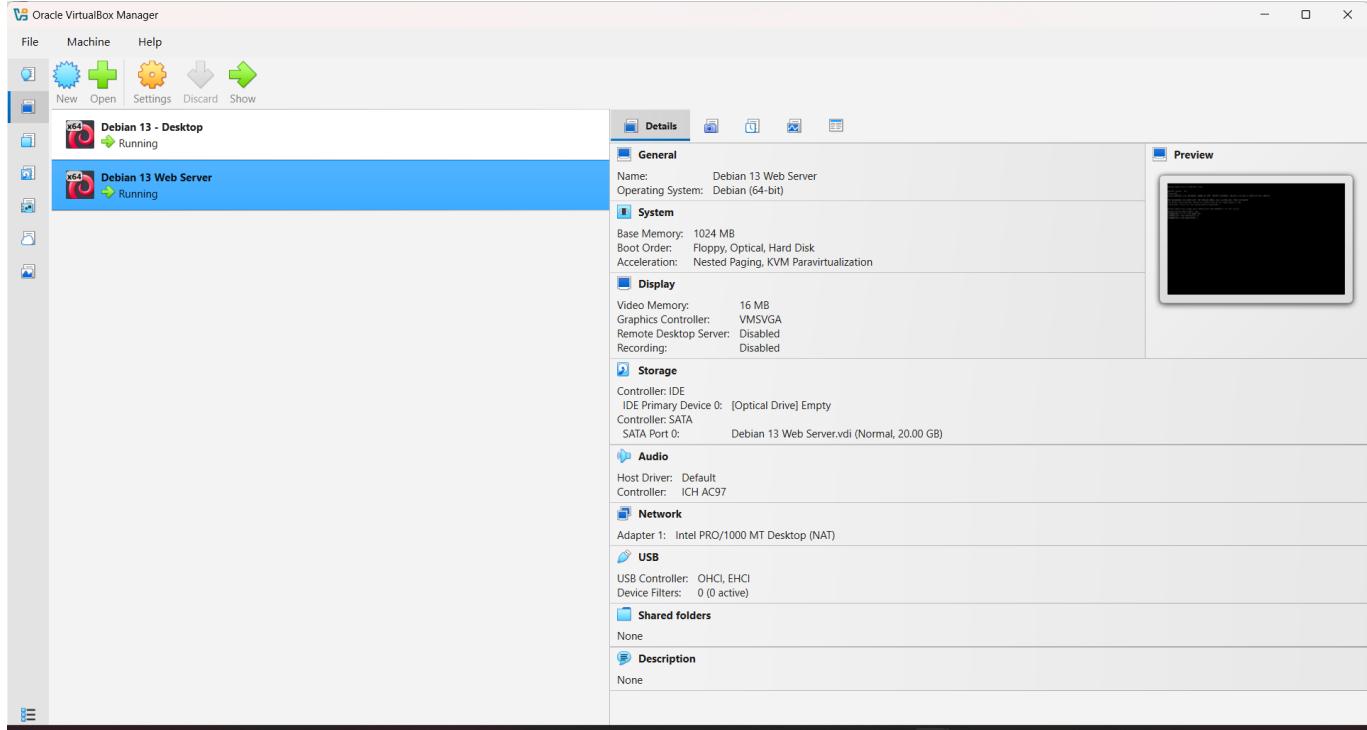
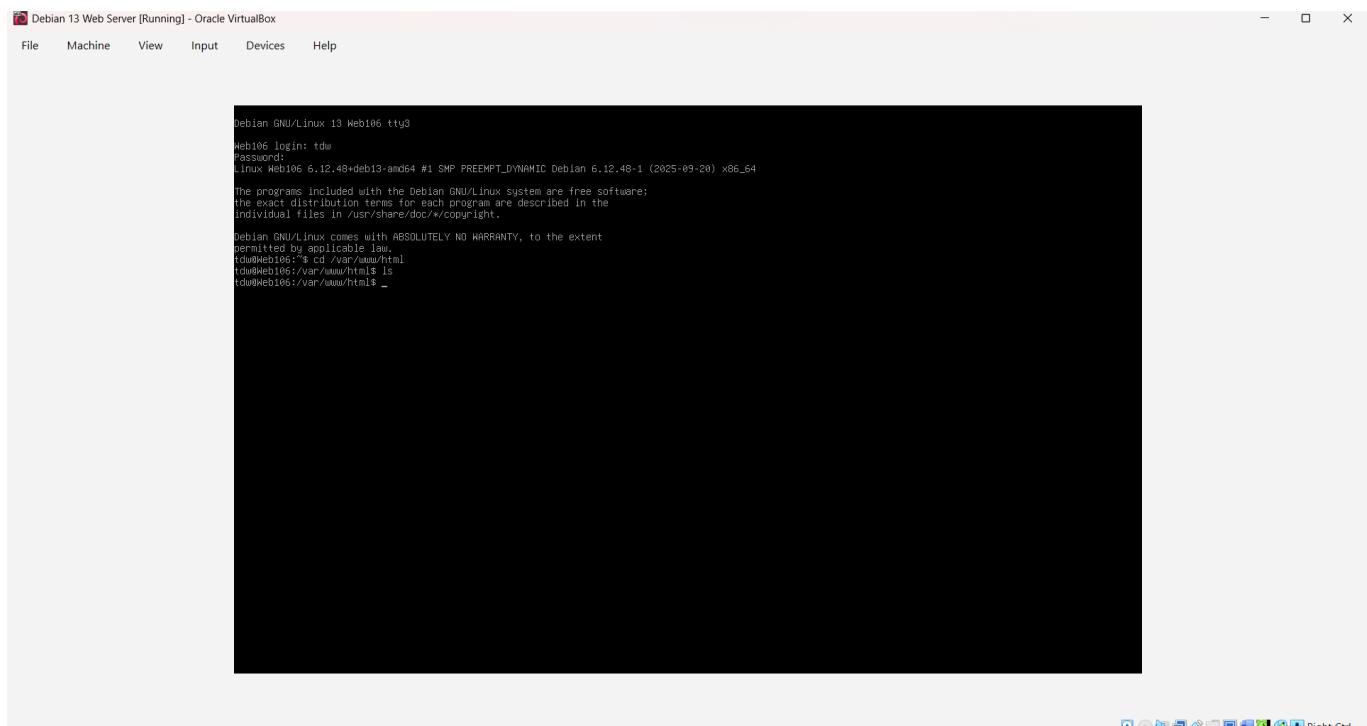


Deliverable 2

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



2. What is the Debian Login Screen?



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

```

tdw@Web106:/var/www/htm ~ + - 
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
  link/ether 08:00:27:52:38:65 brd ff:ff:ff:ff:ff:ff
  altname enx080027523865
  inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
    valid_lft 83526sec preferred_lft 72726sec
  inet6 fd17:625c:f037:2:a00:27ff:fe52:3865/64 scope global dynamic mngtmpaddr proto kernel_ra
    valid_lft 86341sec preferred_lft 14341sec
  inet6 fd17:625c:f037:2:294:a5d2:1a99:1b56/64 scope global dynamic mngtmpaddr noprefixroute
    valid_lft 86341sec preferred_lft 14341sec
  inet6 fe80::2799:4488:5d7a:9399/64 scope link
    valid_lft forever preferred_lft forever
tdw@Web106:/var/www/html$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
  link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
  inet 127.0.0.1/8 scope host lo
    valid_lft forever preferred_lft forever
  inet6 ::1/128 scope host noprefixroute
    valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
  link/ether 08:00:27:52:38:65 brd ff:ff:ff:ff:ff:ff
  altname enx080027523865
  inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
    valid_lft 83513sec preferred_lft 72713sec
  inet6 fd17:625c:f037:2:a00:27ff:fe52:3865/64 scope global dynamic mngtmpaddr proto kernel_ra
    valid_lft 86329sec preferred_lft 14329sec
  inet6 fd17:625c:f037:2:294:a5d2:1a99:1b56/64 scope global dynamic mngtmpaddr noprefixroute
    valid_lft 86329sec preferred_lft 14329sec
  inet6 fe80::2799:4488:5d7a:9399/64 scope link
    valid_lft forever preferred_lft forever
tdw@Web106:/var/www/html$ |

```

4. How do you work with the Firewall in Debian? (Type and explain what each command does)

- Examples:
 - How do you check if the Firewall is running?
 - By using the command `sudo ufw status`
 - How do you disable the Firewall?
 - By using the command `sudo ufw disable`
 - How do you add Apache to the Firewall?
 - By using the command `sudo ufw allow "Apache Full"`

5. What different commands do we use to work with Apache? (Type the command and include a screenshot!)

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

- The command is: `sudo systemctl status apache2`

```
tdw@Web106:/var/www/htm$ sudo systemctl status apache2
[sudo] password for tdw:
● apache2.service - The Apache HTTP Server
  Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
  Active: active (running) since Tue 2025-11-25 12:01:21 EST; 59min ago
    Invocation: 936dc90d78a44a03a426875d1abe2c36
      Docs: https://httpd.apache.org/docs/2.4/
     Process: 726 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
    Main PID: 757 (apache2)
      Tasks: 55 (limit: 1095)
     Memory: 9.7M (peak: 10M)
        CPU: 743ms
       CGroup: /system.slice/apache2.service
           └─757 /usr/sbin/apache2 -k start
              ├─759 /usr/sbin/apache2 -k start
              └─760 /usr/sbin/apache2 -k start

Nov 25 12:01:21 Web106 systemd[1]: Starting apache2.service - The Apache HTTP Server...
Nov 25 12:01:21 Web106 apachectl[756]: AH00557: apache2: apr_sockaddr_info_get() failed for Web106
Nov 25 12:01:21 Web106 apachectl[756]: AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 127.0.0.1. Set the 'ServerName' or 'ServerAlias' directive
Nov 25 12:01:21 Web106 systemd[1]: Started apache2.service - The Apache HTTP Server.
lines 1-19/19 (END)...skipping...
● apache2.service - The Apache HTTP Server
  Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
  Active: active (running) since Tue 2025-11-25 12:01:21 EST; 59min ago
    Invocation: 936dc90d78a44a03a426875d1abe2c36
      Docs: https://httpd.apache.org/docs/2.4/
     Process: 726 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
    Main PID: 757 (apache2)
      Tasks: 55 (limit: 1095)
     Memory: 9.7M (peak: 10M)
        CPU: 743ms
       CGroup: /system.slice/apache2.service
           └─757 /usr/sbin/apache2 -k start
              ├─759 /usr/sbin/apache2 -k start
              └─760 /usr/sbin/apache2 -k start

Nov 25 12:01:21 Web106 systemd[1]: Starting apache2.service - The Apache HTTP Server...
Nov 25 12:01:21 Web106 apachectl[756]: AH00557: apache2: apr_sockaddr_info_get() failed for Web106
Nov 25 12:01:21 Web106 apachectl[756]: AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 127.0.0.1. Set the 'ServerName' or 'ServerAlias' directive
Nov 25 12:01:21 Web106 systemd[1]: Started apache2.service - The Apache HTTP Server.
```

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

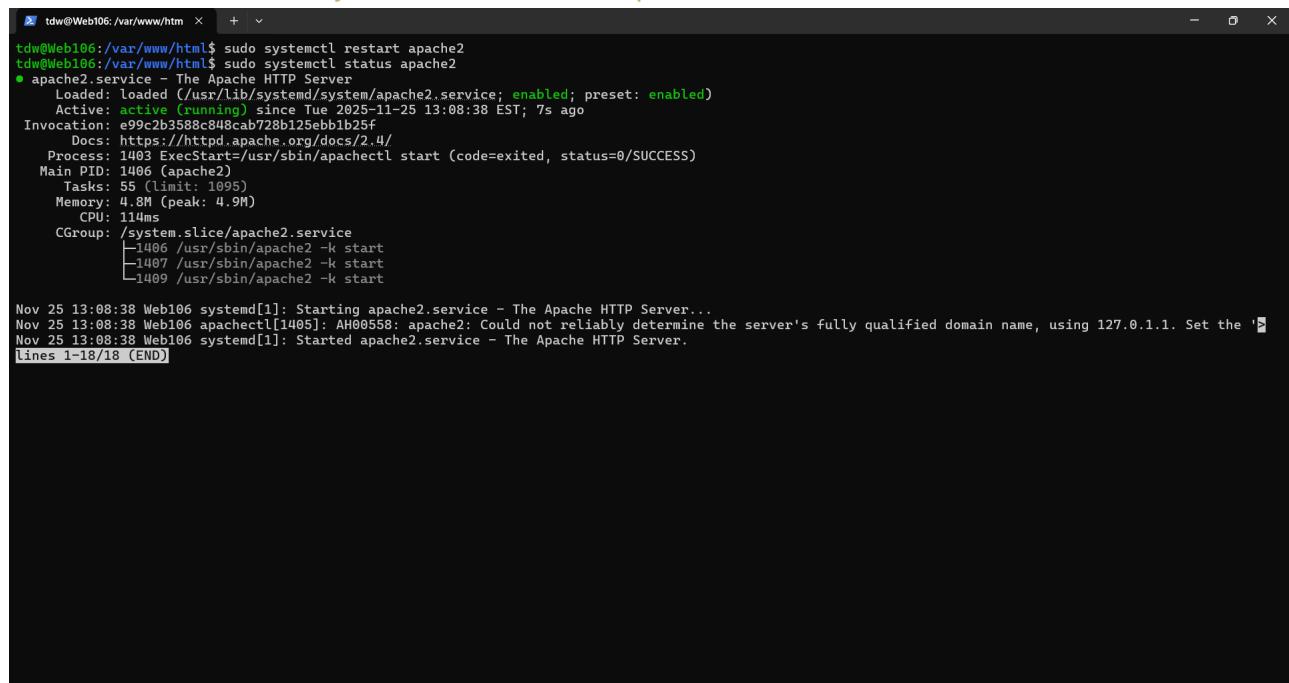
- The command is: `sudo systemctl stop apache2`

```
tdw@Web106:/var/www/html$ sudo systemctl stop apache2
tdw@Web106:/var/www/html$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
  Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
  Active: inactive (dead) since Tue 2025-11-25 13:05:26 EST; 27s ago
    Duration: 1h 4min 4.754s
  Invocation: 936dc90d78a44a03a426875d1abe2c36
    Docs: https://httpd.apache.org/docs/2.4/
   Process: 726 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
  Process: 1382 ExecStop=/usr/sbin/apachectl graceful-stop (code=exited, status=0/SUCCESS)
 Main PID: 757 (code=exited, status=0/SUCCESS)
  Mem peak: 11.5M
        CPU: 877ms

Nov 25 12:01:21 Web106 systemd[1]: Starting apache2.service - The Apache HTTP Server...
Nov 25 12:01:21 Web106 apachectl[756]: AH00557: apache2: apr_sockaddr_info_get() failed for Web106
Nov 25 12:01:21 Web106 apachectl[756]: AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 127.0.0.1. Set the 'ServerName' or 'ServerAlias' directive
Nov 25 12:01:21 Web106 systemd[1]: Started apache2.service - The Apache HTTP Server.
Nov 25 13:05:26 Web106 systemd[1]: Stopping apache2.service - The Apache HTTP Server...
Nov 25 13:05:26 Web106 apachectl[1384]: AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 127.0.1.1. Set the 'ServerName' or 'ServerAlias' directive
Nov 25 13:05:26 Web106 systemd[1]: apache2.service: Deactivated successfully.
Nov 25 13:05:26 Web106 systemd[1]: Stopped apache2.service - The Apache HTTP Server.
lines 1-20/20 (END)
```

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

- The command is: `sudo systemctl restart apache2`



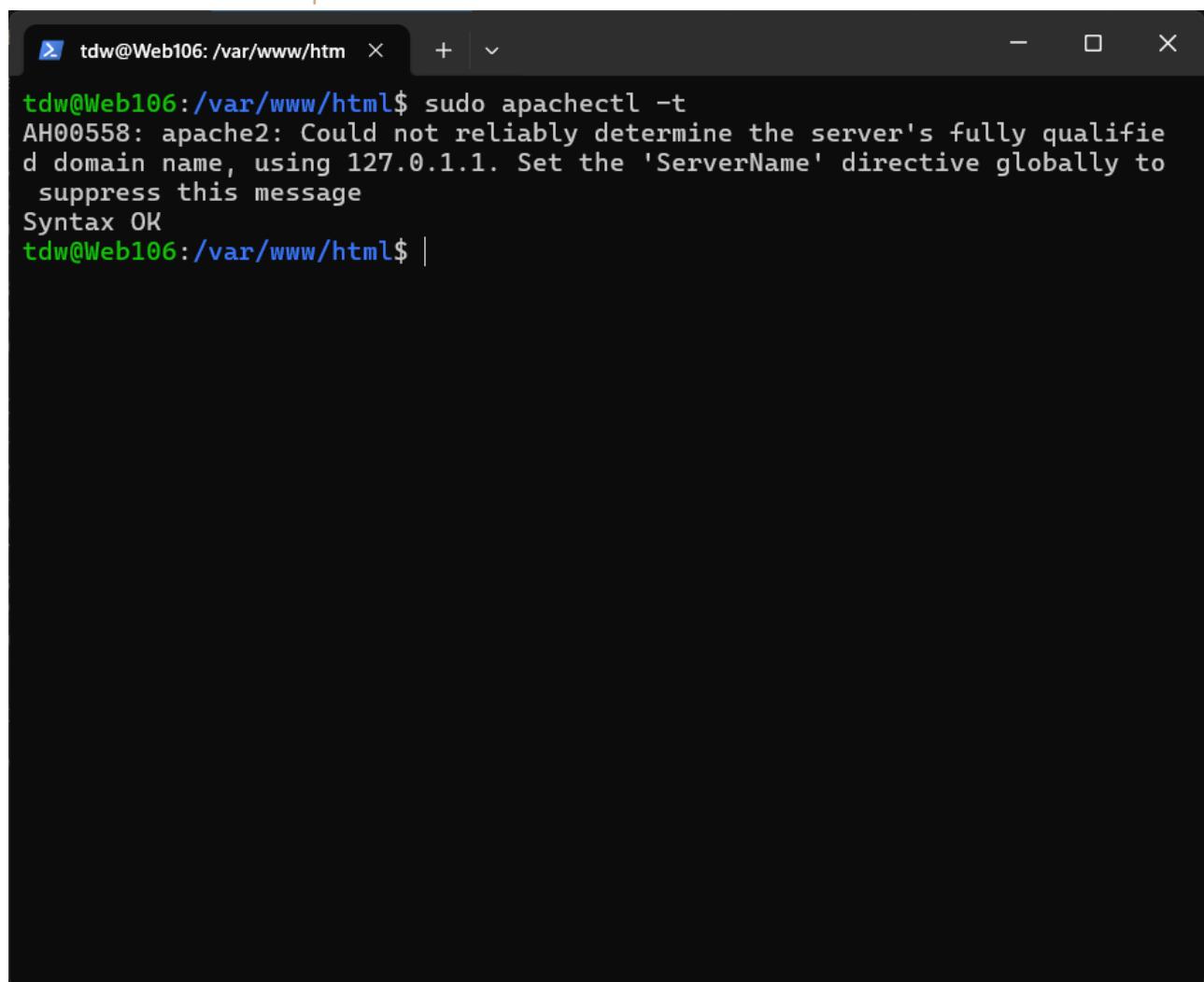
```
tdw@Web106: /var/www/htm$ sudo systemctl restart apache2
tdw@Web106: /var/www/htm$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
   Active: active (running) since Tue 2025-11-25 13:08:38 EST; 7s ago
     Invocation: e99c2b358c848cab728b125eb1b25f
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 1403 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
   Main PID: 1406 (apache2)
      Tasks: 55 (limit: 1095)
        Memory: 4.8M (peak: 4.9M)
         CPU: 114ms
        CGroup: /system.slice/apache2.service
                ├─1406 /usr/sbin/apache2 -k start
                ├─1407 /usr/sbin/apache2 -k start
                └─1409 /usr/sbin/apache2 -k start

Nov 25 13:08:38 Web106 systemd[1]: Starting apache2.service - The Apache HTTP Server...
Nov 25 13:08:38 Web106 apachectl[1405]: AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 127.0.1.1. Set the 'ServerName' directive globally to suppress this message
Nov 25 13:08:38 Web106 systemd[1]: Started apache2.service - The Apache HTTP Server.

lines 1-18/18 (END)
```

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

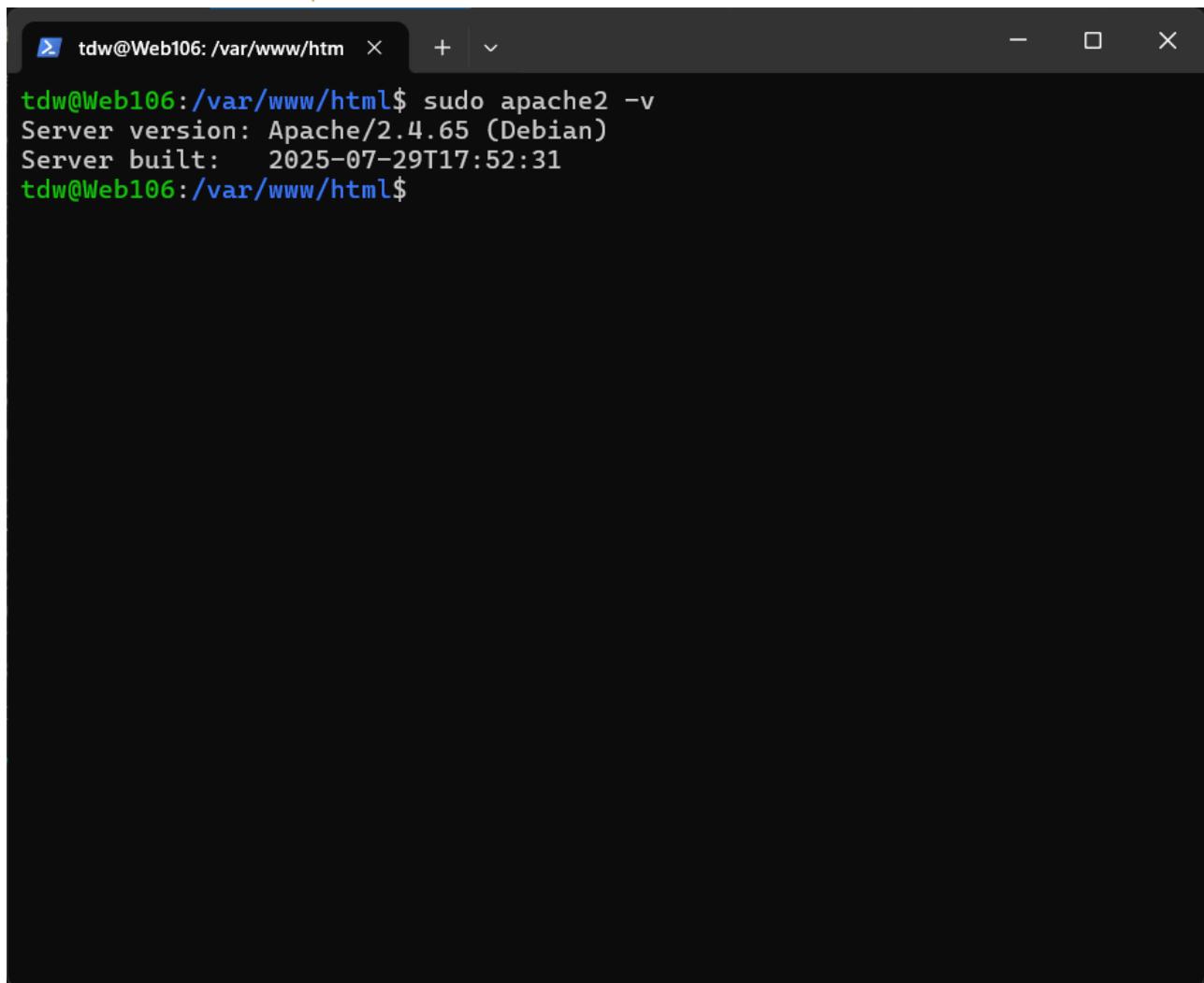
- The command is: `sudo apachectl1 -t`



```
tdw@Web106: /var/www/htm$ sudo apachectl -t
AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 127.0.1.1. Set the 'ServerName' directive globally to suppress this message
Syntax OK
tdw@Web106: /var/www/htm$ |
```

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

- The command is: `sudo apache2 -v`



A screenshot of a terminal window titled "tdw@Web106: /var/www/htm". The window contains the following text:

```
tdw@Web106:/var/www/html$ sudo apache2 -v
Server version: Apache/2.4.65 (Debian)
Server built:   2025-07-29T17:52:31
tdw@Web106:/var/www/html$
```

6. What are some common configuration files for Apache?

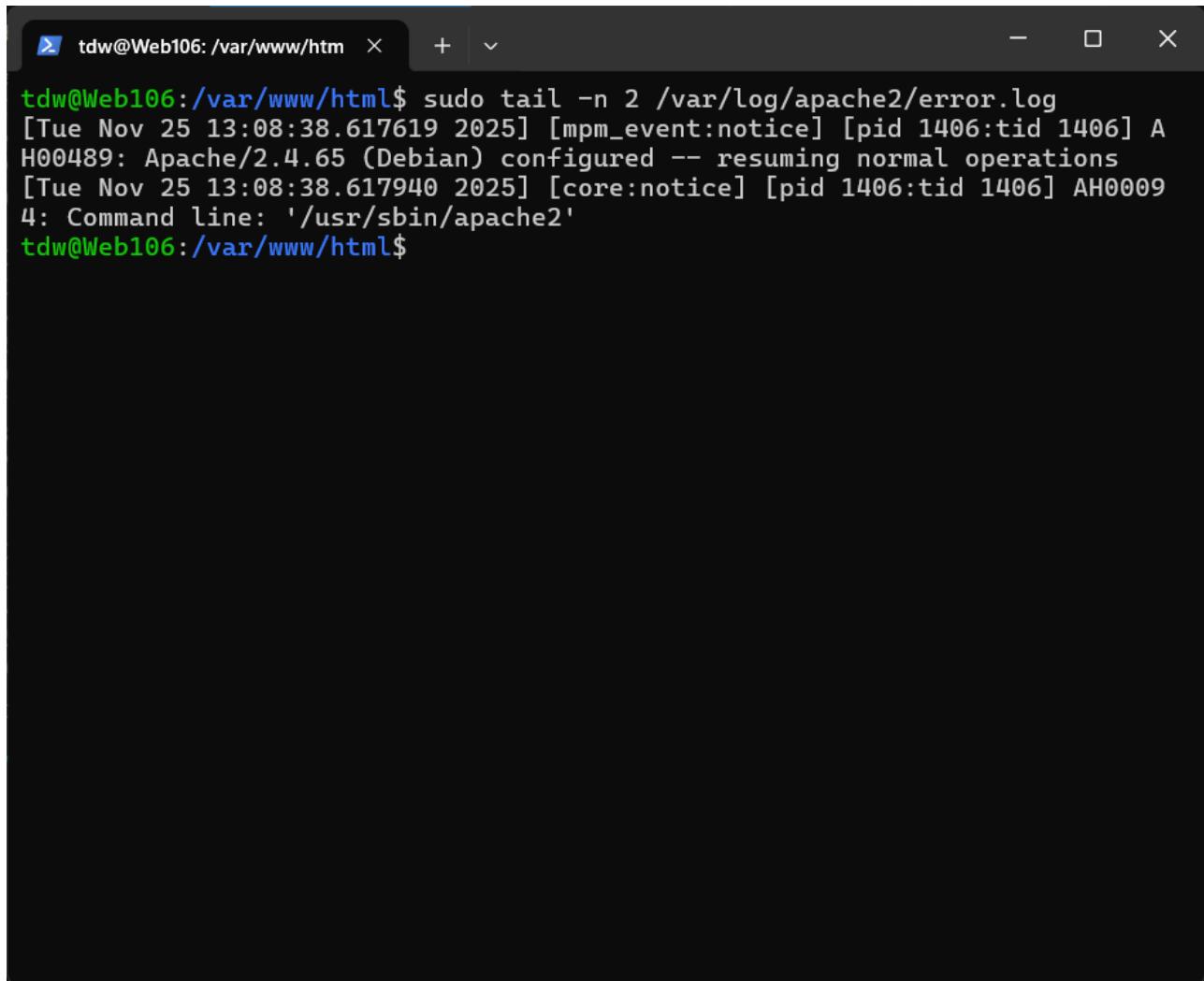
- The command is: `ls -a *.conf`

A screenshot of a terminal window titled "tdw@Web106: /etc". The window shows the command "ls -a *.conf" being run and its output. The output lists various configuration files in the /etc directory, including "adduser.conf", "ca-certificates.conf", "debconf.conf", "deluser.conf", "dhpcd.conf", "e2scrub.conf", "gai.conf", "host.conf", "kernel-img.conf", "ld.so.conf", "libaudit.conf", "locale.conf", "logrotate.conf", "mke2fs.conf", "nftables.conf", "nsswitch.conf", "pam.conf", "reportbug.conf", "resolv.conf", "sudo.conf", "sudo_logsrvd.conf", "ucf.conf", "vconsole.conf", and "xattr.conf".

```
tdw@Web106:~$ cd etc
tdw@Web106:/etc$ ls -a *.conf
adduser.conf      gai.conf        logrotate.conf   resolv.conf
ca-certificates.conf host.conf     mke2fs.conf     sudo.conf
debconf.conf      kernel-img.conf nftables.conf  sudo_logsrvd.conf
deluser.conf      ld.so.conf      nsswitch.conf  ucf.conf
dhpcd.conf        libaudit.conf  pam.conf       vconsole.conf
e2scrub.conf      locale.conf    reportbug.conf xattr.conf
tdw@Web106:/etc$ |
```

7. Where does Apache store logs?

- The directory is: do tail -n 2 /var/log/apache2/error.log

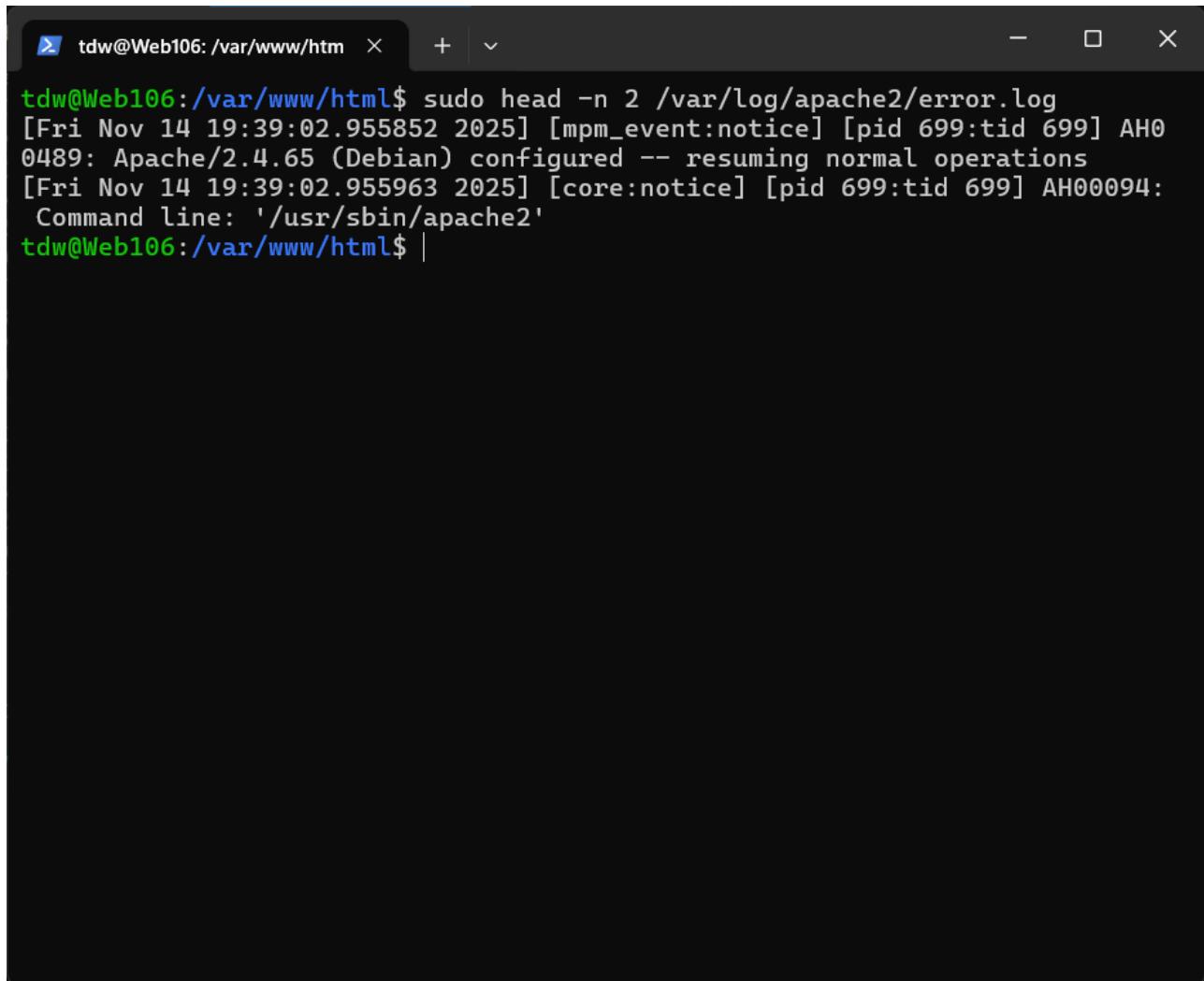


A terminal window titled "tdw@Web106: /var/www/htm" showing the output of the command "sudo tail -n 2 /var/log/apache2/error.log". The output displays Apache startup logs from November 25, 2025, including notices about resuming normal operations and the command line used.

```
tdw@Web106:/var/www/html$ sudo tail -n 2 /var/log/apache2/error.log
[Tue Nov 25 13:08:38.617619 2025] [mpm_event:notice] [pid 1406:tid 1406] AH00489: Apache/2.4.65 (Debian) configured -- resuming normal operations
[Tue Nov 25 13:08:38.617940 2025] [core:notice] [pid 1406:tid 1406] AH00094: Command line: '/usr/sbin/apache2'
tdw@Web106:/var/www/html$
```

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

- The command is: `sudo head -n 2 /var/log/apache2/error.log`



A terminal window titled "tdw@Web106: /var/www/htm" showing the output of the command `sudo head -n 2 /var/log/apache2/error.log`. The output displays two lines of logs from Apache 2.4.65 (Debian) on November 14, 2025, at 19:39:02. The logs indicate the server has resumed normal operations after configuration.

```
tdw@Web106:/var/www/html$ sudo head -n 2 /var/log/apache2/error.log
[Fri Nov 14 19:39:02.955852 2025] [mpm_event:notice] [pid 699:tid 699] AH00489: Apache/2.4.65 (Debian) configured -- resuming normal operations
[Fri Nov 14 19:39:02.955963 2025] [core:notice] [pid 699:tid 699] AH00094: Command line: '/usr/sbin/apache2'
tdw@Web106:/var/www/html$ |
```