270 2023] [core:notice] [pid 779:tid 140236182890368] AH00094: Command line: '/usr/sbin/apache2'  
webmaster@webserver:~$ |
```

```
webmaster@webserver: ~$ cat /var/log/apache2/error.log
[Tue Dec 19 08:38:34.303449 2023] [mpm_event:notice] [pid 1595:tid 139765755352960] AH00489: Apache/2.4.52 (Ubuntu) configured -- res
uming normal operations
[Tue Dec 19 08:38:34.303548 2023] [core:notice] [pid 1595:tid 139765755352960] AH00094: Command line: '/usr/sbin/apache2'
[Tue Dec 19 08:44:55.487864 2023] [mpm_event:notice] [pid 1595:tid 139765755352960] AH00492: caught SIGWINCH, shutting down gracefull
y
[Tue Dec 19 08:48:48.672909 2023] [mpm_event:notice] [pid 781:tid 140516869764992] AH00489: Apache/2.4.52 (Ubuntu) configured -- resu
ming normal operations
[Tue Dec 19 08:48:48.674926 2023] [core:notice] [pid 781:tid 140516869764992] AH00094: Command line: '/usr/sbin/apache2'
[Tue Dec 19 09:05:36.634042 2023] [mpm_event:notice] [pid 781:tid 140516869764992] AH00492: caught SIGWINCH, shutting down gracefully
[Tue Dec 19 09:06:49.856252 2023] [mpm_event:notice] [pid 783:tid 140047560939392] AH00489: Apache/2.4.52 (Ubuntu) configured -- resu
ming normal operations
[Tue Dec 19 09:06:49.864186 2023] [core:notice] [pid 783:tid 140047560939392] AH00094: Command line: '/usr/sbin/apache2'
[Tue Dec 19 09:38:30.250666 2023] [mpm_event:notice] [pid 783:tid 140047560939392] AH00492: caught SIGWINCH, shutting down gracefully
[Tue Dec 19 09:38:30.331562 2023] [mpm_event:notice] [pid 1344:tid 140341340505984] AH00489: Apache/2.4.52 (Ubuntu) configured -- res
uming normal operations
[Tue Dec 19 09:38:30.331714 2023] [core:notice] [pid 1344:tid 140341340505984] AH00094: Command line: '/usr/sbin/apache2'
[Tue Dec 19 09:42:20.873392 2023] [mpm_event:notice] [pid 1344:tid 140341340505984] AH00492: caught SIGWINCH, shutting down gracefull
y
[Tue Dec 19 09:52:21.265561 2023] [mpm_event:notice] [pid 784:tid 139833450801024] AH00489: Apache/2.4.52 (Ubuntu) configured -- resu
ming normal operations
[Tue Dec 19 09:52:21.267382 2023] [core:notice] [pid 784:tid 139833450801024] AH00094: Command line: '/usr/sbin/apache2'
[Tue Dec 19 10:42:58.410319 2023] [mpm_event:notice] [pid 784:tid 139833450801024] AH00492: caught SIGWINCH, shutting down gracefully
[Tue Dec 19 11:39:36.417830 2023] [mpm_event:notice] [pid 778:tid 139829177743232] AH00489: Apache/2.4.52 (Ubuntu) configured -- resu
ming normal operations
[Tue Dec 19 11:39:36.431540 2023] [core:notice] [pid 778:tid 139829177743232] AH00094: Command line: '/usr/sbin/apache2'
[Tue Dec 19 11:58:43.596785 2023] [mpm_event:notice] [pid 785:tid 140146764978048] AH00489: Apache/2.4.52 (Ubuntu) configured -- resu
ming normal operations
[Tue Dec 19 11:58:43.609785 2023] [core:notice] [pid 785:tid 140146764978048] AH00094: Command line: '/usr/sbin/apache2'
[Tue Dec 19 11:59:19.258362 2023] [mpm_event:notice] [pid 785:tid 140146764978048] AH00492: caught SIGWINCH, shutting down gracefully
[Tue Dec 19 12:00:15.090442 2023] [mpm_event:notice] [pid 779:tid 140236182890368] AH00489: Apache/2.4.52 (Ubuntu) configured -- resu
ming normal operations
```