

Deliverable 2

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

Details

General

Name:

Debian Web Server

Operating System:

Debian (64-bit)

System

Base Memory:

1024 MB

Boot Order:

Optical, Hard Disk

Acceleration:

Nested Paging, KVM Paravirtualization

Preview

Debian Web Server

Display

Video Memory:

32 MB

Graphics Controller:

VMSVGA

Remote Desktop Server:

Disabled

Recording:

Disabled

Storage

Controller:

IDE

IDE Primary Device 0:

[Optical Drive] debian-13.2.0-amd64-netinst.iso (784.00 MB)

Controller:

SATA

SATA Port 0:

Debian Web Server.vdi (Normal, 20.00 GB)

Audio

Disabled

Network

Adapter 1:

Intel PRO/1000 MT Desktop (NAT)

USB

USB Controller:

OHCI, EHCI

Device Filters:

0 (0 active)

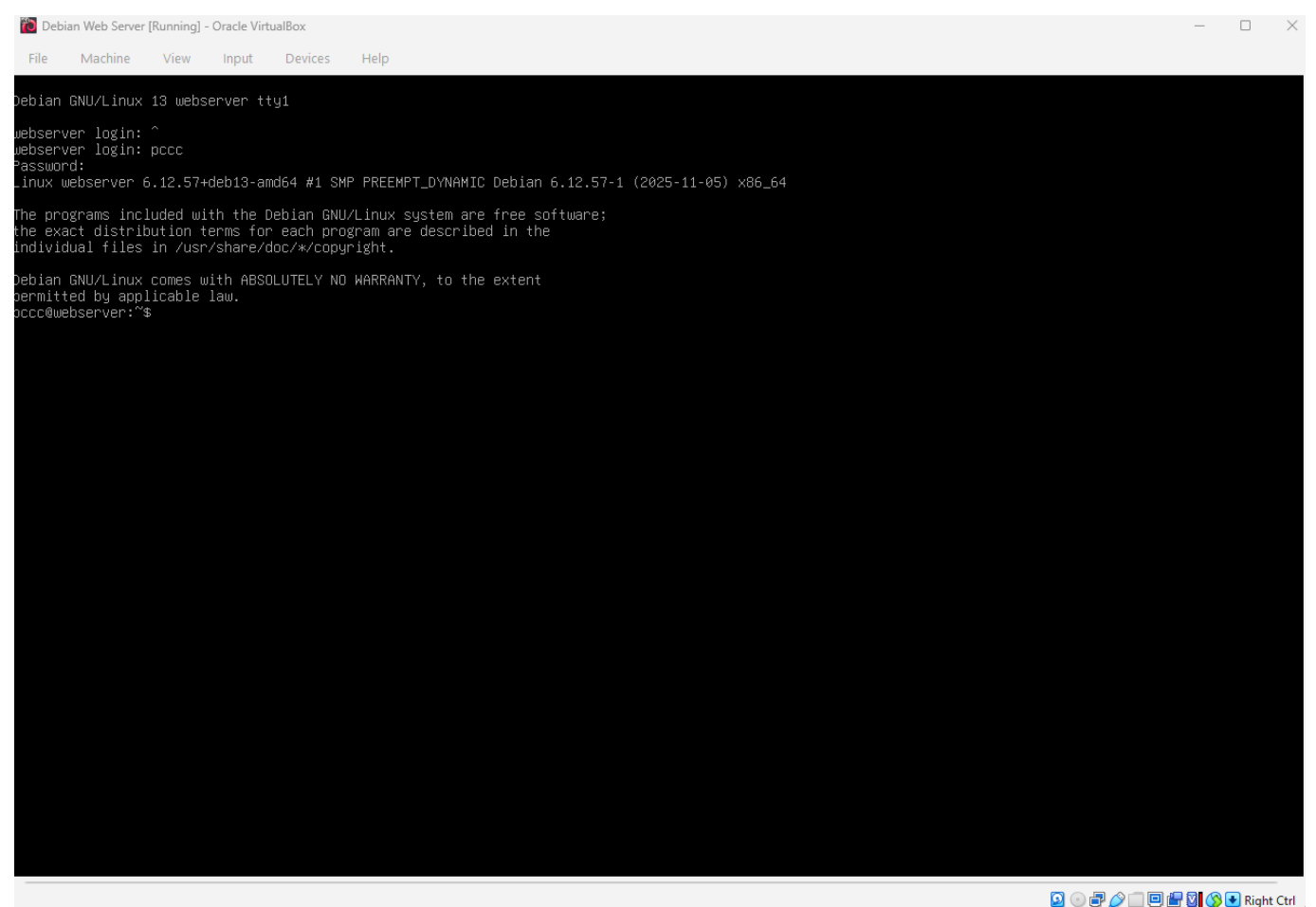
Shared folders

None

Description

None

2. What is the Debian Login Screen?



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

Command line: `hostname -I`

```
Upgrading: 0, Installing: 0, Removing: 0, Not Upgrading: 0
pccc@webserver:~$ hostname -I
10.0.2.15 fd17:625c:f037:2:a00:27ff:feba:37b fd17:625c:f037:2:85b1:218d:9ccf:554d
pccc@webserver:~$ _
```

4. How do you work with the Firewall in Debian?

- UFW Firewall Commands – Summary Table

Task	Command	Explanation
Install UFW	<code>sudo apt install ufw</code>	Installs the firewall package
Enable firewall	<code>sudo ufw enable</code>	Turns the firewall on
Check status	<code>sudo ufw status</code>	Shows active rules and status
Disable firewall	<code>sudo ufw disable</code>	Turns the firewall off
Default rule: deny incoming	<code>sudo ufw default deny incoming</code>	Blocks all incoming connections
Default rule: allow outgoing	<code>sudo ufw default allow outgoing</code>	Allows all outgoing connections

Task	Command	Explanation
Allow Apache	<code>sudo ufw allow 'Apache Full'</code>	Opens HTTP (80) and HTTPS (443) ports
Reload firewall	<code>sudo ufw reload</code>	Applies changes immediately

5. What different commands do we use to work with Apache?

File / Directory	Purpose
<code>apache2.conf</code>	Main Apache config
<code>ports.conf</code>	Listening ports
<code>envvars</code>	Environment variables
<code>sites-available/</code>	Virtual host configs
<code>sites-enabled/</code>	Active virtual hosts
<code>mods-available/</code>	Available modules
<code>mods-enabled/</code>	Active modules
<code>conf-available/</code>	Extra configs
<code>conf-enabled/</code>	Enabled configs

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

- The command is: `systemctl status apache2`
- ```
pccc@webserver:~$ systemctl status apache2
• apache2.service - The Apache HTTP Server
 Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
 Active: active (running) since Sun 2025-12-14 11:01:04 EST; 11min ago
 Invocation: 52b3cd2f04854da0bb871a73a8206831
 Docs: https://httpd.apache.org/docs/2.4/
 Main PID: 675 (apache2)
 Tasks: 55 (limit: 1110)
 Memory: 7.9M (peak: 8.1M)
 CPU: 57ms
 CGroup: /system.slice/apache2.service
 └─675 /usr/sbin/apache2 -k start
 └─676 /usr/sbin/apache2 -k start
 └─678 /usr/sbin/apache2 -k start
```

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

- The command is: `sudo systemctl stop apache2`

```
pccc@webserver:~$ sudo systemctl stop apache2
[sudo] password for pccc:
Sorry, try again.
[sudo] password for pccc:
pccc@webserver:~$ sudo systemctl enable apache2
Synchronizing state of apache2.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable apache2
pccc@webserver:~$ systemctl status apache2
* apache2.service - The Apache HTTP Server
 Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
 Active: inactive (dead) since Sun 2025-12-14 12:51:26 EST; 30s ago
 Duration: 1h 20min 52.582s
 Invocation: 30c499a39a374410808f79d4de07ac1e
 Docs: https://httpd.apache.org/docs/2.4/
 Main PID: 728 (code=exited, status=0/SUCCESS)
 Mem peak: 10.2M
 CPU: 227ms
```

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

- The command is: `sudo systemctl restart apache2`

```
pccc@webserver:~$ sudo apachectl configtest
```

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

- The command is: `sudo apachectl configtest`

```
pccc@webserver:~$ sudo apachectl configtest_
```

5/5. What is the command used to check the installed version of Apache?

```
pccc@webserver:~$ /usr/sbin/apache2 -v
Server version: Apache/2.4.65 (Debian)
Server built: 2025-07-29T17:52:31
pccc@webserver:~$
```

- The command is: `/usr/sbin/apache2 -v`

6. What are some common configuration files for Apache?

| File / Directory              | Purpose                               |
|-------------------------------|---------------------------------------|
| /etc/apache2/apache2.conf     | Main Apache configuration file        |
| /etc/apache2/ports.conf       | Defines listening ports               |
| /etc/apache2/envvars          | Apache environment variables          |
| /etc/apache2/sites-available/ | Available virtual host configurations |
| /etc/apache2/sites-enabled/   | Enabled virtual host configurations   |
| /etc/apache2/mods-available/  | Available Apache modules              |
| /etc/apache2/mods-enabled/    | Enabled Apache modules                |
| /etc/apache2/conf-available/  | Additional configuration files        |
| /etc/apache2/conf-enabled/    | Enabled configuration files           |

```
pccc@webserver:/etc/apache2$ ls
apache2.conf conf-available conf-enabled envvars magic mods-available mods-enabled ports.conf sites-available sites-enabled
```

7. Where does Apache store logs?

- Apache logs are stored at: `/var/log`

```
olccc@webserver:/var/log$ ls /var/log
alternatives.log apache2 apt btmp dpkg.log installer journal lastlog private README runit wtmp wtmp.db
olccc@webserver:/var/log$
```

8. What are some basic commands we can use to review logs?

- The most basic commands to review apache's log are:

| Command              | Purpose                             |
|----------------------|-------------------------------------|
| <code>cat</code>     | Displays the entire log file        |
| <code>less</code>    | Views logs one page at a time       |
| <code>more</code>    | Simple paged log viewer             |
| <code>tail</code>    | Shows the last lines of a log file  |
| <code>tail -f</code> | Monitors logs in real time          |
| <code>head</code>    | Shows the first lines of a log file |
| <code>grep</code>    | Searches for text in logs           |
| <code>wc -l</code>   | Counts the number of log entries    |

```
olccc@webserver:/var/log$ head dpkg.log
2025-12-14 15:57:33 startup archives install
2025-12-14 15:57:33 install base-passwd:amd64 <none> 3.6.7
2025-12-14 15:57:33 status half-installed base-passwd:amd64 3.6.7
2025-12-14 15:57:33 status unpacked base-passwd:amd64 3.6.7
2025-12-14 15:57:33 configure base-passwd:amd64 3.6.7 3.6.7
2025-12-14 15:57:33 status half-configured base-passwd:amd64 3.6.7
2025-12-14 15:57:33 status installed base-passwd:amd64 3.6.7
2025-12-14 15:57:33 startup archives install
2025-12-14 15:57:33 install base-files:amd64 <none> 13.8+deb13u2
2025-12-14 15:57:33 status half-installed base-files:amd64 13.8+deb13u2
olccc@webserver:/var/log$
```