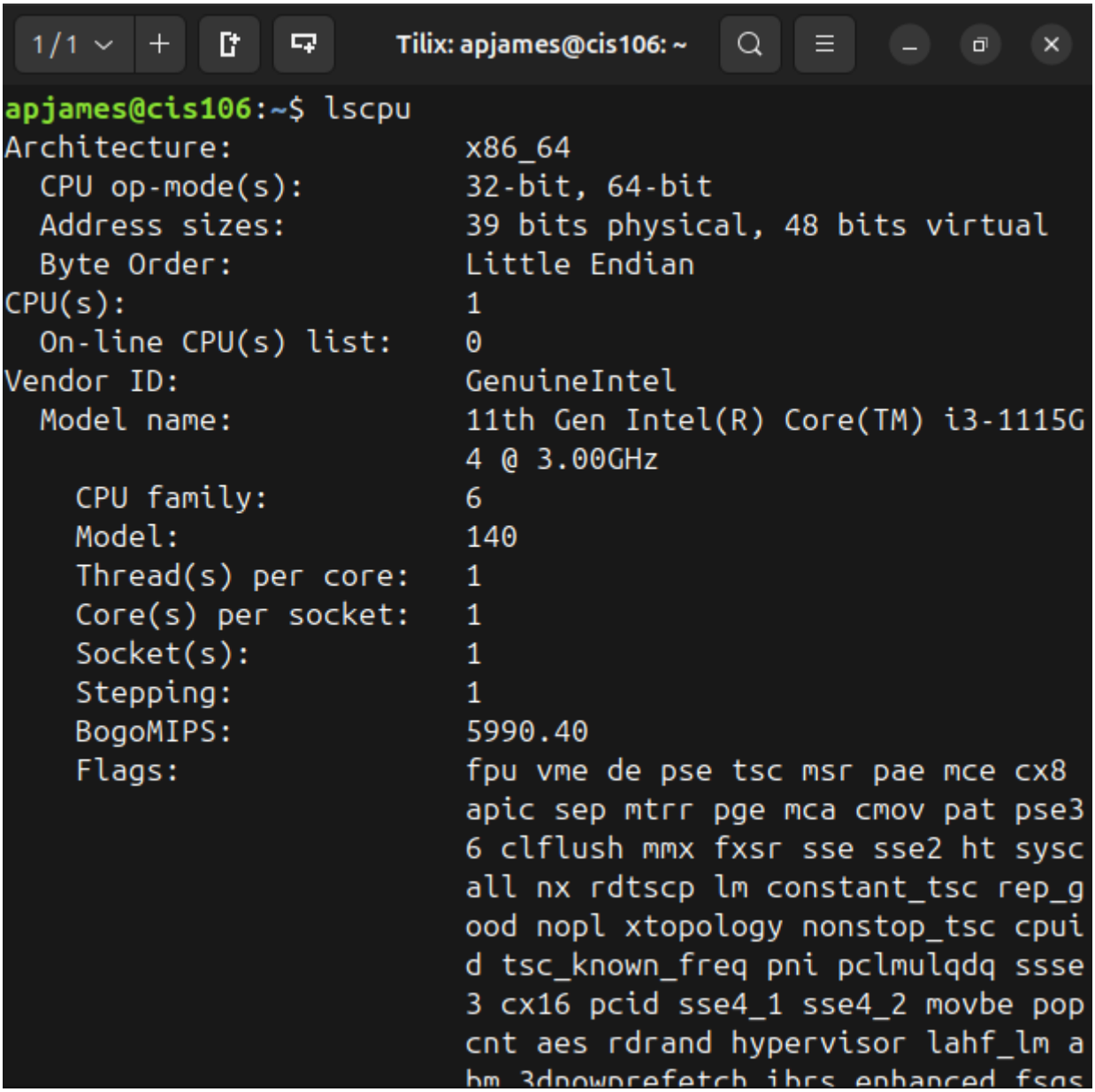
Deliverable 2

What is Ubuntu server hardware specification



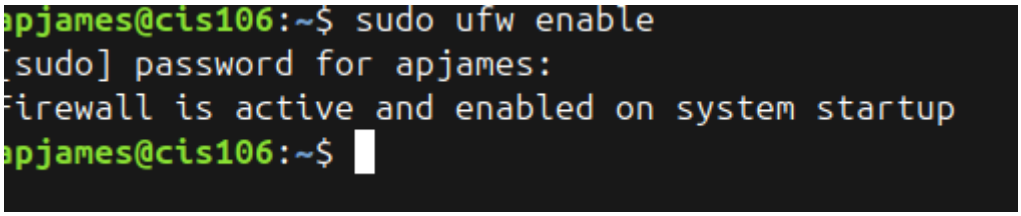
What is Ubuntu server log in screen

What is the IP address of your Ubuntu server virtual machine?

- 127.0.0.1

How do you enable the Ubuntu Firewall?

- sudo ufw enable



How do you add Apache to the Firewall?

- sudo ufw enable "Apache"

```
apjames@cis106:~$ sudo ufw allow "Apache"
Rule added
Rule added (v6)
```

What is the command you used to install Apache?

- sudo apt install apache2

```
apjames@cis106:~$ sudo apt install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
apache2 is already the newest version (2.4.58-1ubuntu8.6).
The following package was automatically installed and is no long
er required:
  libboost-program-options1.83.0
Use 'sudo apt autoremove' to remove it.
0 upgraded, 0 newly installed, 0 to remove and 122 not upgraded.
```

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

- sudo systemctl status apache2

```
apjames@cis106:~$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/apache2.service; e>
     Active: active (running) since Mon 2025-05-12 11:11:35 EDT>
       Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 11377 (apache2)
      Tasks: 55 (limit: 5826)
     Memory: 5.4M (peak: 5.5M)
        CPU: 446ms
     CGroup: /system.slice/apache2.service
             ├─11377 /usr/sbin/apache2 -k start
             ├─11378 /usr/sbin/apache2 -k start
             └─11380 /usr/sbin/apache2 -k start

May 12 11:11:35 cis106 systemd[1]: Starting apache2.service - T>
May 12 11:11:35 cis106 apachectl[11376]: AH00558: apache2: Coul>
May 12 11:11:35 cis106 systemd[1]: Started apache2.service - Th>
lines 1-16/16 (END)
```

What is the command you use to stop Apache?

- sudo systemctl stop apache2

```
apjames@cis106:~$ sudo systemctl stop apache2
```

What is the command you use to restart Apache?

- sudo systemctl restart apache2

```
apjames@cis106:~$ sudo systemctl restart apache2
```

What is the command used to test Apache configuration?

- sudo apachectl config

```
apjames@cis106:~$ sudo apachectl config
Usage: /usr/sbin/apache2 [-D name] [-d directory] [-f file]
                         [-C "directive"] [-c "directive"]
                         [-k start|restart|graceful|graceful-sto
p|stop]
                         [-v] [-V] [-h] [-l] [-L] [-t] [-T] [-S]
 [-X]
Options:
  -D name            : define a name for use in <IfDefine name>
directives
  -d directory       : specify an alternate initial ServerRoot
  -f file            : specify an alternate ServerConfigFile
  -C "directive"     : process directive before reading config f
iles
  -c "directive"     : process directive after reading config fi
```

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

- apache2 -v

```
apjames@cis106:~$ apache2 -v
Server version: Apache/2.4.58 (Ubuntu)
Server built:   2025-04-03T14:36:49
apjames@cis106:~$
```

ufw

This is used for managing firewall rules in Linux. It simplifies configuration by providing an easy-to-use command-line interface.

How it works

- Allows or block network traffic
- It works by enabling and defining rules for ports, services, and IP addresses.
- It helps secure a server by restricing access while permitting neccessary connections.

Examples

- Allowing Apache web server traffic

    - sudo ufw allow 80/tcp
- Denying incoming SSH connections
    - sudo ufw deny 22/tcp

systemctl

a system and service manager for Linux, used to control systemd services. It allows users to start, stop, restart, enable, disable, and check the status of services running on Linux system.

How it works

- It interacts with systemd, which is responsible for managing services and processes
- It can control services, manage system states, and handle system boots.

Example

- Checking the status of Apache Web server
    - sudo systemctl ststus apache2
- enabling SSH on startup
    - sudo systemctl enable ssh

What are the most common commands to troubleshoot Apache errors?

- View Apache error log
    - sudo tail -f /var/log/apache2/error.log
        - Using this command allows you to see error messages as they occur, which is useful for debugging issues with your Apache server. If you’re troubleshooting a problem, looking for patterns in the errors can help identify configuration issues or unexpected behavior.

Which are the common Apache Log Files and what are they used for?

- - Access Log (/var/log/apache2/access.log or /var/log/httpd/access_log): Records details about every request made to the server, including client IP addresses, requested URLs, status codes, and user agents. Useful for analyzing traffic and identifying potential security threats
- - Error Log (/var/log/apache2/error.log or /var/log/httpd/error_log): Logs warnings, errors, and other diagnostic messages from the server. Helps in debugging misconfigurations, failed requests, and application errors
- - SSL Access Log (/var/log/apache2/ssl_access.log): Similar to the access log but specifically for HTTPS requests. Useful for monitoring secure traffic