

Ubuntu Linux 24.04 LTS Installation

Lenovo ThinkStation P4

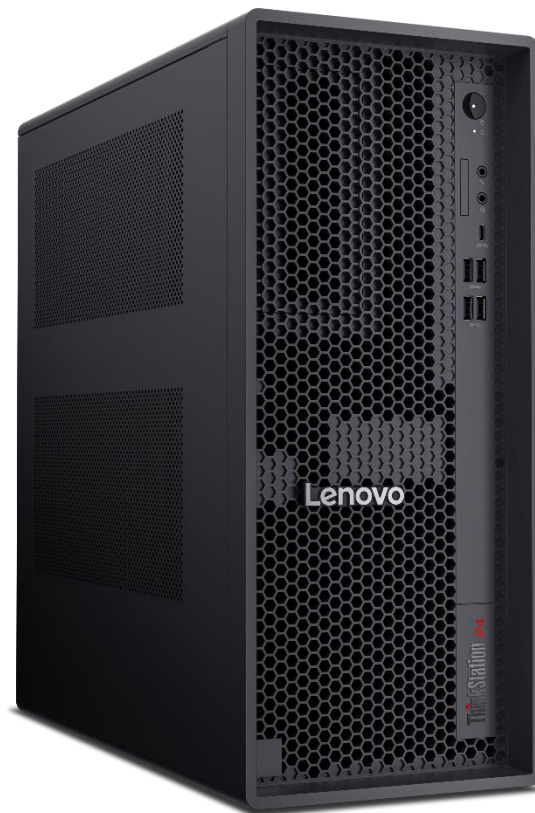


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Overview

The purpose of this document is intended to provide general guidance for users to properly install an Ubuntu Linux 24.04 LTS operating system¹ on the Lenovo ThinkStation P4 platform.

¹ The official certified Ubuntu Linux version is 24.04.4 LTS.

Section 1 – BIOS Setup

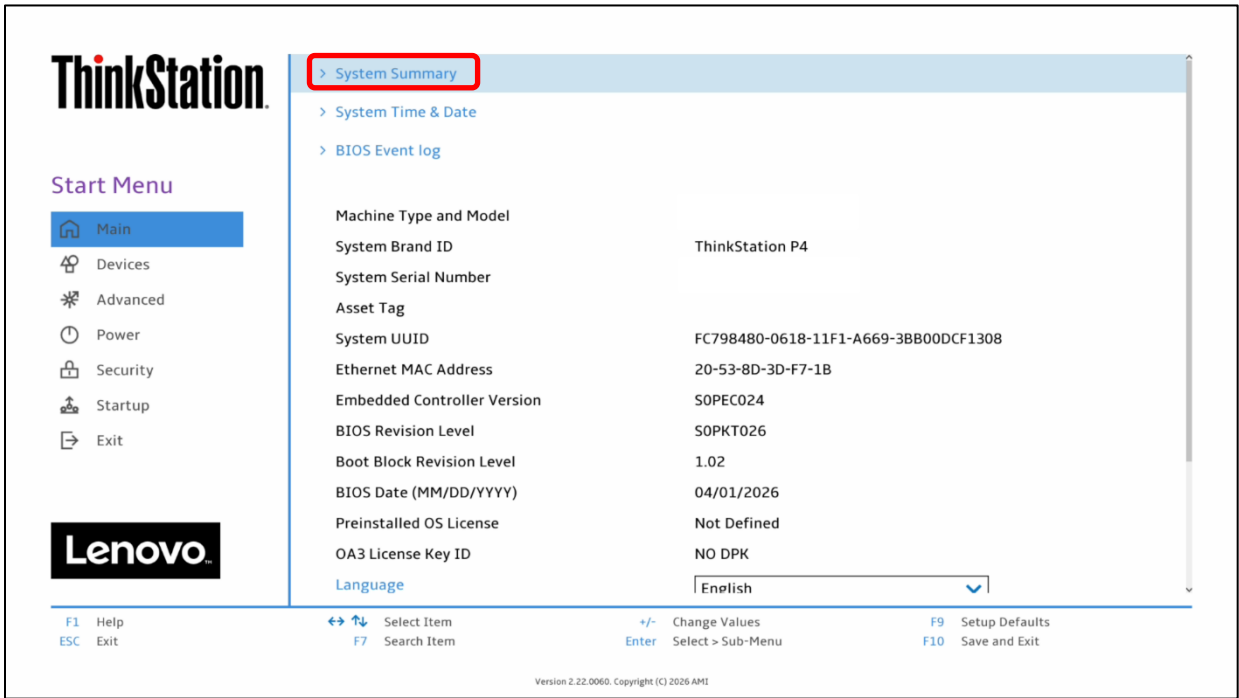
Prior to installing any operating system, it is important to make sure BIOS is set up properly for the intended operating system. It will also be worthwhile to make sure components in the actual system are being properly detected by BIOS prior to installing the intended operating system. Here are some key items to look for within the BIOS setup menu.

Note: Ubuntu Linux does NOT support bootable hardware RAID.

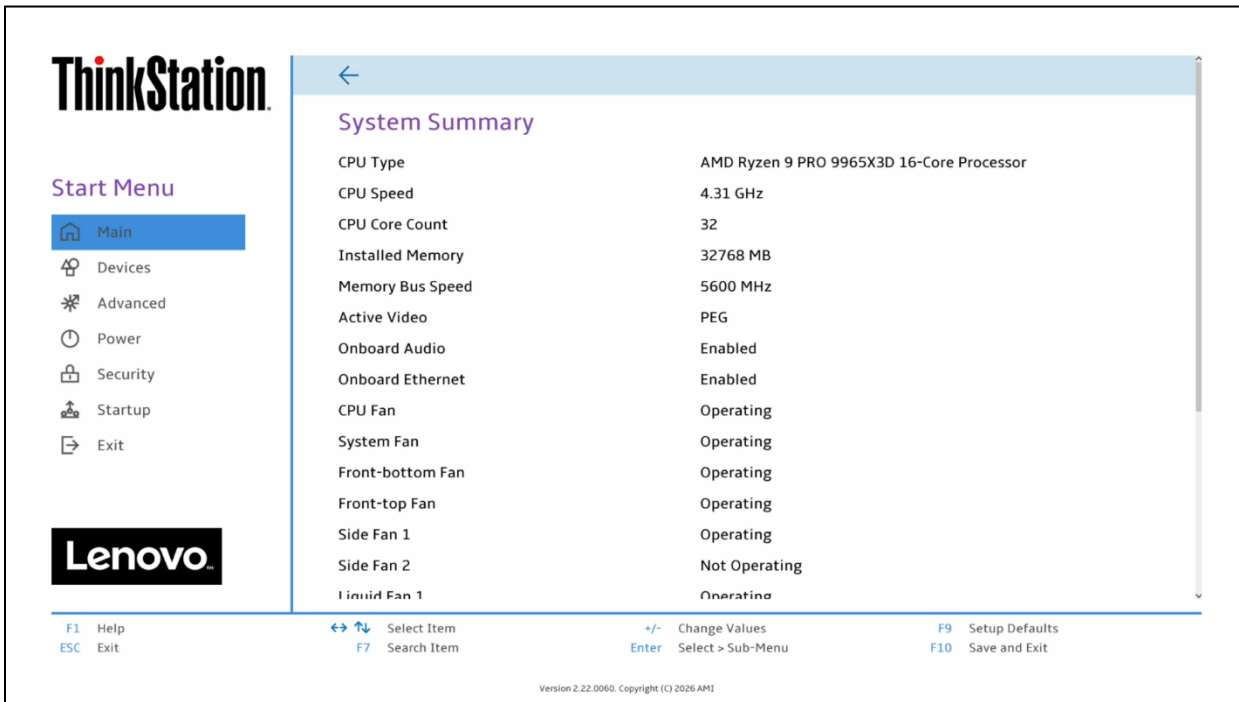
At the Lenovo splash screen, press the function key F1 to enter BIOS setup.



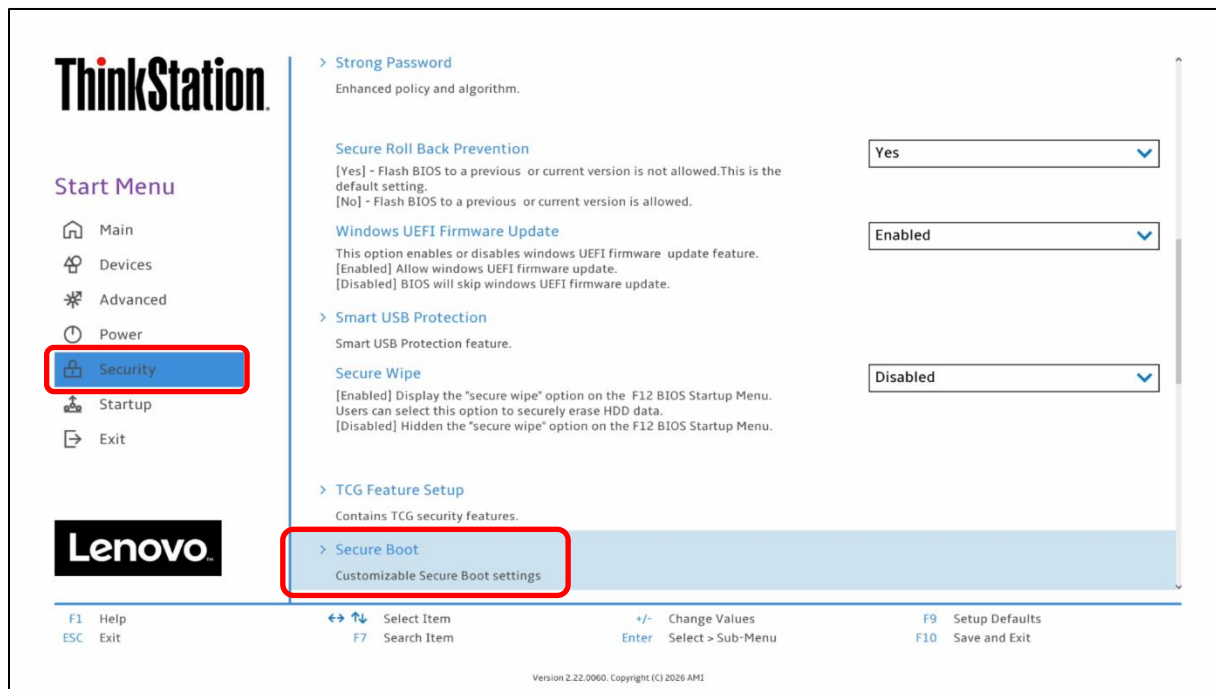
Select the *SYSTEM SUMMARY* option from the main BIOS setup page.



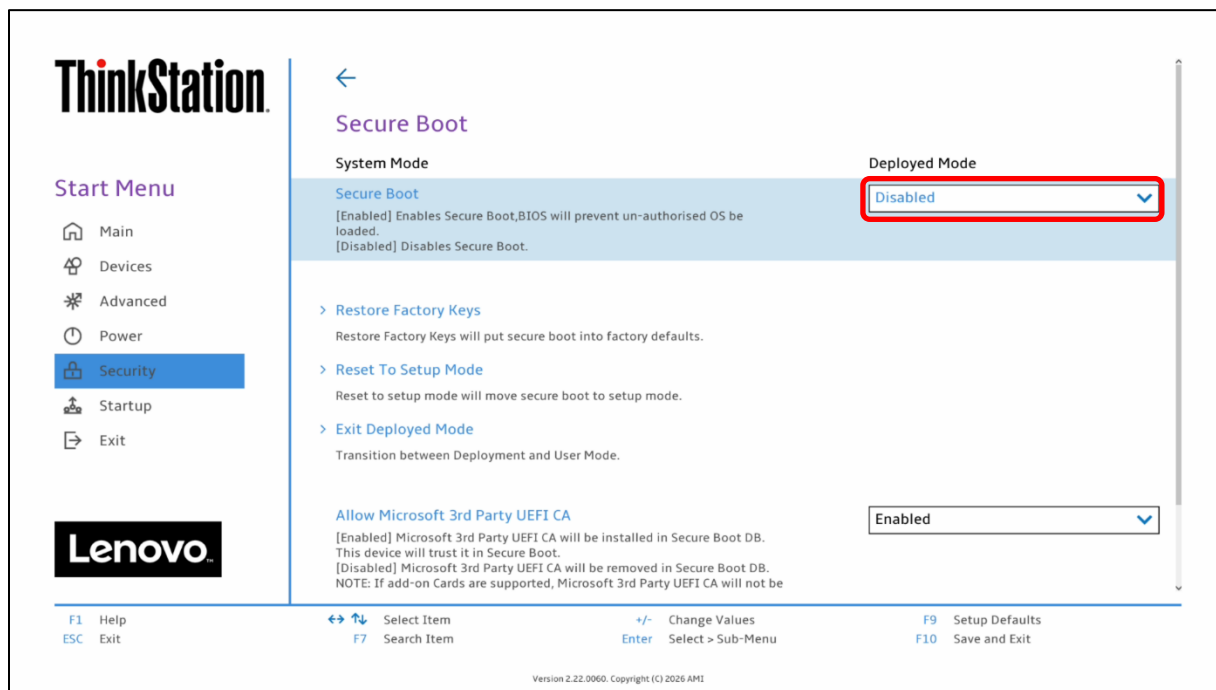
Verify whether BIOS recognizes each component in the system properly.



Select the **SECURITY** menu option and **SECURE BOOT**.

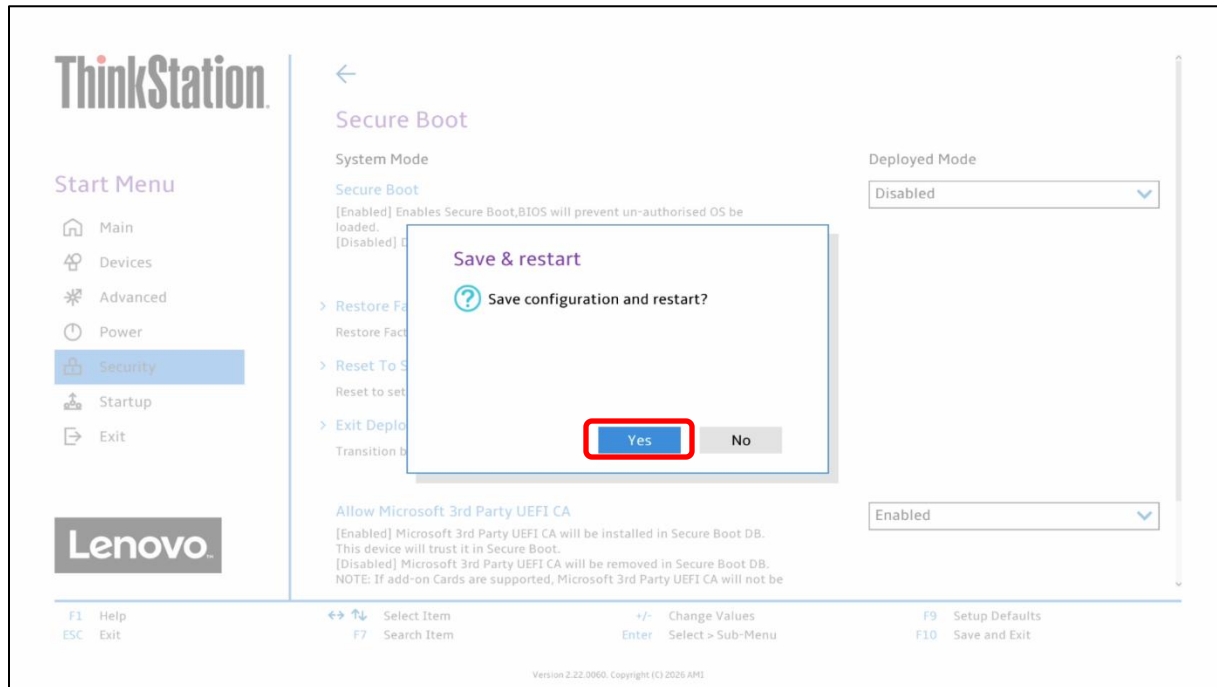


Select **DISABLED** from the drop-down menu.



Once BIOS settings have been verified and properly configured, press function key F10 to *SAVE AND EXIT* BIOS setup.

And select yes to save configuration and reset.

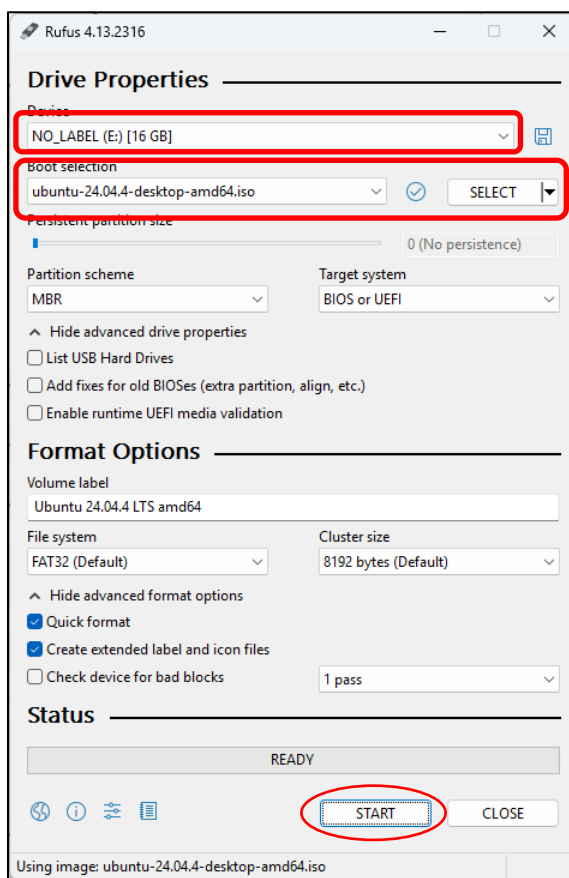


Section 2 - Ubuntu 24.04 LTS Installation

Here are some general instructions on how to get an Ubuntu Linux 24.04 LTS operating system installed on the Lenovo ThinkStation P5 Gen 2 platform.

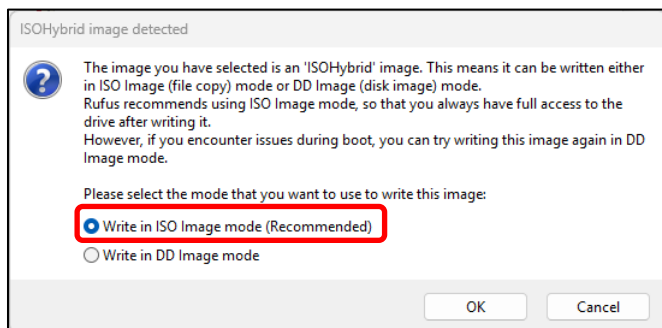
1. Obtain a copy of the Ubuntu 24.04 LTS installation media.
<https://ubuntu.com/download/desktop>
2. Extract the installation media to a USB memory key. In this example, Rufus was used in creating the USB memory key.

In the Rufus menu, select the USB drive under the *DEVICE* option and select the installation media .iso file under the *BOOT SELECTION*.

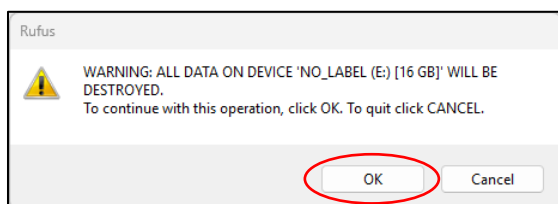


Select *START* to begin making the USB bootable media.

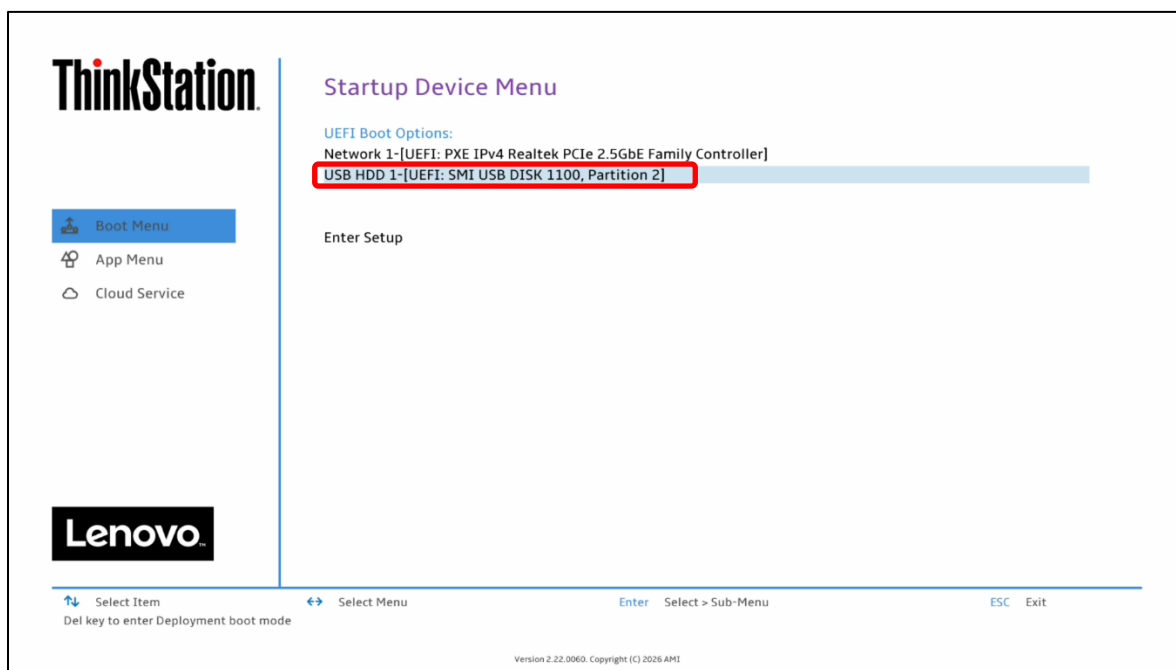
3. Select the option for “Write in ISO Image mode (Recommended)”.



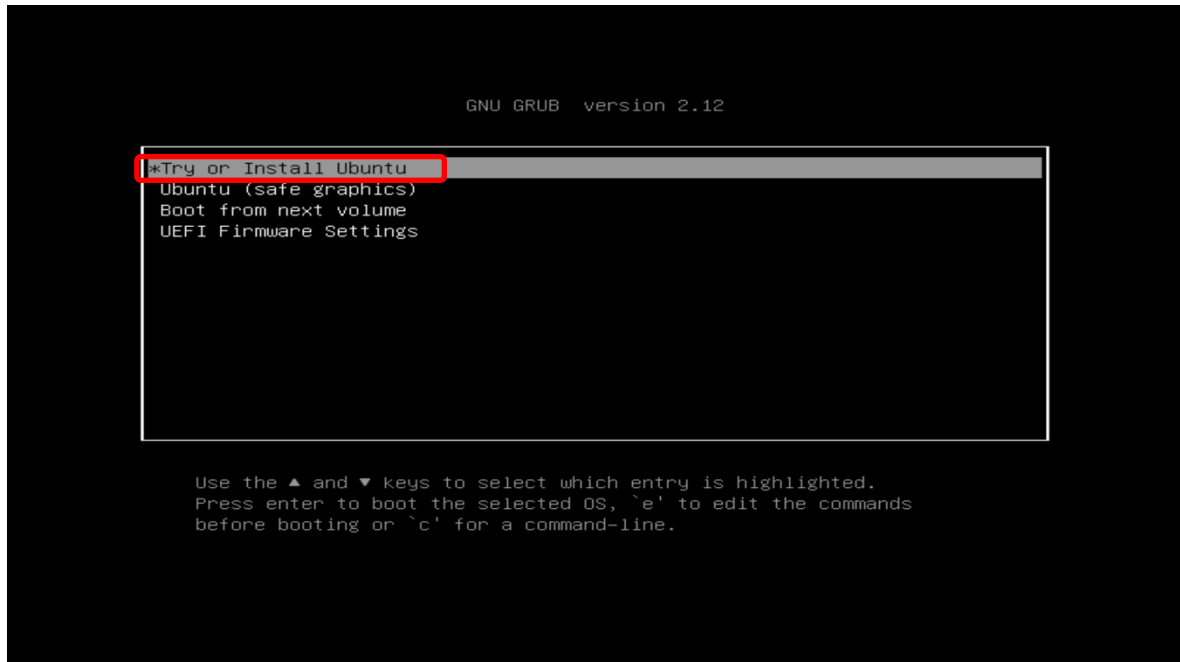
4. Select OK on the following warning message.



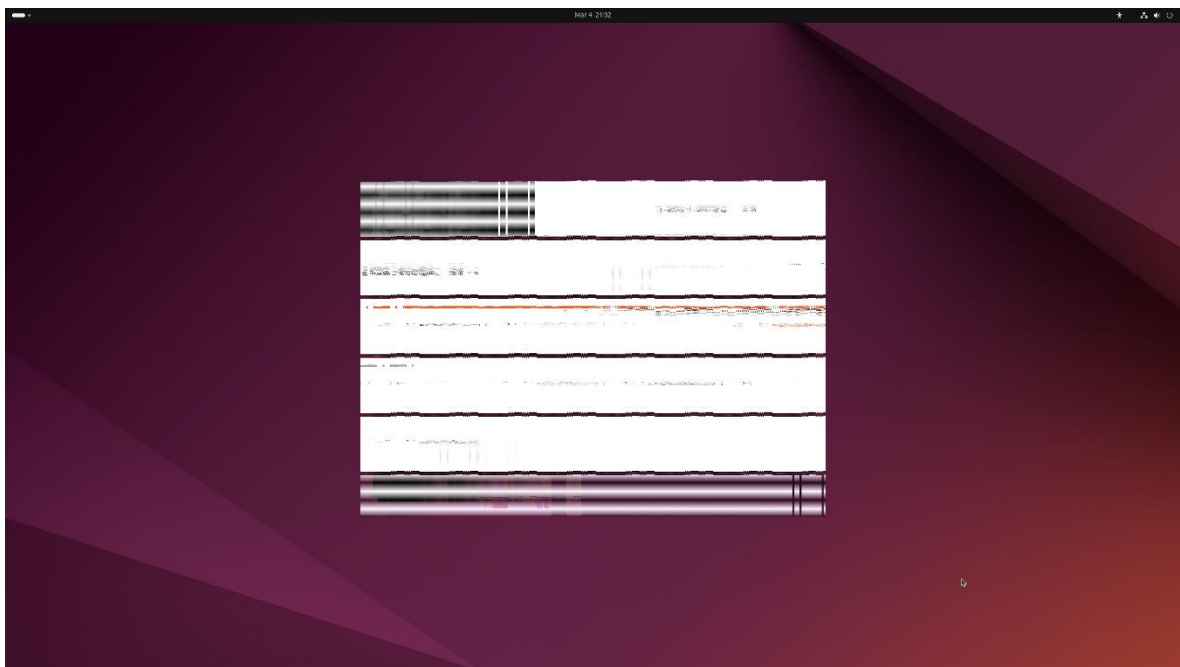
5. Insert the USB memory key into one of the USB ports on the system and power on the system.
6. At the Lenovo splash screen, press the function F12 key to enter the BIOS startup menu and select the USB installation media from the list.



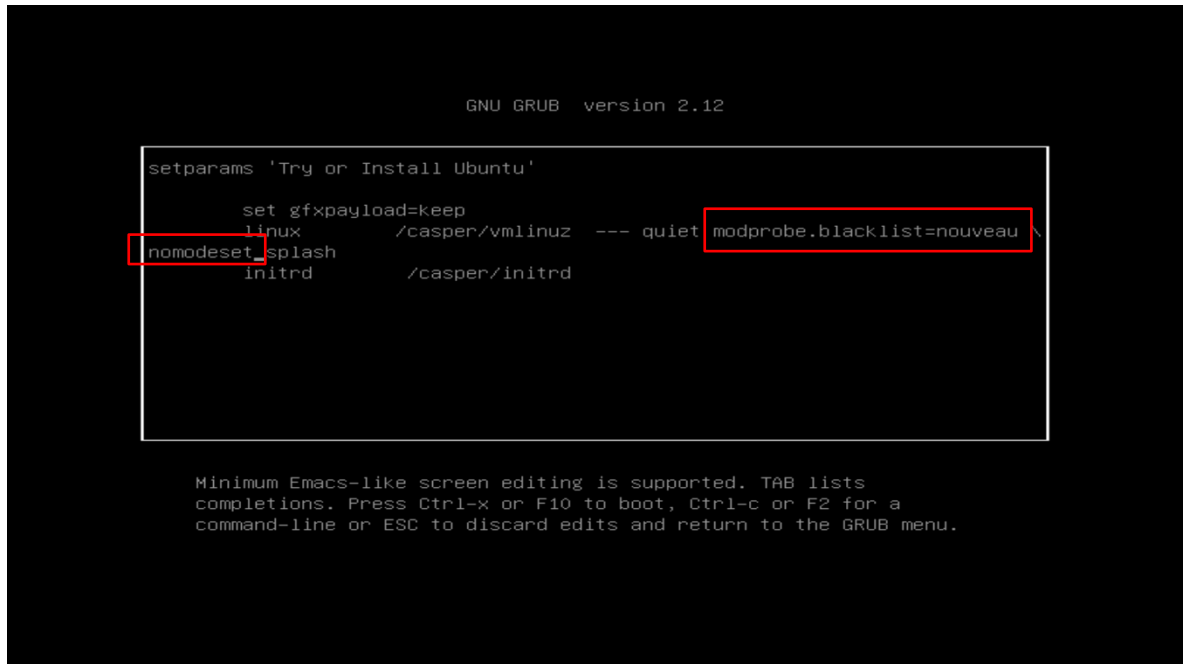
- At the Linux GRUB boot menu, select the option for “Try or Install Ubuntu” from the list and select ENTER.



- If the graphics fail to load properly, similar to the following screenshot, reboot the system into the Linux GRUB boot menu and press ‘e’ to edit the Linux command line parameters.



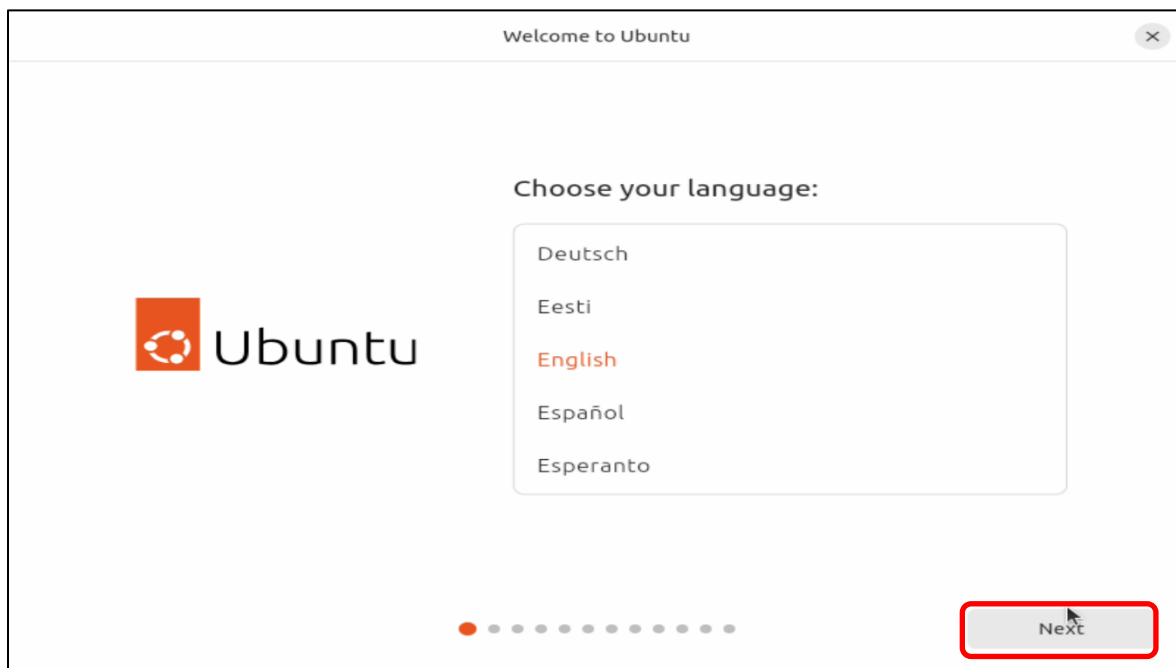
9. Add the following line, “*modprobe.blacklist=nouveau nomodeset*”, to the Linux command line parameter as shown here and press *CTRL-X* to boot.



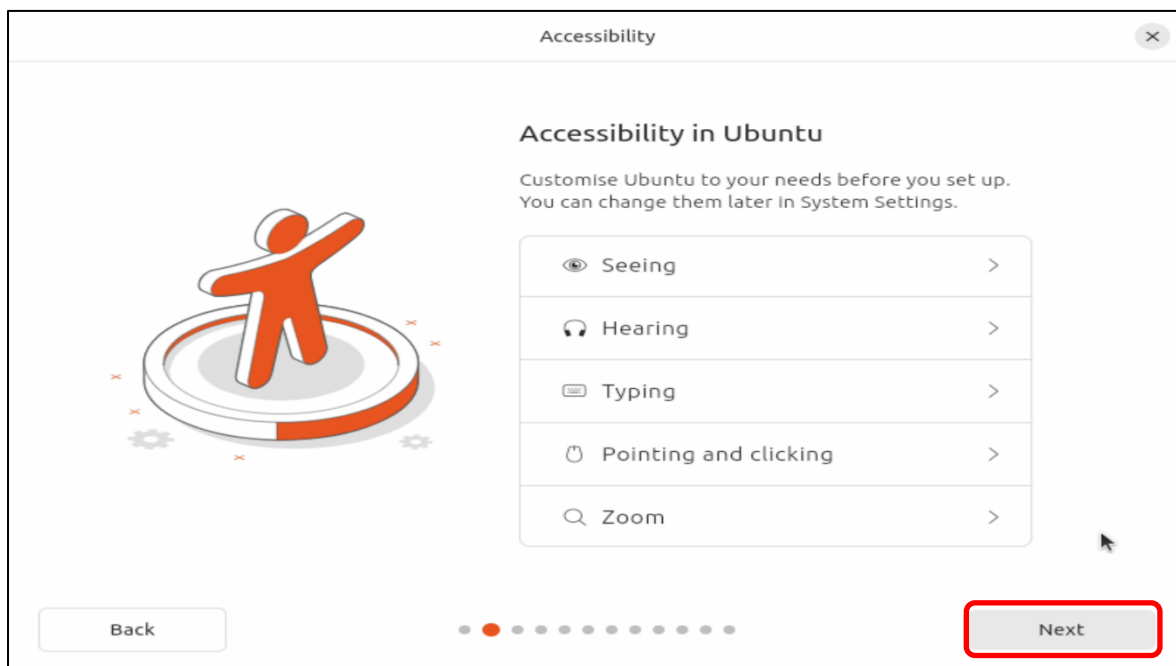
10. The Linux installer should start to load as shown here.



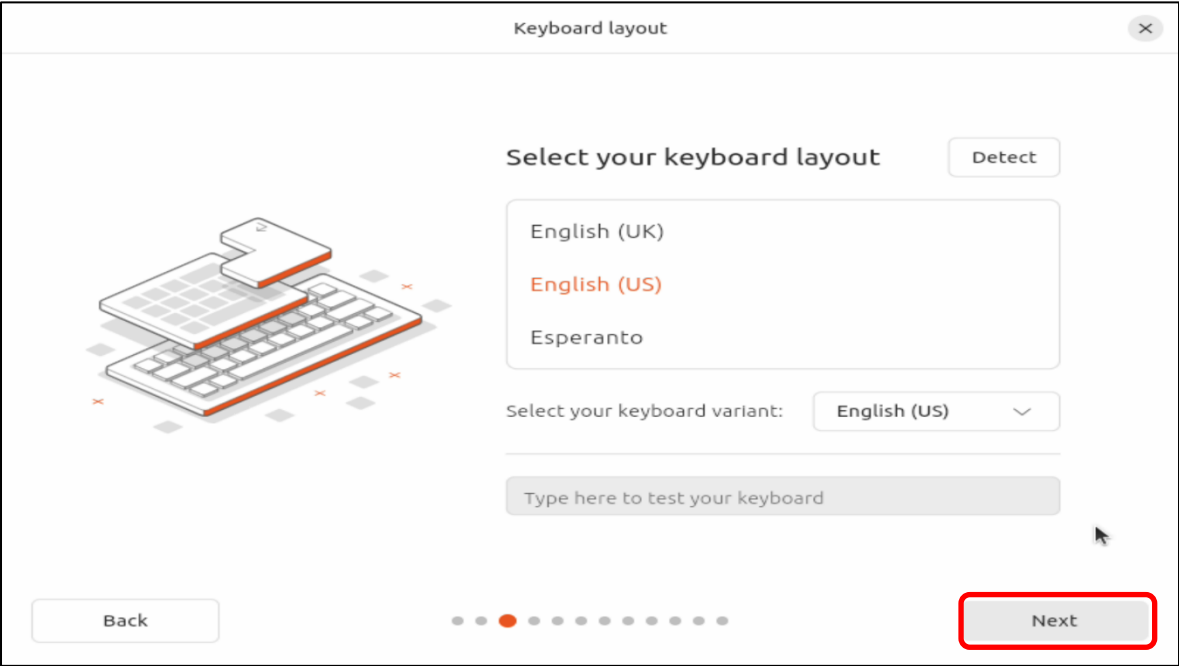
11. On the *WELCOME TO UBUNTU* screen, choose the language and select *NEXT*.



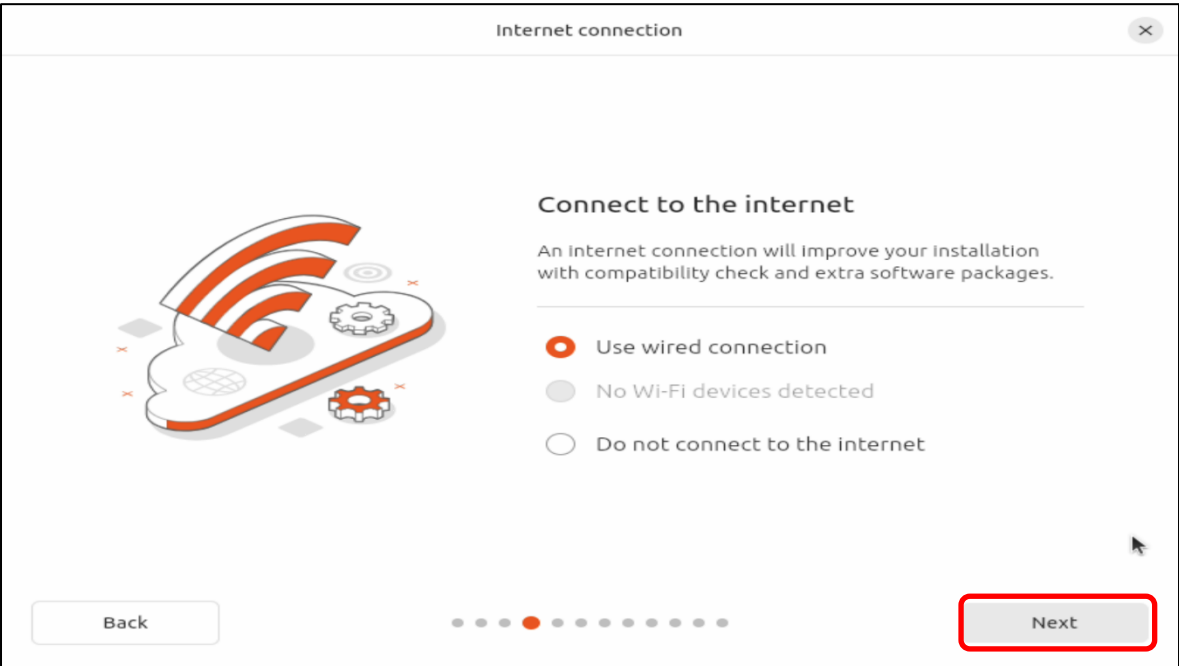
12. On the *ACCESSIBILITY* screen, select *NEXT*.



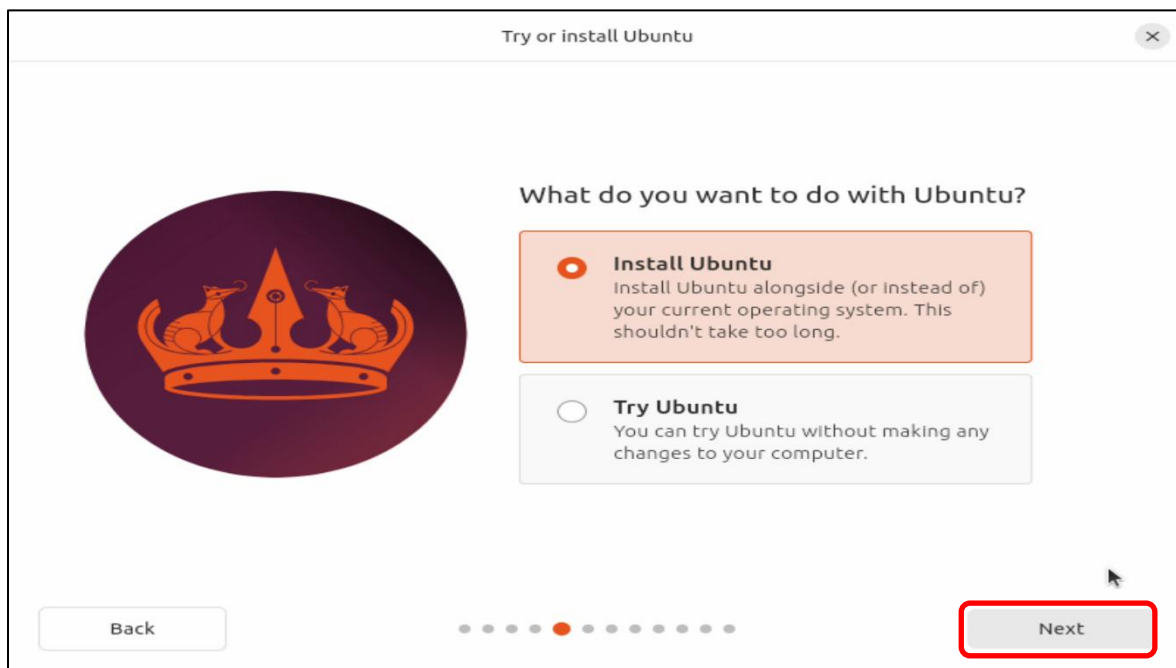
13. On the *KEYBOARD LAYOUT* screen, select the appropriate option and select *NEXT*.



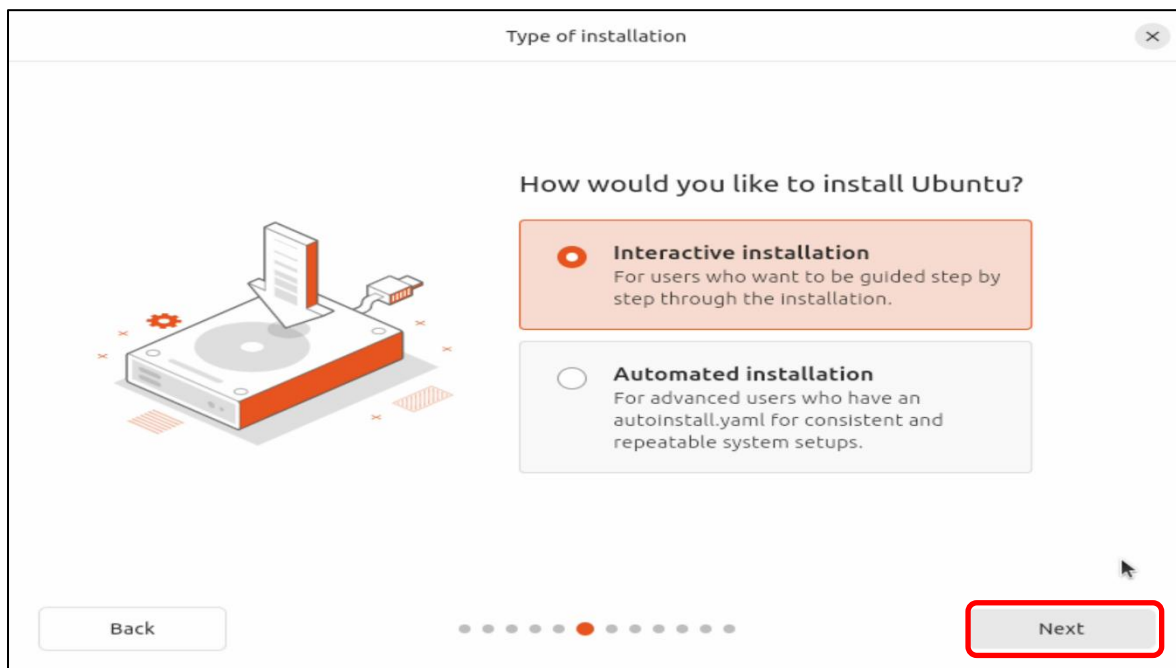
14. On the *INTERNET CONNECTION* screen, select *NEXT*.



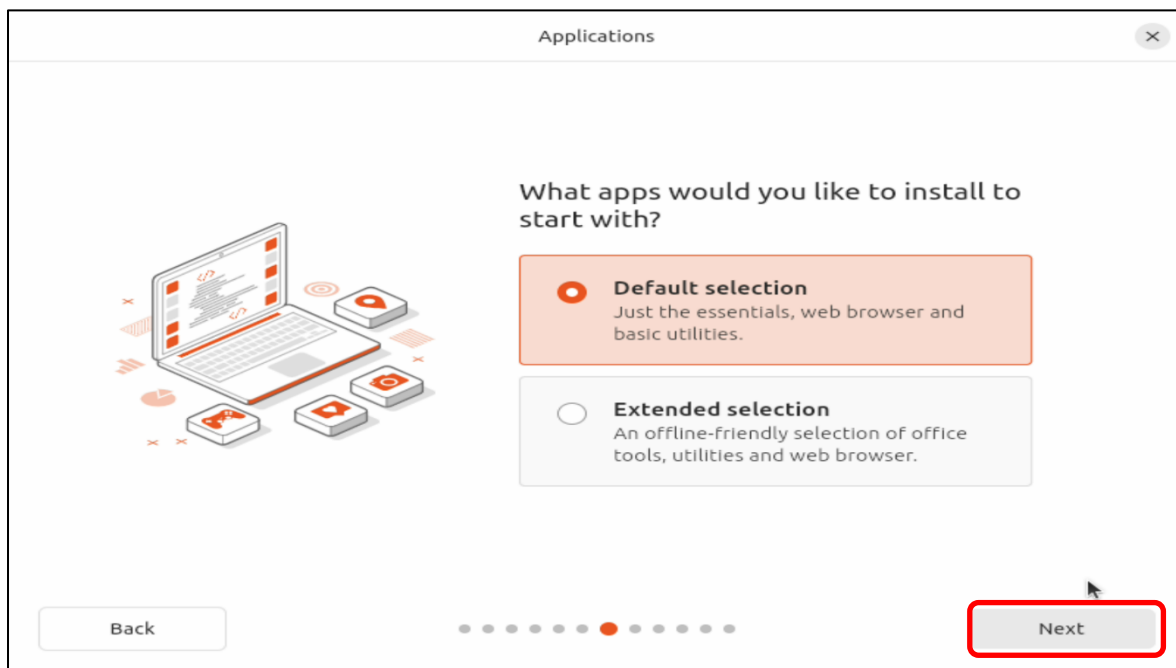
15. On the *TRY OR INSTALL UBUNTU* screen, select *INSTALL UBUNTU* and select *NEXT*.



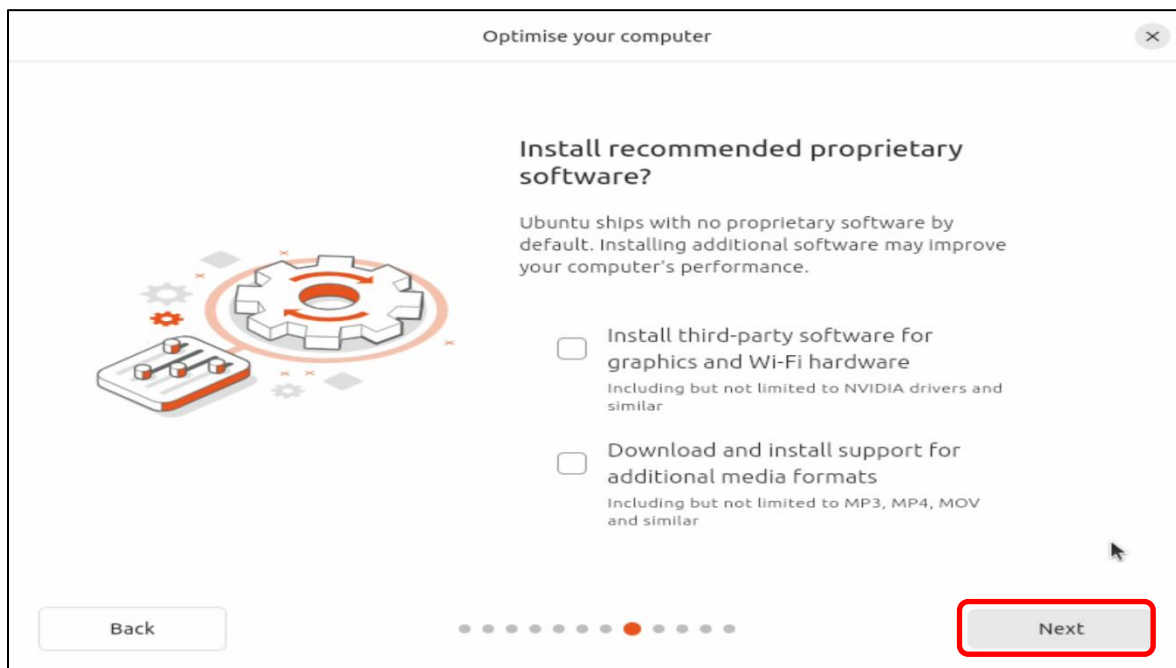
16. On the *TYPE OF INSTALLATION* screen, select *INTERACTIVE INSTALLATION* and select *NEXT*.



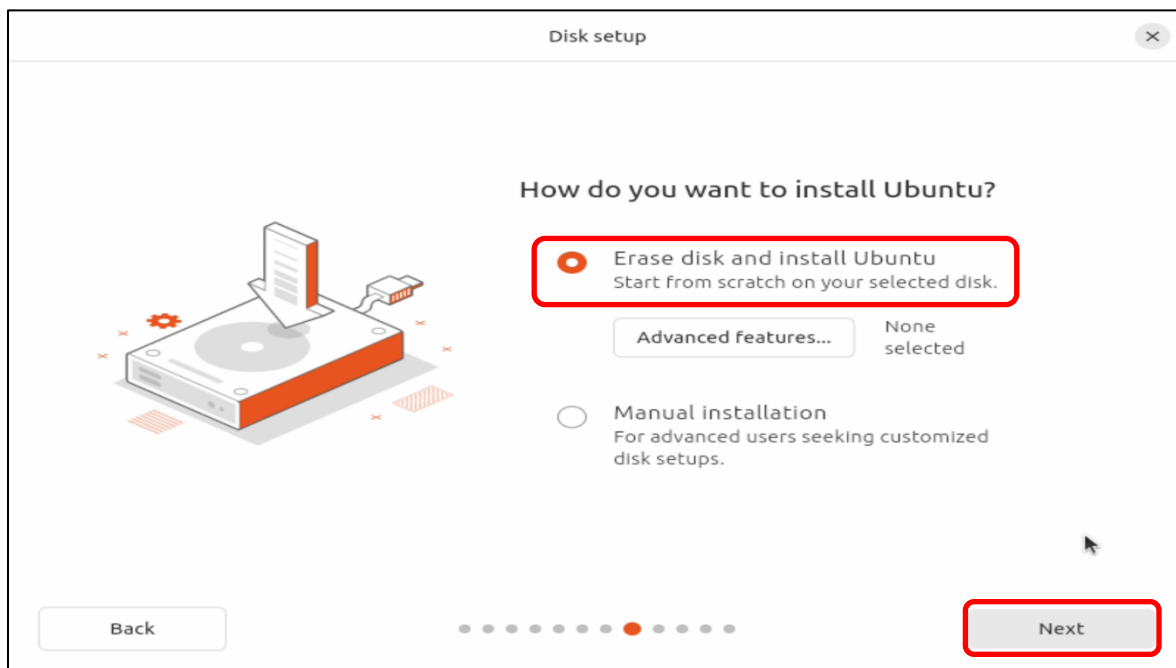
17. On the *APPLICATIONS* screen, select *DEFAULT SELECTION* and select *NEXT*.



18. On the *OPTIMISE YOUR COMPUTER* screen, select the desired options, then select *NEXT*.

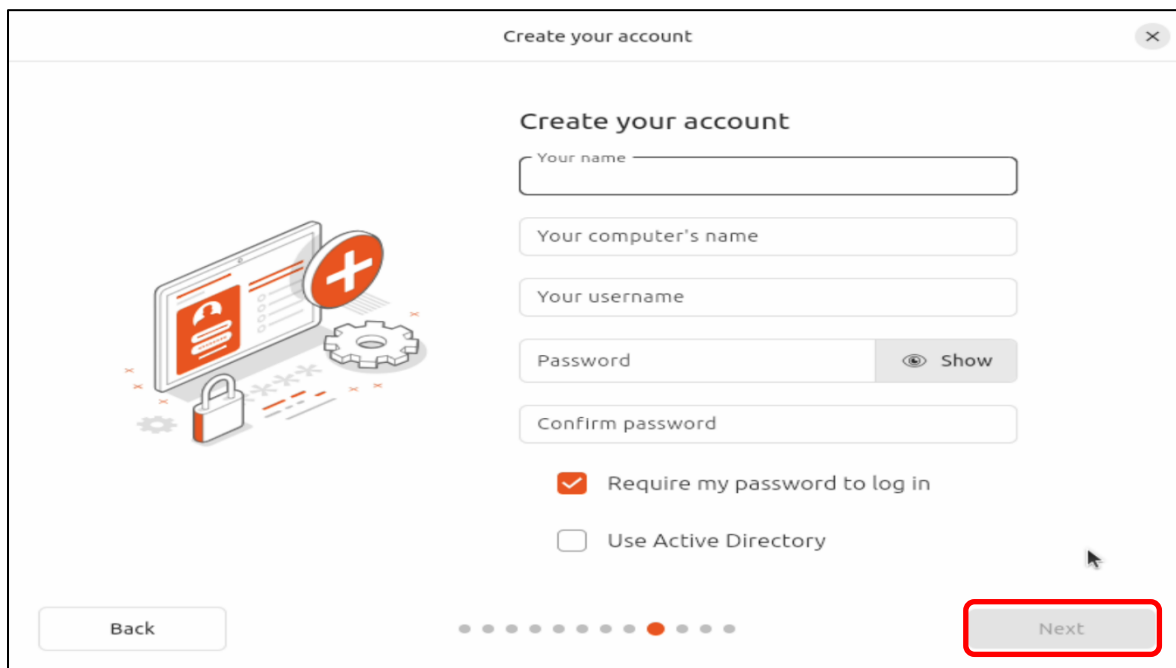


19. On the *DISK SETUP* screen, select *ERASE DISK AND INSTALL UBUNTU*, and select *NEXT*.



The screenshot shows the 'Disk setup' window. On the left is an illustration of a hard drive with a document icon and a USB cable. The main heading is 'How do you want to install Ubuntu?'. There are two radio button options: 'Erase disk and install Ubuntu' (which is selected and highlighted with a red box) and 'Manual installation'. Below the first option is a button labeled 'Advanced features...' and the text 'None selected'. Below the second option is the text 'For advanced users seeking customized disk setups.' At the bottom, there are 'Back' and 'Next' buttons, with the 'Next' button highlighted by a red box. A progress bar at the bottom center shows 10 dots, with the 4th dot from the left being red.

20. On the *CREATE YOUR ACCOUNT* screen, fill in the appropriate boxes accordingly and select *NEXT*.



The screenshot shows the 'Create your account' window. On the left is an illustration of a laptop with a plus sign icon, a gear, and a padlock. The main heading is 'Create your account'. Below it are five input fields: 'Your name', 'Your computer's name', 'Your username', 'Password' (with a 'Show' button), and 'Confirm password'. Below the input fields are two checkboxes: 'Require my password to log in' (which is checked) and 'Use Active Directory'. At the bottom, there are 'Back' and 'Next' buttons, with the 'Next' button highlighted by a red box. A progress bar at the bottom center shows 10 dots, with the 4th dot from the left being red.

In this example, here's how these boxes were filled out.



Create your account

Your name
lenovo

Your computer's name
lenovo-ThinkStation-P5-Gen-2

Your username
lenovo

Password

•••••

Show

Weak password

Confirm password

•••••

☒ Require my password to log in

☐ Use Active Directory

Back

Next

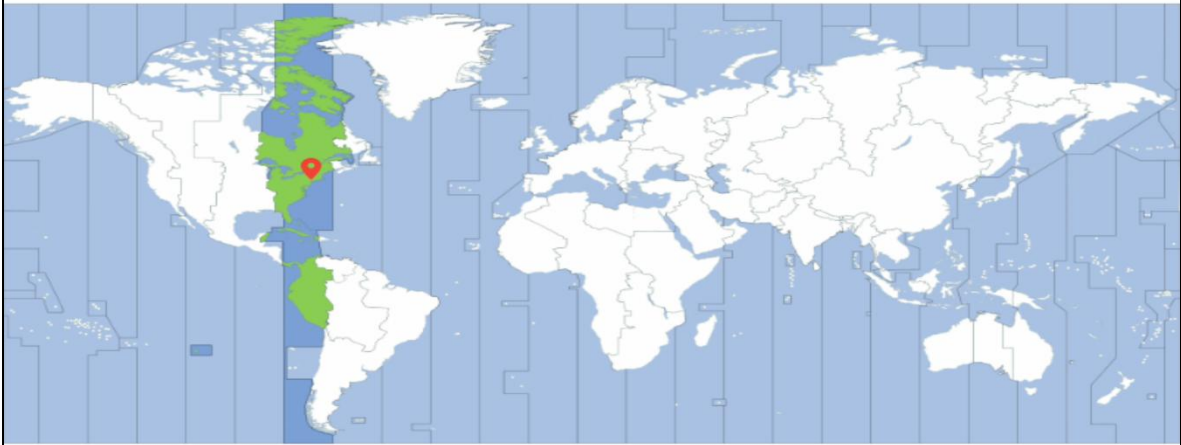
21. On the *SELECT YOUR TIMEZONE* screen, select the appropriate time zone and select *NEXT*.

Location

New York City (New York, United States)

Timezone

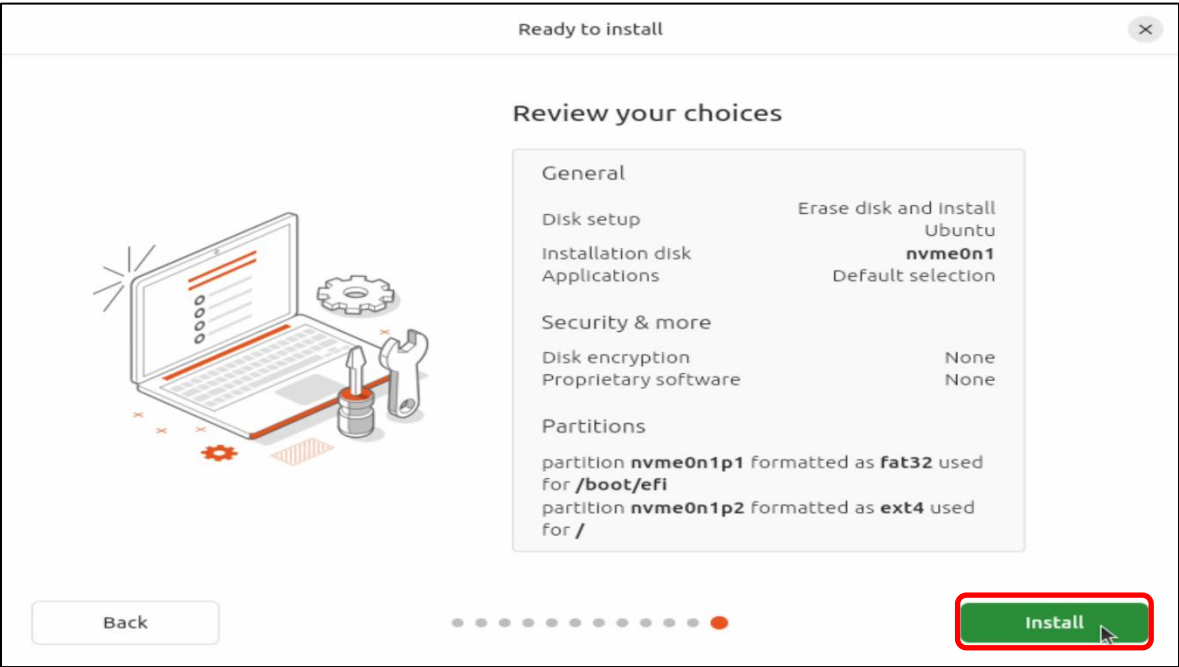
America/New York



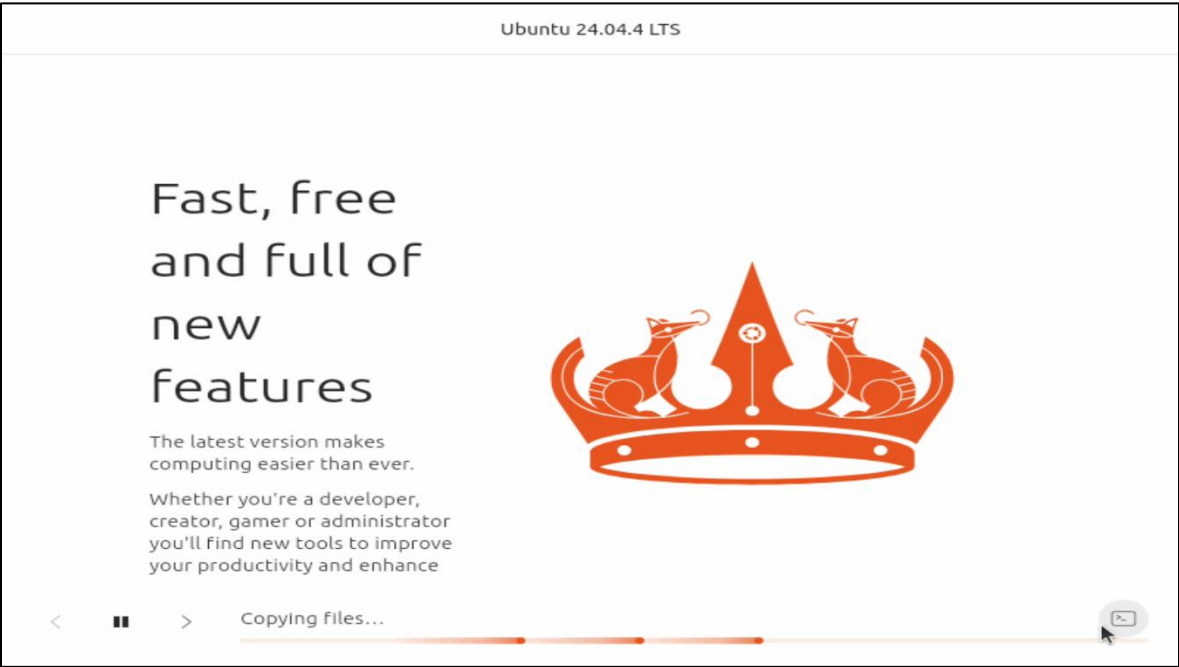
Back

Next

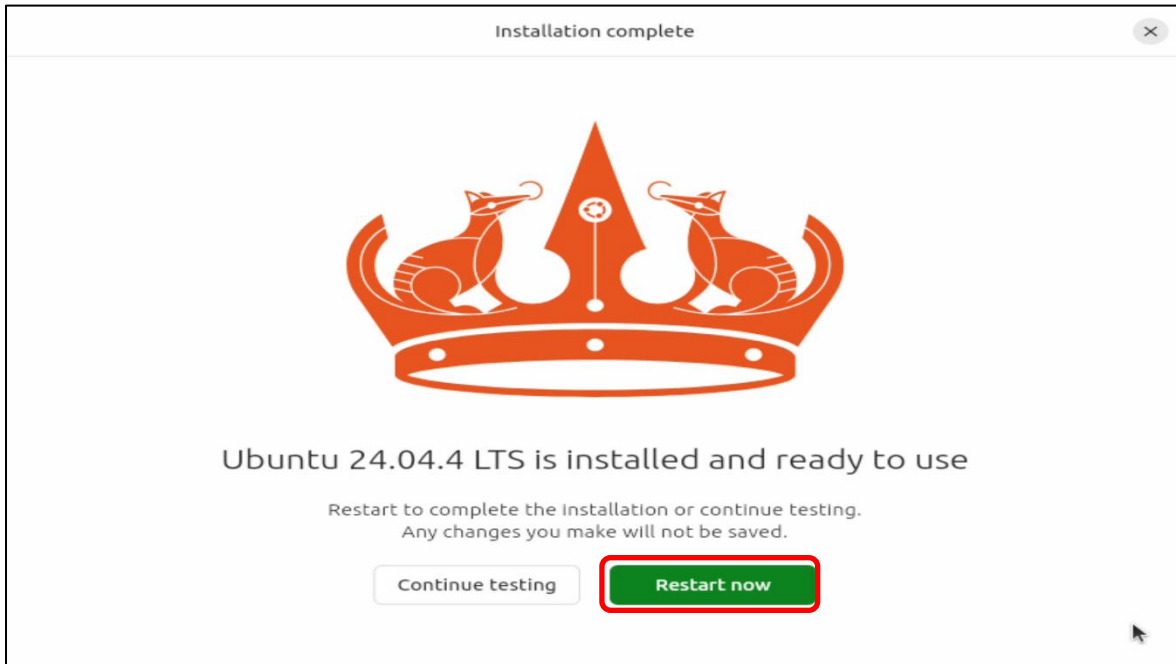
22. On the *READY TO INSTALL* screen, select *INSTALL*.



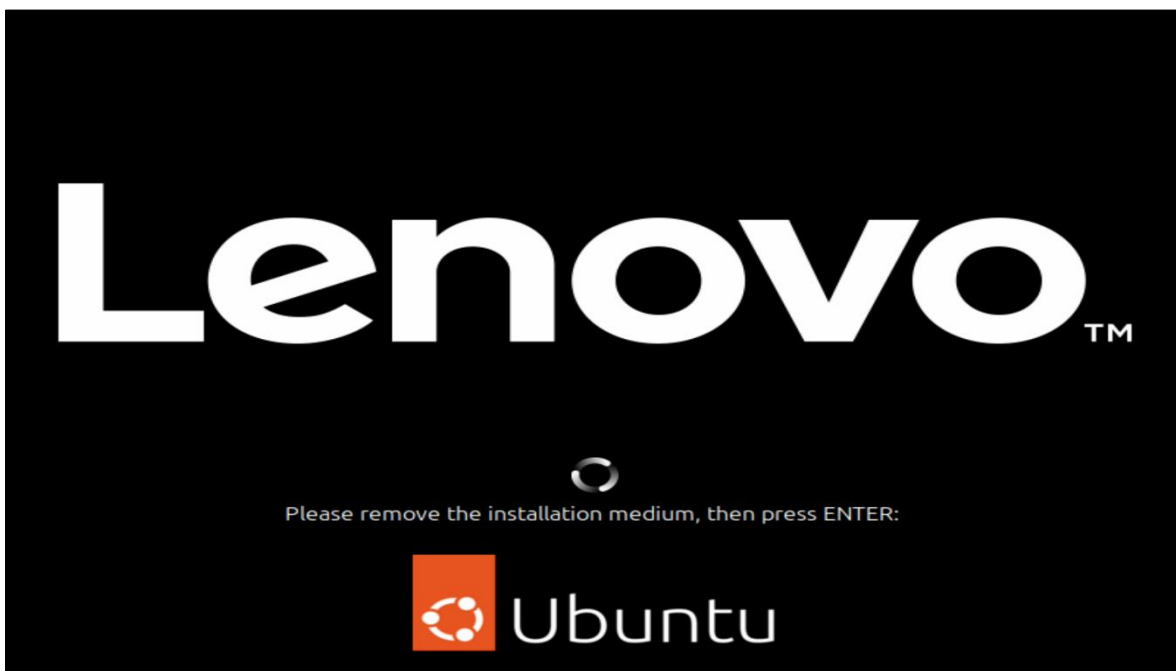
23. Ubuntu will now begin to install on the system.



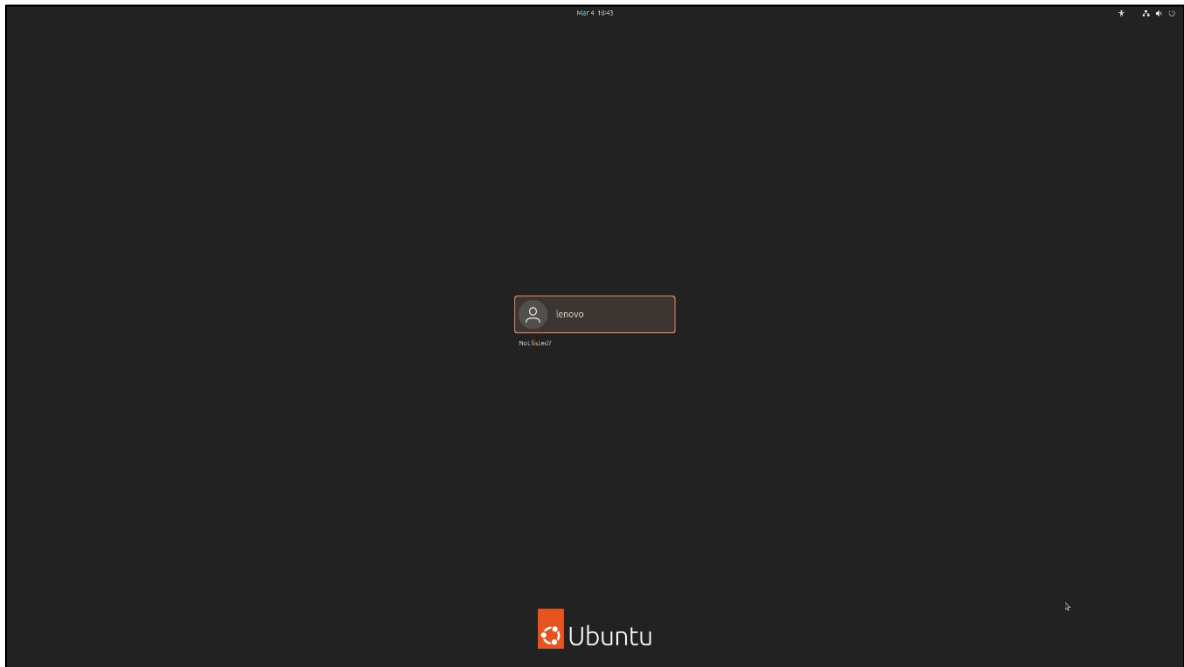
24. On the *INSTALLATION COMPLETE* screen, select *RESTART NOW*.



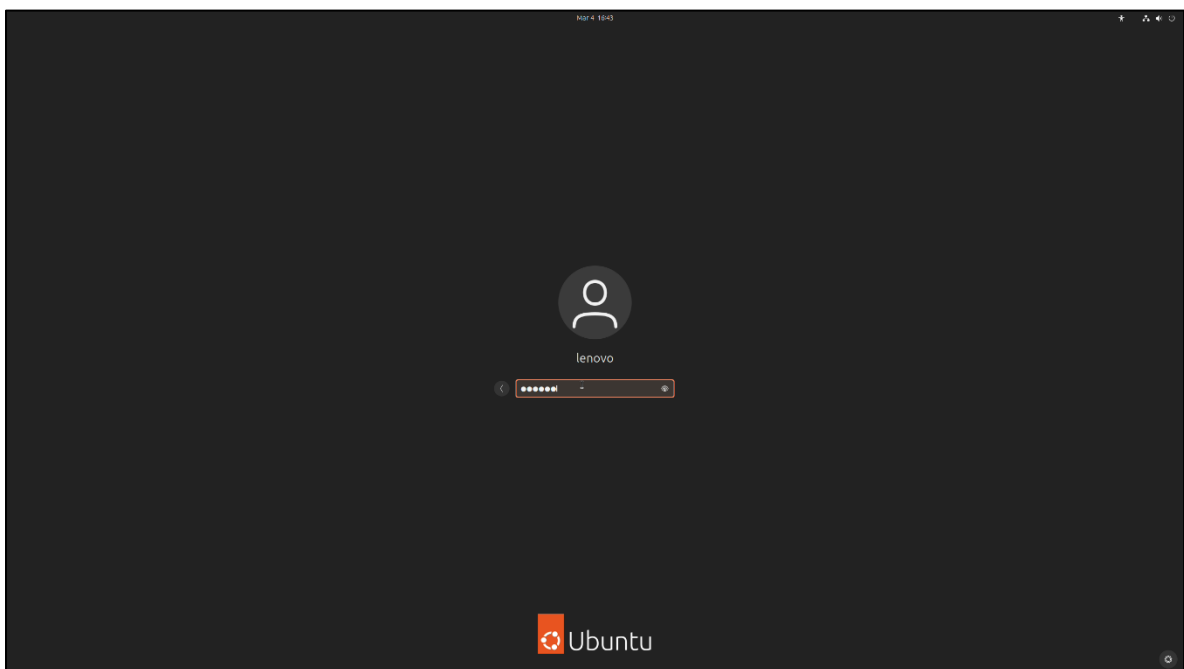
25. Remove the Ubuntu installer USB memory key and press *ENTER*.



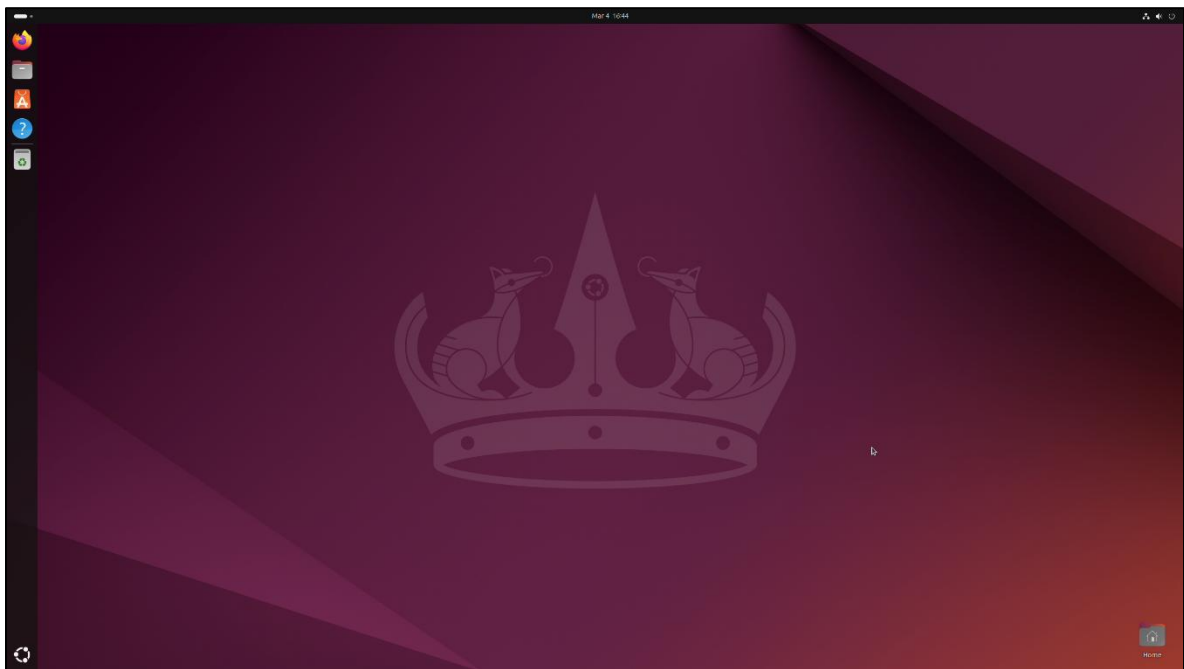
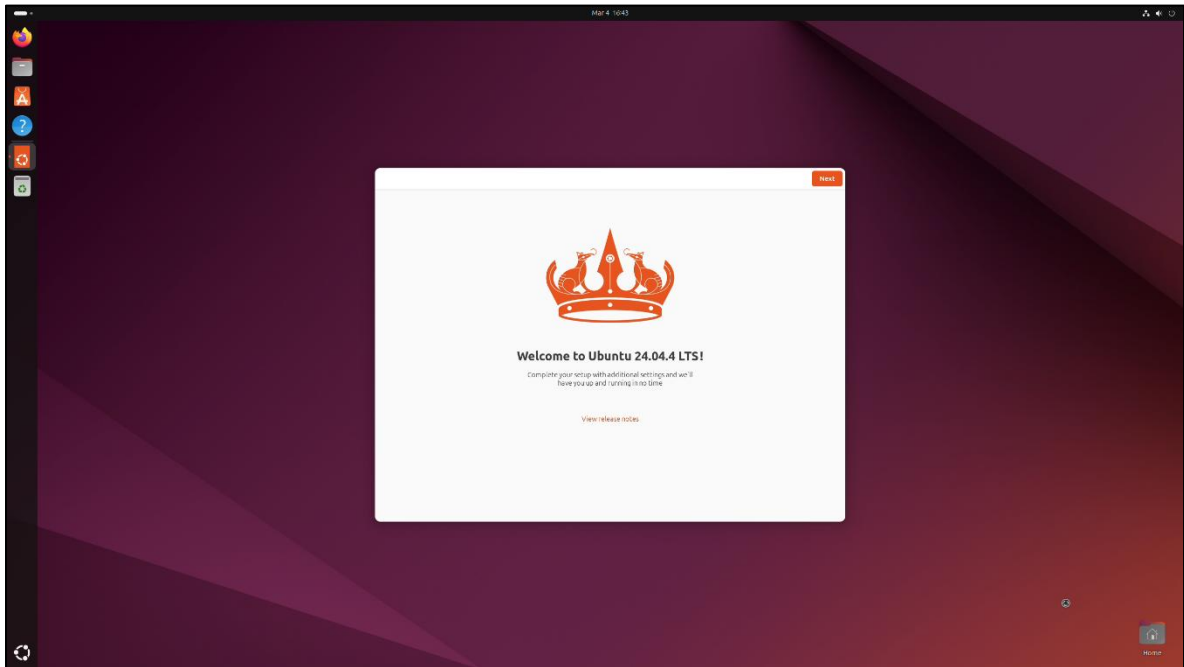
26. After the system reboots, select the username created above.



27. Enter the password created above and press *ENTER*.



28. The Ubuntu Linux 24.04 LTS Desktop screen appears.



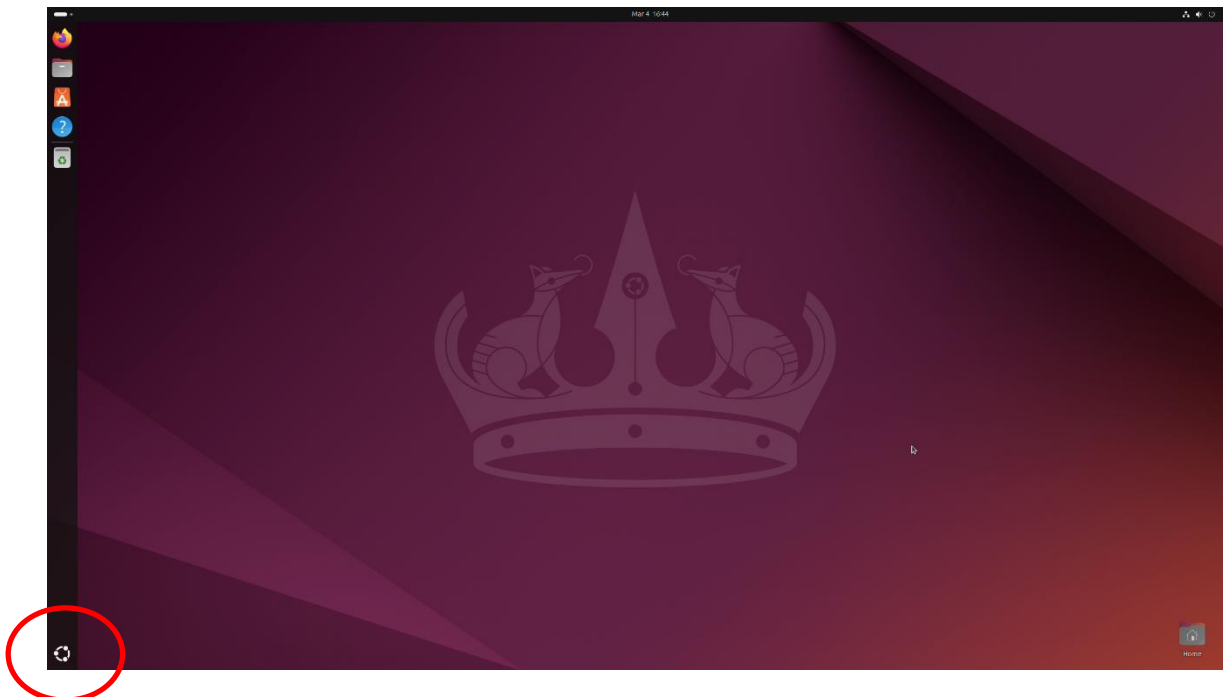
Section 3 - Device Drivers & Firmware

Most of the standard building blocks used within the ThinkStation P4 platform are native to the Ubuntu Linux 24.04 base kernel. It may be worthwhile installing a proprietary graphics driver to get optimal performance from the graphics card. This can be achieved either through the Ubuntu Upstream kernel repository directly from the Ubuntu graphical interface or from the original equipment manufacturer (OEM) directly. The next couple of sections will highlight these options in more detail.

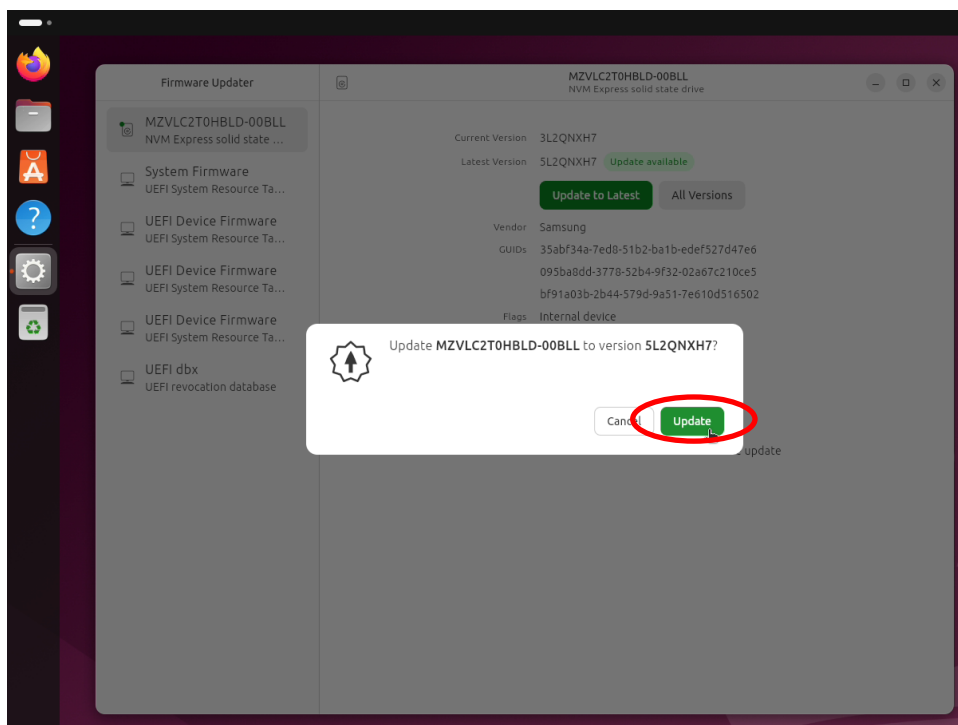
For devices that do **not** appear to be native to the kernel, feel free to reach out to the Customer Solutions team for help or guidance.

Occasionally, Ubuntu Linux may pick up possible firmware updates for different components in the system. To manually check these possible firmware updates, follow these instructions below.

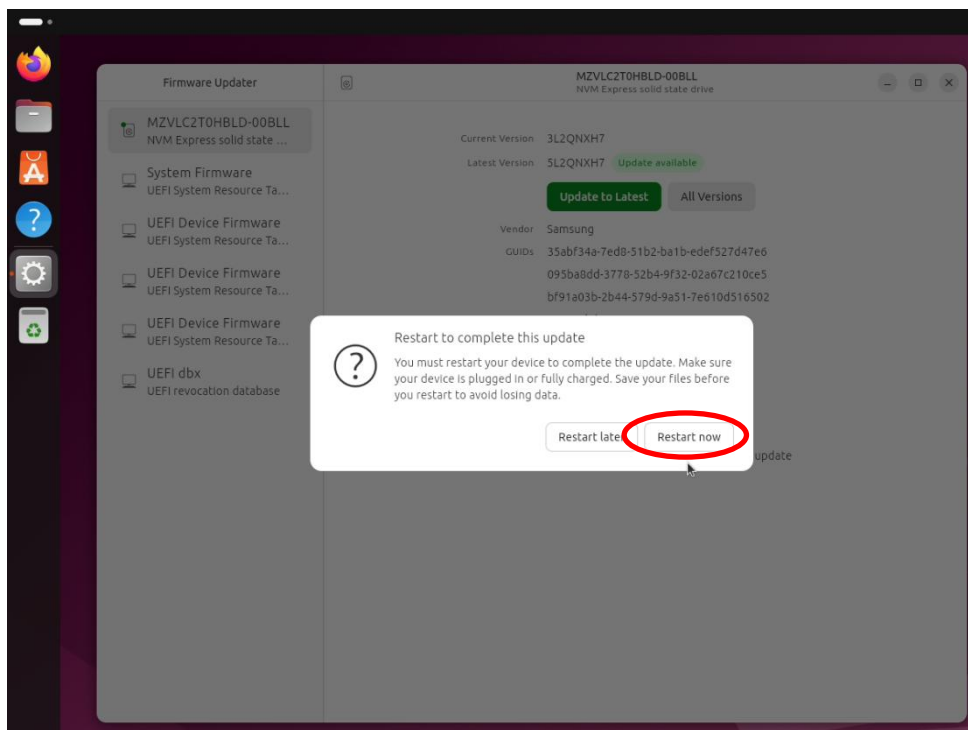
1. At the Ubuntu Linux desktop screen, select the Ubuntu logo on the bottom left of the screen shown here.



4. Select *UPDATE* on the pop-up window to update the firmware.



5. Once the firmware updates are complete, a pop-up window will appear asking to restart the system. Select *RESTART NOW* to restart the system.

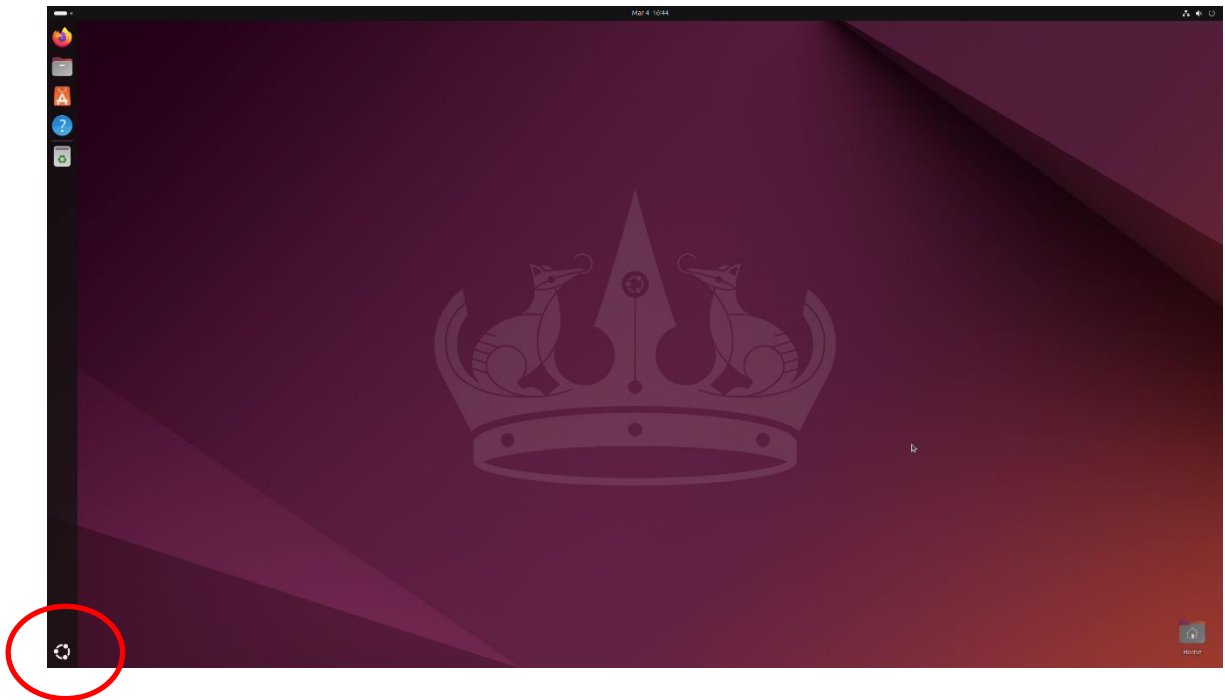


Section 4 – Installing Graphics Drivers from Ubuntu Upstream

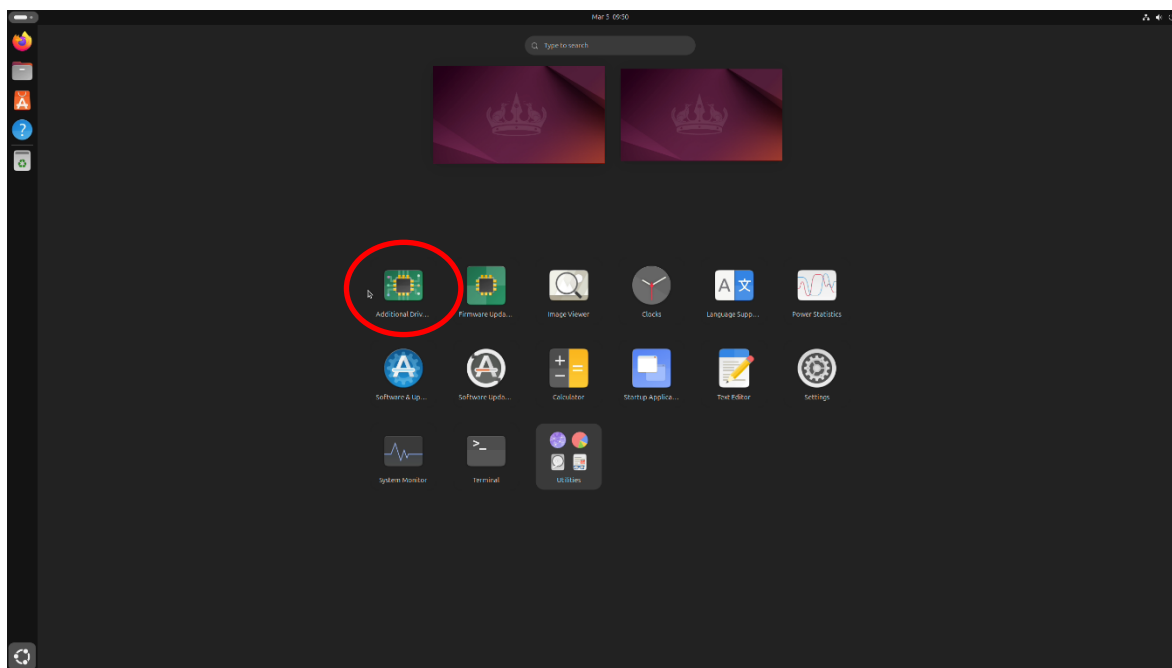
To install drivers using the Ubuntu upstream kernel repository, follow these steps below.

Note: Some newer graphics cards may not have a compatible driver upstream. In that case, it is recommended to use the standalone driver referenced in the next section

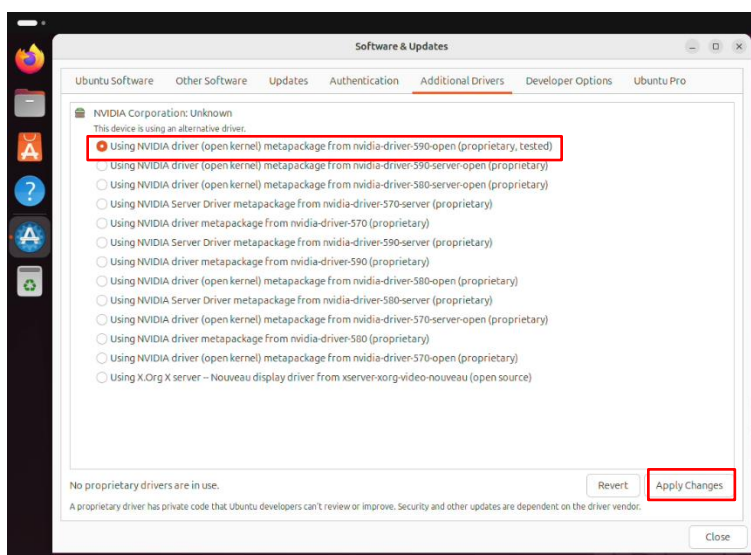
1. At the Ubuntu Linux desktop screen, select the Ubuntu logo on the bottom left of the screen shown here.



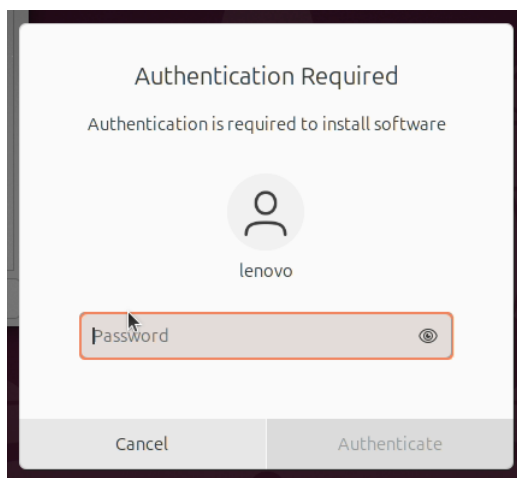
2. Select the *ADDITIONAL DRIVERS* icon as shown here.



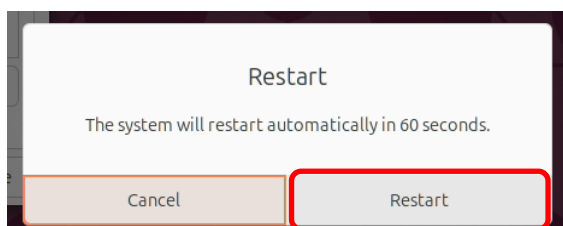
3. Select the appropriate driver from the list of available upstream drivers to install and select *APPLY CHANGES*. In the example below, the latest proprietary tested driver was selected.



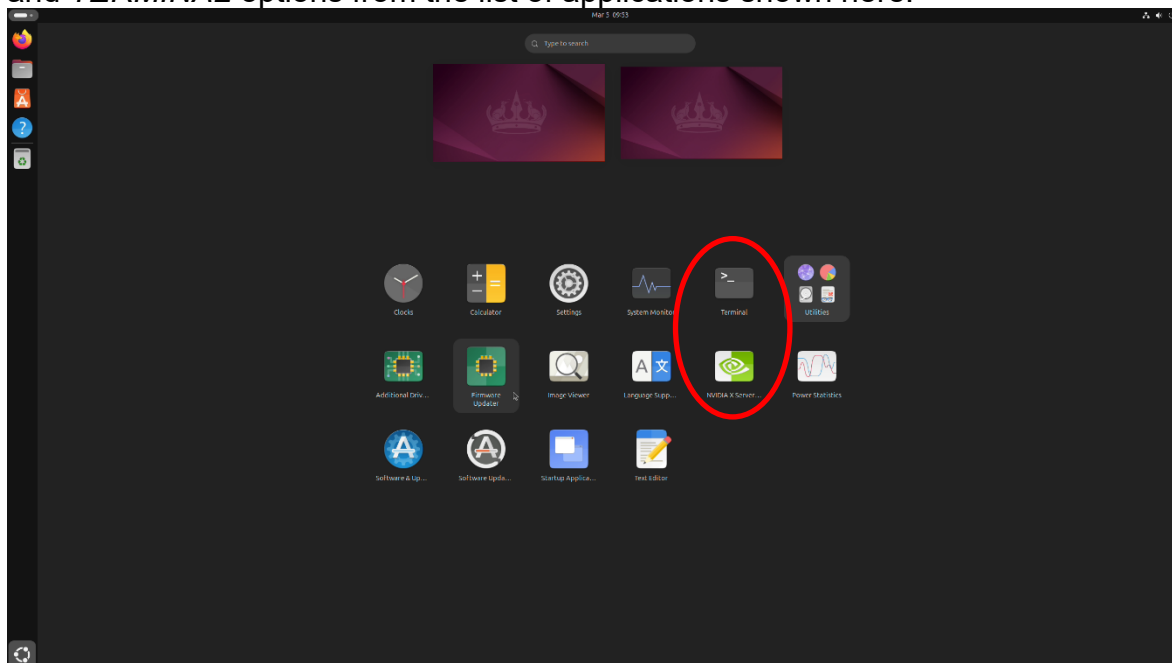
4. Enter in the superuser (root) password when prompted.



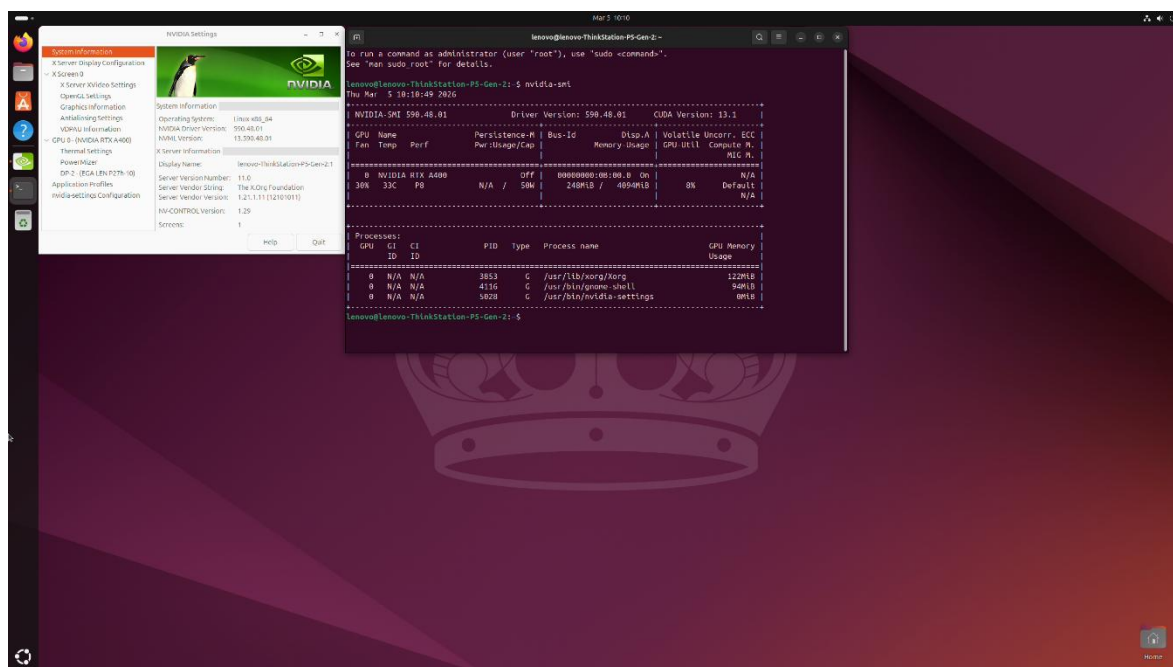
5. Once the driver finishes installing, the following prompt to restart the system will appear. Select *RESTART*.



6. Once the system reboots back into the Ubuntu Linux desktop screen, select the Ubuntu icon from step 1 above and select the *NVIDIA X Server* and *TERMINAL* options from the list of applications shown here.



- Here's a screenshot showing both the *NVIDIA SETTINGS* (left) and *TERMINAL* (right) windows. In the terminal window, run *NVIDIA-SMI* to view the Nvidia driver version.



To completely remove all NVIDIA drivers from Ubuntu Linux, use the following command:

```
# sudo apt-get purge nvidia*
```

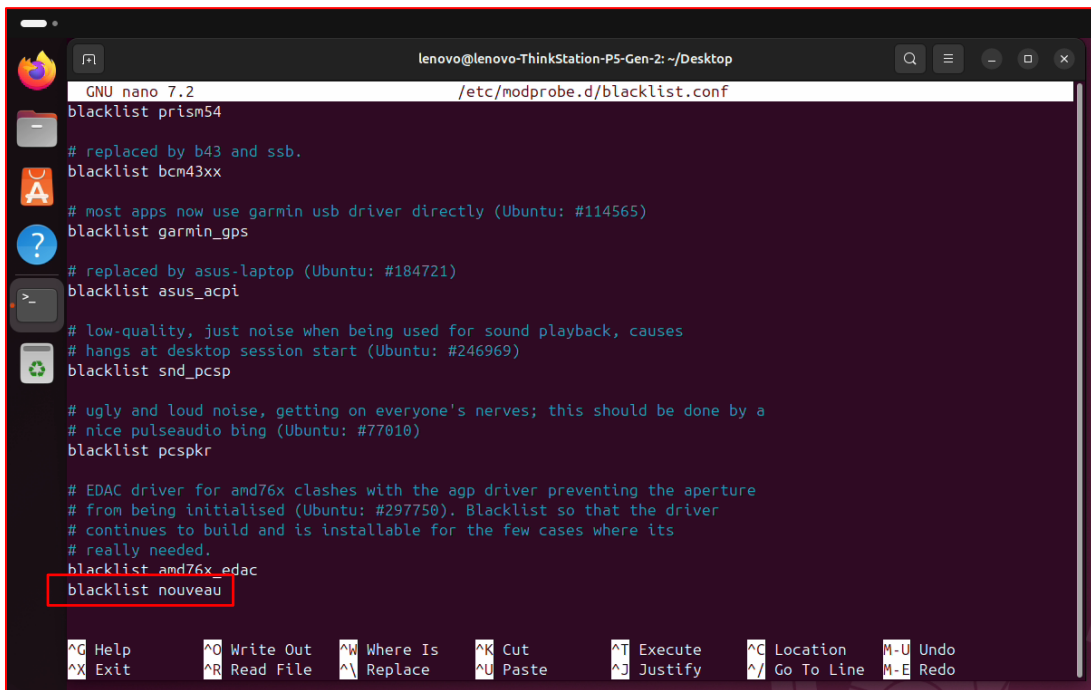
Section 5 – Installing Nvidia Graphics Drivers Standalone

To install Nvidia graphics drivers as a standalone package, there may be some prerequisite Linux packages that are needed.

1. Download the appropriate Nvidia graphics driver.
2. Blacklist the Linux *nouveau* driver.

```
# sudo nano /etc/modprobe.d/blacklist.conf
```

- Add the following line, *blacklist nouveau*, and save and exit the file.



```
lenovo@lenovo-ThinkStation-P5-Gen-2: ~/Desktop
GNU nano 7.2 /etc/modprobe.d/blacklist.conf
blacklist prism54
# replaced by b43 and ssb.
blacklist bcm43xx
# most apps now use garmin usb driver directly (Ubuntu: #114565)
blacklist garmin_gps
# replaced by asus-laptop (Ubuntu: #184721)
blacklist asus_acpi
# low-quality, just noise when being used for sound playback, causes
# hangs at desktop session start (Ubuntu: #246969)
blacklist snd_pcp
# ugly and loud noise, getting on everyone's nerves; this should be done by a
# nice pulseaudio bing (Ubuntu: #77010)
blacklist pcspkr
# EDAC driver for amd76x clashes with the agp driver preventing the aperture
# from being initialised (Ubuntu: #297750). Blacklist so that the driver
# continues to build and is installable for the few cases where its
# really needed.
blacklist amd76x_edac
blacklist nouveau
```

3. Install the Ubuntu Linux *Development Tools* packages.

```
# sudo apt-get install build-essential
```

```
lenovo@lenovo-ThinkStation-P5-Gen-2:~/Downloads$ sudo apt-get install build-essential
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  libnvidia-egl-wayland1 libpkgconf3 libvdpau1 libxvctrl0 mesa-vdpau-drivers ocl-icd-libopencl1 pkg-config
  pkgconf pkgconf-bin screen-resolution-extra vdpau-driver-all
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  binutils binutils-common binutils-x86-64-linux-gnu bzip2 dpkg-dev fakeroot g++ g++-13 g++-13-x86-64-linux-gnu
  g++-x86-64-linux-gnu gcc gcc-13 gcc-13-x86-64-linux-gnu gcc-x86-64-linux-gnu libalgorithm-diff-perl
  libalgorithm-diff-xs-perl libalgorithm-merge-perl libasan8 libbinutils libbcc1-0 libctf-nobfd0 libctf0
  libdpkg-perl libfakeroot libfile-fcntllock-perl libgcc-13-dev libgprofng0 libhwasan0 libitm1 liblsan0
  libquadmath0 libstdc++13-dev libubsan1 lto-disabled-list make
Suggested packages:
  binutils-doc gprofng-gui bzip2-doc debian-keyring g++-multilib g++-13-multilib gcc-13-doc gcc-multilib autoconf
  automake libtool flex bison gcc-doc gcc-13-multilib gcc-13-locales gdb-x86-64-linux-gnu git bzr
  libstdc++13-doc make-doc
The following NEW packages will be installed:
  binutils binutils-common binutils-x86-64-linux-gnu build-essential bzip2 dpkg-dev fakeroot g++ g++-13
  g++-13-x86-64-linux-gnu g++-x86-64-linux-gnu gcc gcc-13 gcc-13-x86-64-linux-gnu gcc-x86-64-linux-gnu
  libalgorithm-diff-perl libalgorithm-diff-xs-perl libalgorithm-merge-perl libasan8 libbinutils libbcc1-0
  libctf-nobfd0 libctf0 libdpkg-perl libfakeroot libfile-fcntllock-perl libgcc-13-dev libgprofng0 libhwasan0
  libitm1 liblsan0 libquadmath0 libstdc++13-dev libubsan1 lto-disabled-list make
0 upgraded, 38 newly installed, 0 to remove and 16 not upgraded.
Need to get 55.2 MB of archives.
After this operation, 194 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
```

4. Update the *initramfs* file and reboot the system.

```
# sudo update-initramfs -u
```

```
# sudo reboot
```

```
lenovo@lenovo-ThinkStation-P5-Gen-2: ~/Desktop
lenovo@lenovo-ThinkStation-P5-Gen-2:~/Desktop$ sudo nano /etc/modprobe.d/blacklist.conf
lenovo@lenovo-ThinkStation-P5-Gen-2:~/Desktop$ sudo update-initramfs -u
update-initramfs: Generating /boot/initrd.img-6.17.0-14-generic
lenovo@lenovo-ThinkStation-P5-Gen-2:~/Desktop$ sudo reboot
```

5. Once the system reboots, run the following command to exit X-windows.

```
# sudo init 3
```

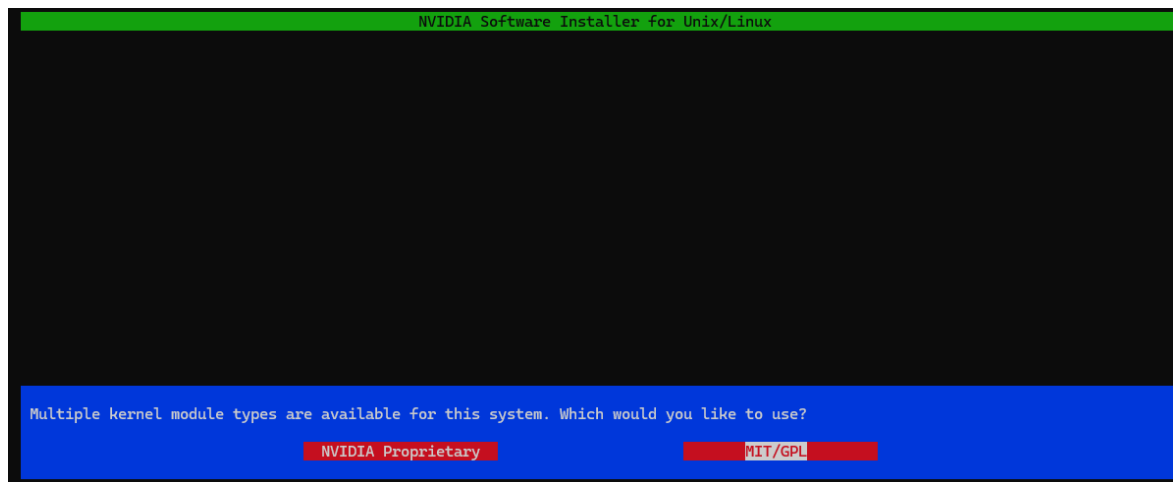
```
lenovo@lenovo-ThinkStation-P5-Gen-2:~/Desktop$ sudo init 3
```

6. Execute the following command to start the Nvidia installer.

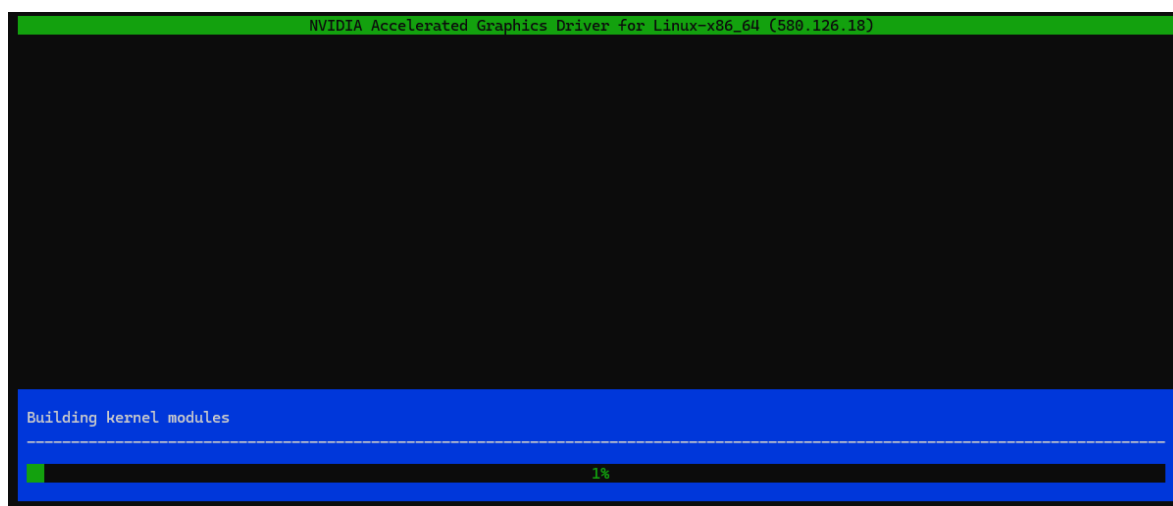
```
# sudo bash NVIDIA*
```

```
lenovo@lenovo-ThinkStation-P5-Gen-2:~/Downloads$ sudo bash NVIDIA-Linux-x86_64-580.126.18.run _
```

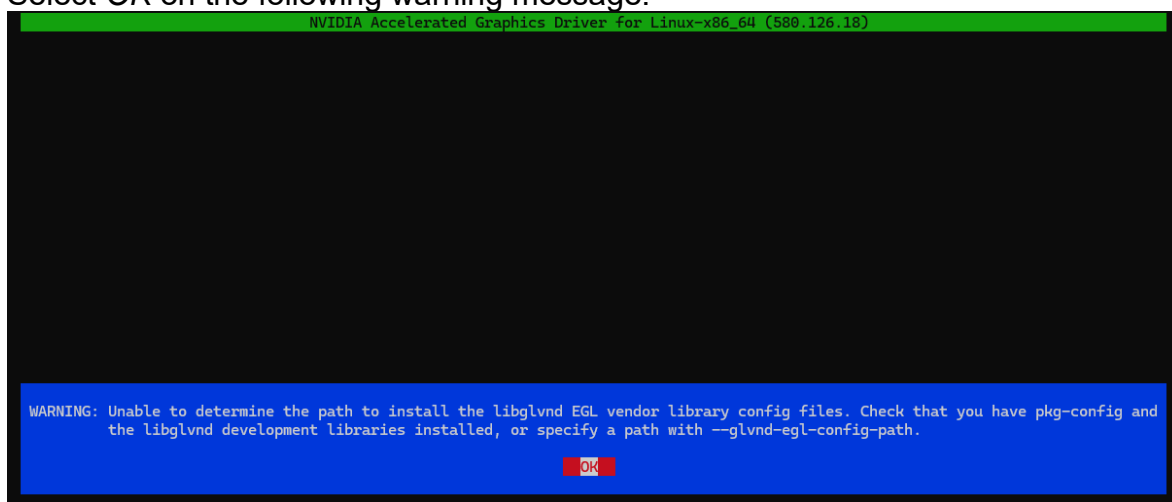
7. Select the *MIT/GPL* option.



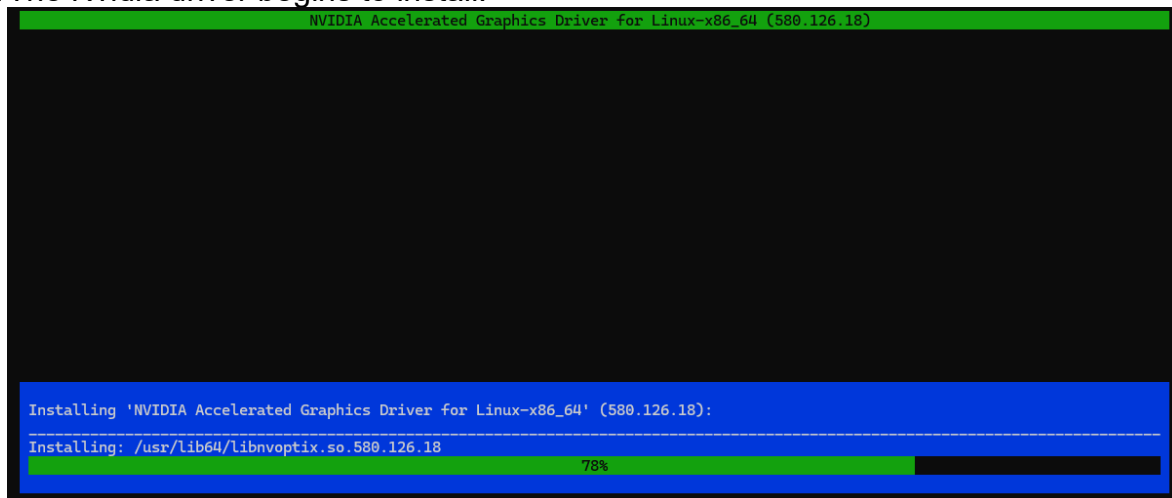
8. The driver should begin to build the kernel modules.



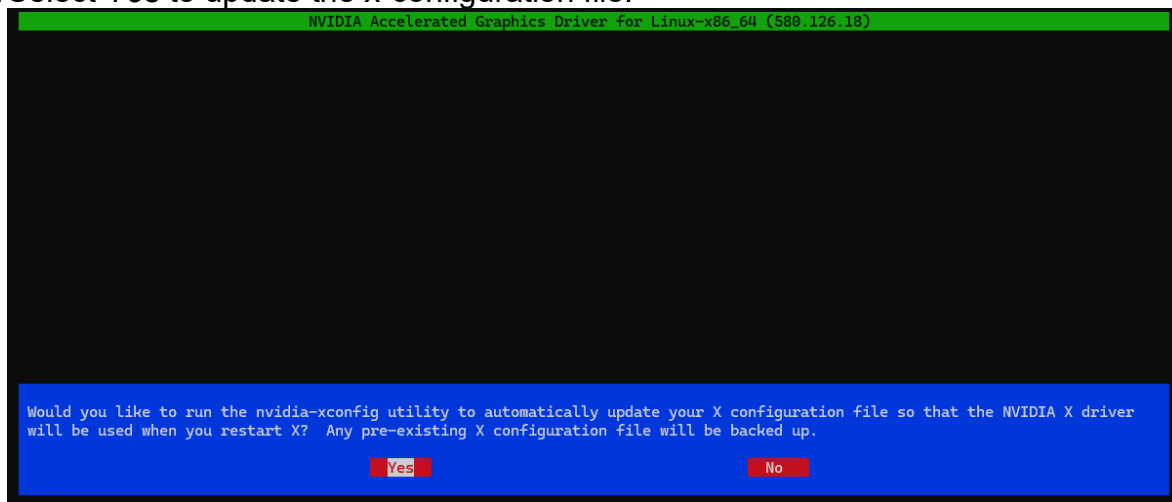
9. Select **OK** on the following warning message.



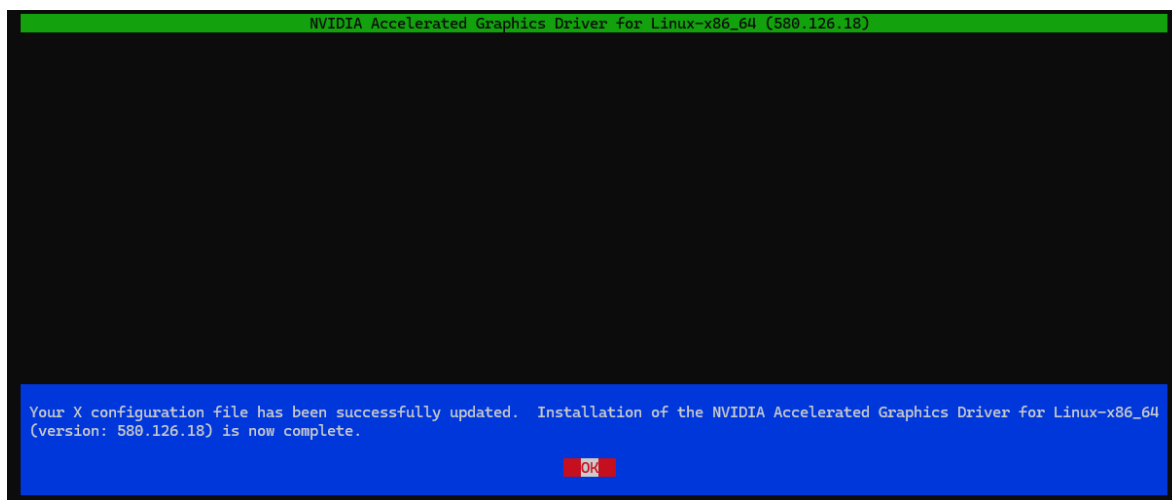
10. The Nvidia driver begins to install.



11. Select **Yes** to update the x-configuration file.



12. Select OK to acknowledge that the x-configuration file has successfully been updated.



13. Execute the following command to verify the Nvidia driver has been installed and properly load.

```
# nvidia-smi
```

```
lenovo@localhost:~$ nvidia-smi
Tue Mar 3 11:15:22 2026
```

NVIDIA-SMI 580.126.18			Driver Version: 580.126.18			CUDA Version: 13.0		
GPU	Name	Perf	Persistence-M	Bus-Id	Disp.A	Volatile	Uncorr.	ECC
Fan	Temp		Pwr:Usage/Cap		Memory-Usage	GPU-Util	Compute	M. MIG M.
0	NVIDIA RTX A400	P0	Off	00000000:46:00:0	Off	0%	Default	N/A
30%	43C		N/A / 50W		0MiB / 4094MiB			N/A

```

Processes:
GPU  GI  CI          PID  Type  Process name                      GPU Memory
   ID  ID                               Usage
=====
No running processes found

```

14. Reboot the system to boot back into the Ubuntu Linux Desktop screen.

```
# sudo reboot
```

Revision History

Version	Date	Author	Changes/Updates
1.0	6/30/2026	Jason M.	Initial release.