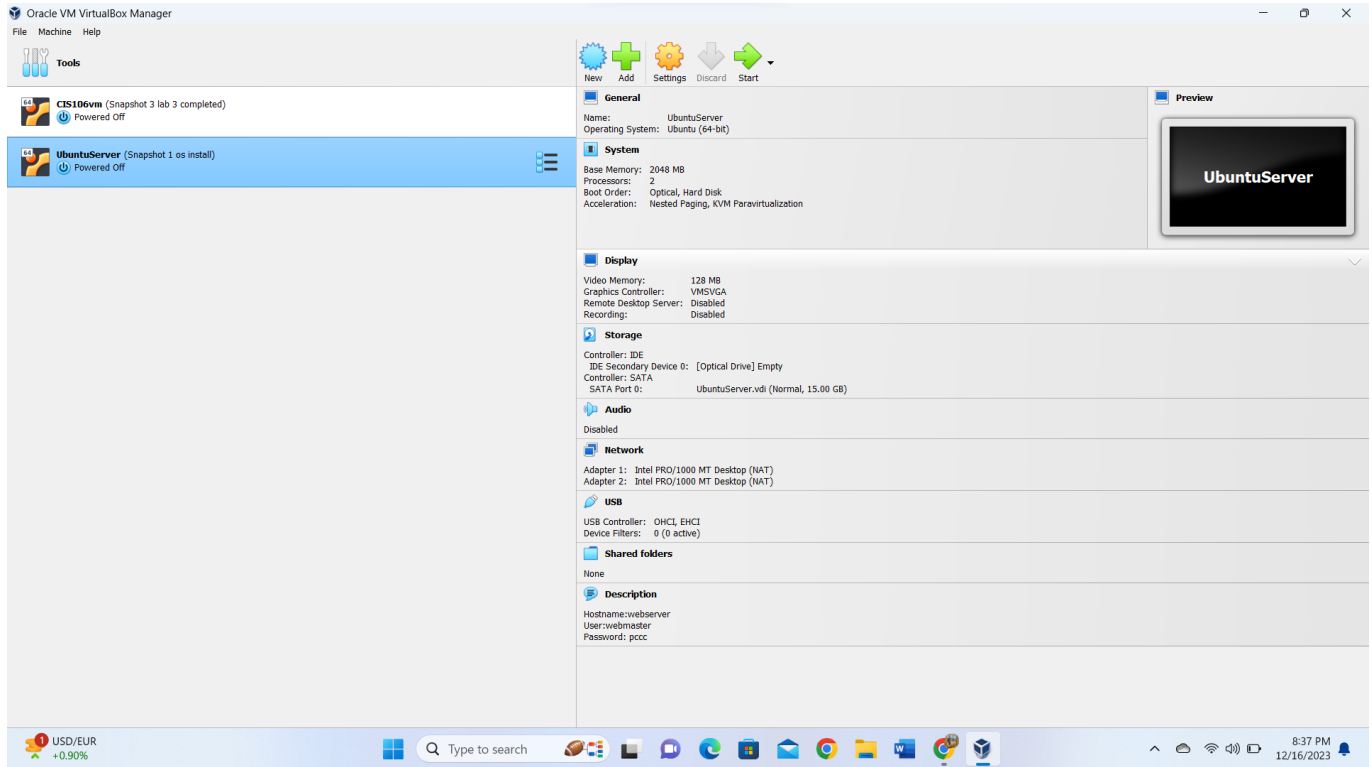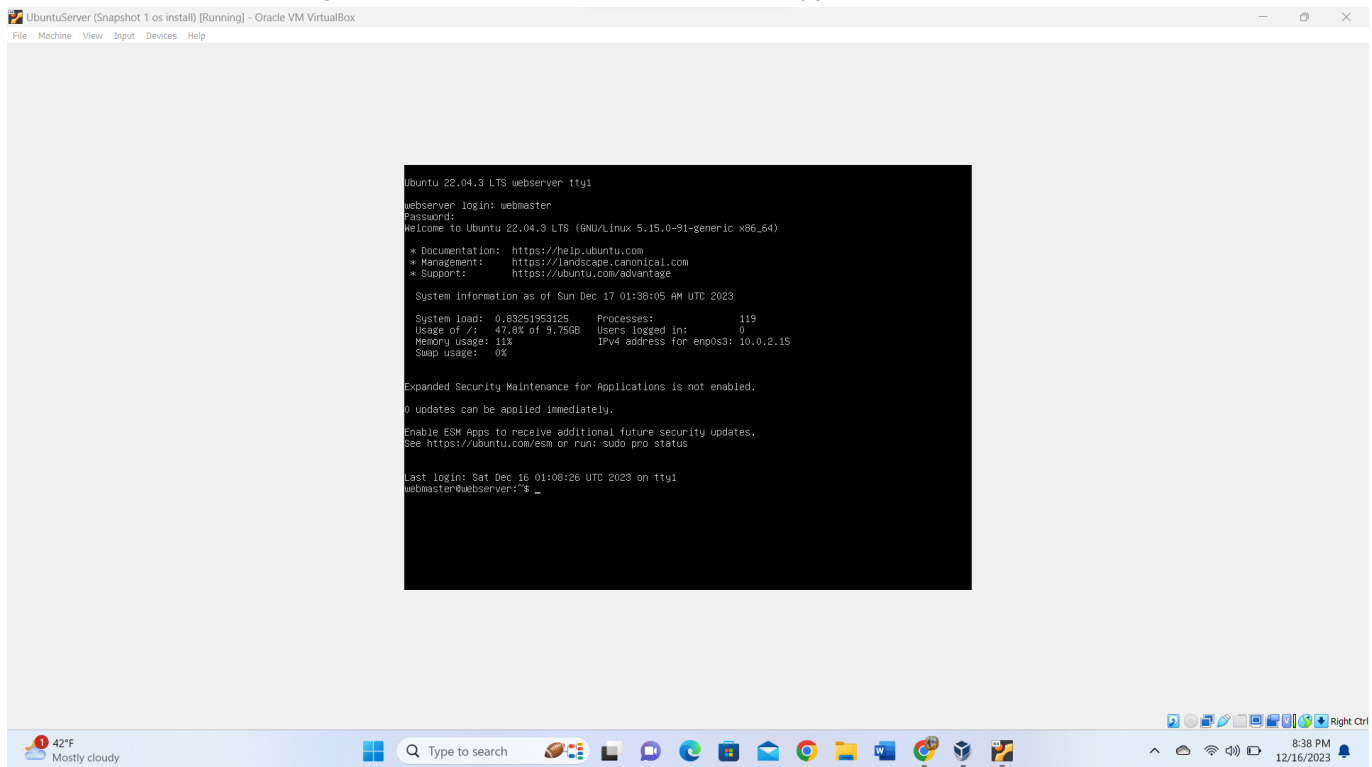What are the server hardware specifications (virtual machine settings)? Take a screenshot - don't type it!



What is Ubuntu server log in screen? Take screenshot - do not type it!



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

10.0.2.15



# How do you enable the Ubuntu Firewall?

sudo ufw enable

```
webmaster@webserver:~$ sudo ufw enable
[sudo] password for webmaster:
Firewall is active and enabled on system startup
webmaster@webserver:~$
```

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

sudo ufw status

```
webmaster@webserver:~$ sudo ufw status
Status: active

To                         Action      From
--                         ------      ----
Apache                     ALLOW       Anywhere
OpenSSH                    ALLOW       Anywhere
Apache (v6)                ALLOW       Anywhere (v6)
OpenSSH (v6)               ALLOW       Anywhere (v6)

webmaster@webserver:~$
```

## How do you disable the Ubuntu Firewall?

sudo ufw disable

```
webmaster@webserver:~$ sudo ufw disable
Firewall stopped and disabled on system startup
webmaster@webserver:~$
```

## How do you add Apache to the Firewall?

sudo ufw allow 'Apache'

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

sudo apt install apache2 -y

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

sudo systemctl status apache2 --no-pager

```
webmaster@webserver:~$ sudo systemctl status apache2 --no-pager
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
     Active: active (running) since Mon 2023-12-18 15:25:33 UTC; 6min ago
       Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 777 (apache2)
      Tasks: 55 (limit: 2220)
     Memory: 7.6M
        CPU: 74ms
     CGroup: /system.slice/apache2.service
             ├─777 /usr/sbin/apache2 -k start
             ├─780 /usr/sbin/apache2 -k start
             └─781 /usr/sbin/apache2 -k start

Dec 18 15:25:33 webserver systemd[1]: Starting The Apache HTTP Server...
Dec 18 15:25:33 webserver systemd[1]: Started The Apache HTTP Server.
webmaster@webserver:~$ _
```

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

sudo systemctl stop apache2 --no-pager

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

sudo systemctl restart apache2 --no-pager

```
webmaster@webserver:~$ sudo systemctl restart apache2 --no-pager
webmaster@webserver:~$
```

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

sudo apache2ctl configtest

```
webmaster@webserver:~$ sudo apache2ctl configtest
Syntax OK
```

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

apache2 -v

```
webmaster@webserver:~$ apache2 -v
Server version: Apache/2.4.52 (Ubuntu)
Server built:   2023-10-26T13:44:44
webmaster@webserver:~$
```

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

To inspect the state of the Apache processes on your system **sudo systemctl status apache2.service -l --no-pager**

To inspect the systemd logs for Apache, you can use the journalctl command **sudo journalctl -u apache2.service --since today --no-pager**
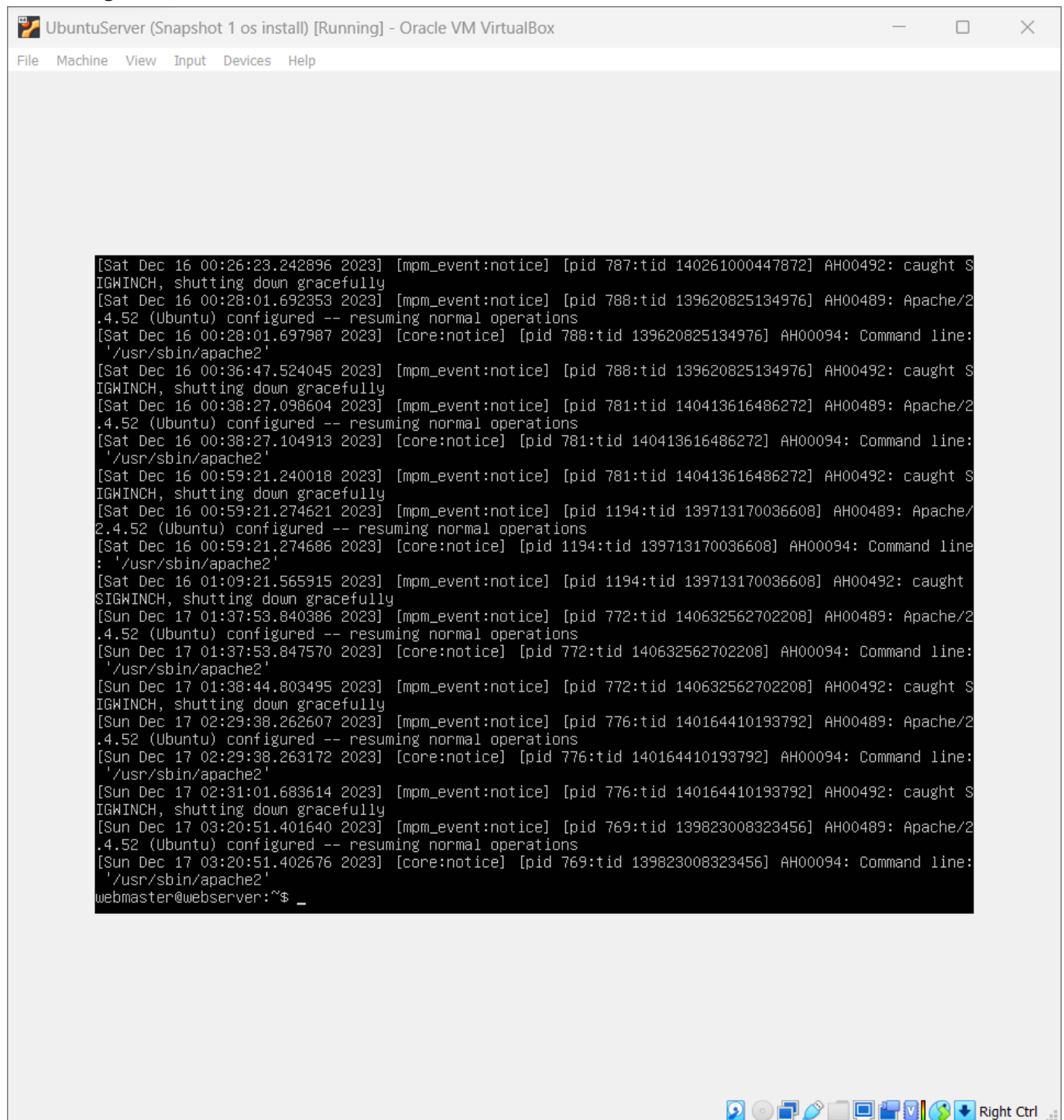
test your Apache configuration using the apachectl configtest command. **sudo apachectl configtest**

To examine log files for errors

**_sudo tail -n 2 /var/log/apache2/error.log_**

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

**_sudo tail -n 2 /var/log/apache2/error.log_** Error Log: This includes server faults, script errors, and requests for missing files.



**_sudo tail -n 2 /var/log/apache2/access.log_** Access Log: records all requests received by the server. Each entry includes details like the client's IP address, request date/time, requested page, HTTP code, and more.

```
webmaster@webserver:~$ sudo cat /var/log/apache2/access.log
10.0.2.2 - - [16/Dec/2023:01:04:14 +0000] "GET / HTTP/1.1" 200 451 "-" "Mozilla/5.0 (Windows NT 10.0
; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/120.0.0.0 Safari/537.36"
10.0.2.2 - - [16/Dec/2023:01:04:14 +0000] "GET /favicon.ico HTTP/1.1" 404 489 "http://127.0.0.1:8080
/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/120.0.0.
0 Safari/537.36"
10.0.2.2 - - [16/Dec/2023:01:05:06 +0000] "-" 408 0 "-" "-"
webmaster@webserver:~$
```