

Ubuntu Linux 24.04 LTS Installation

Lenovo ThinkStation P2 Tower Gen 2

Lenovo



Table of Contents

Overview	3
Section 1 – BIOS Setup	4
Section 2 – Ubuntu 24.04 Installation.....	6
Section 3 – Install Device Drivers.....	14
Section 4 – Install Nvidia Proprietary Drivers	15
Revision History	21



Overview

The purpose of this document is to provide high-level guidance for users to adequately install an Ubuntu Linux 24.04 LTS operating system on the new ThinkStation P2 Tower Gen 2 platforms.

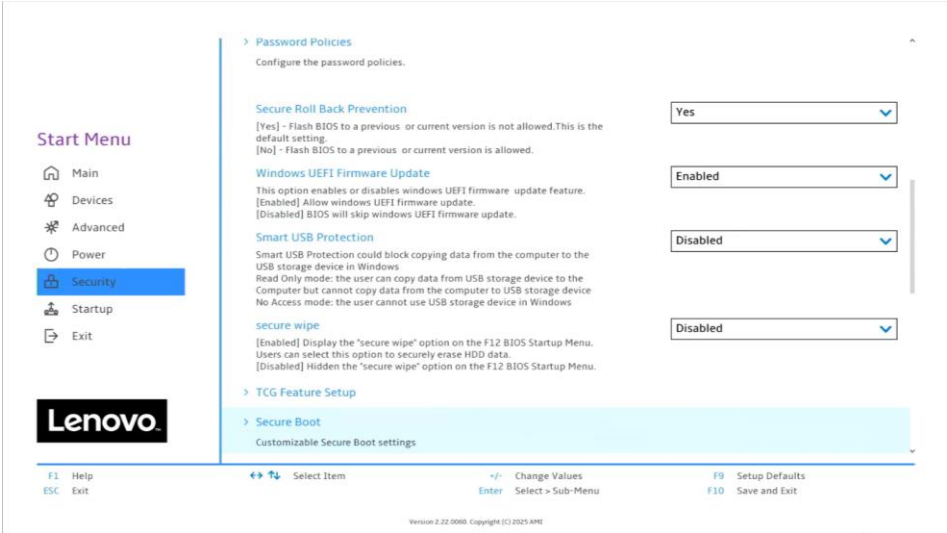
Section 1 – BIOS Setup

The first step before installing Linux is to make sure the system BIOS is setup correctly.

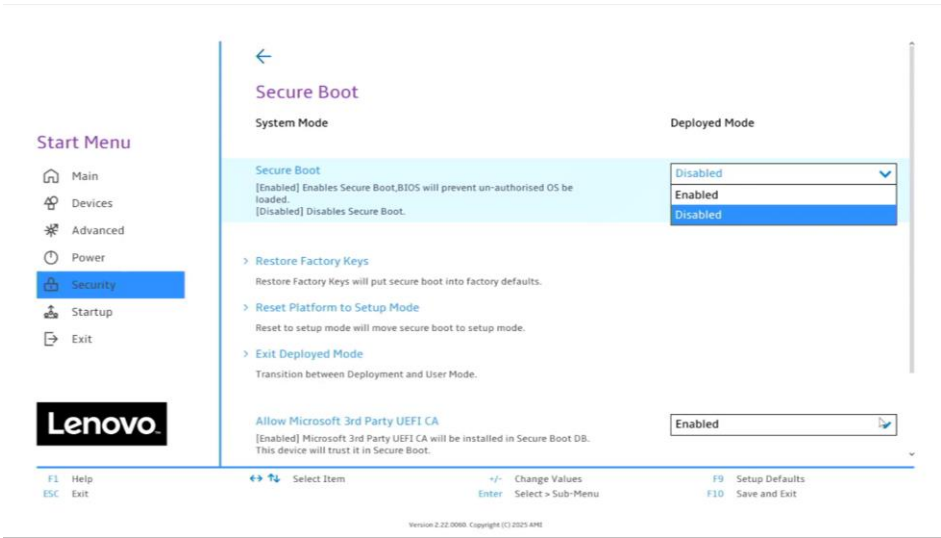
- Boot into BIOS by pressing the function F1 key at the “Lenovo” splash screen.



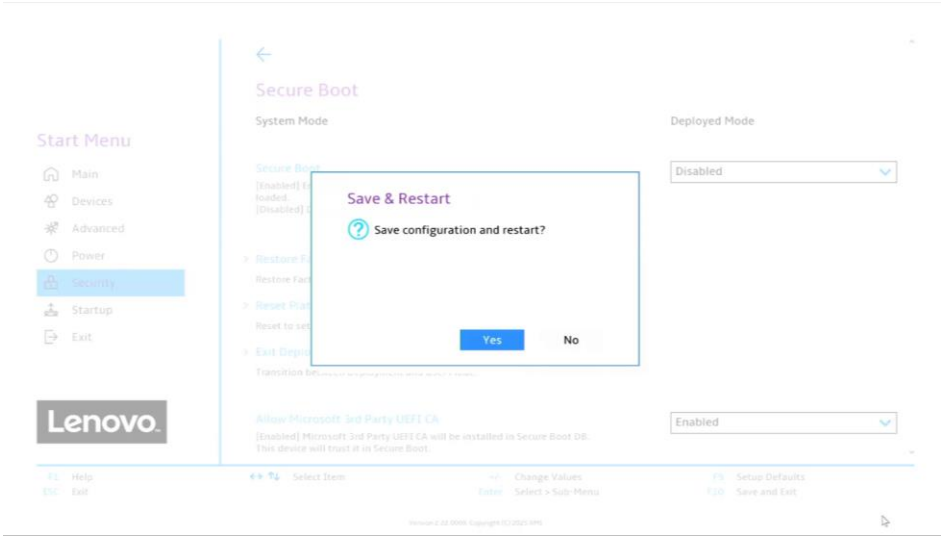
- Tab over to the Security tab and select “Secure Boot”.



- Ensure that Secure Boot option is set to “Disabled”.



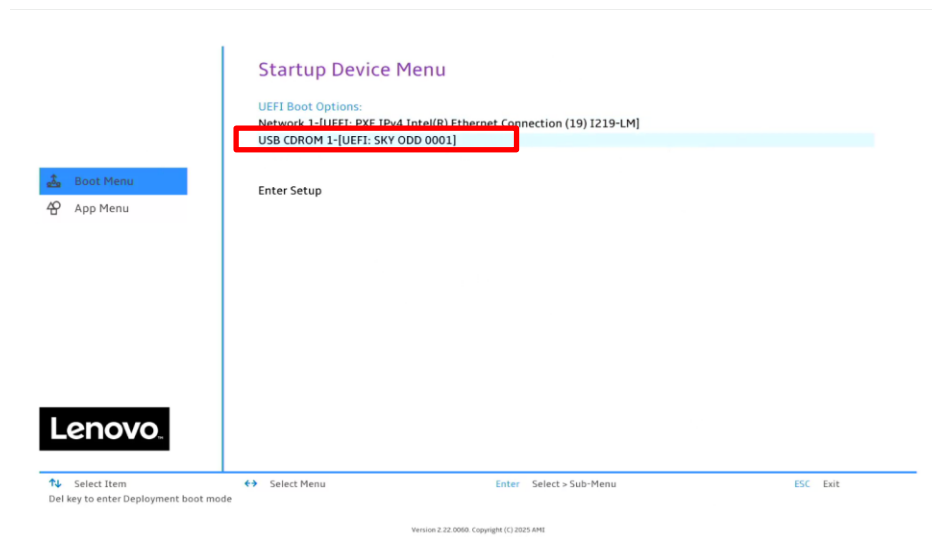
- Save changes by pressing F10 function key.



Section 2 – Ubuntu 24.04 Installation

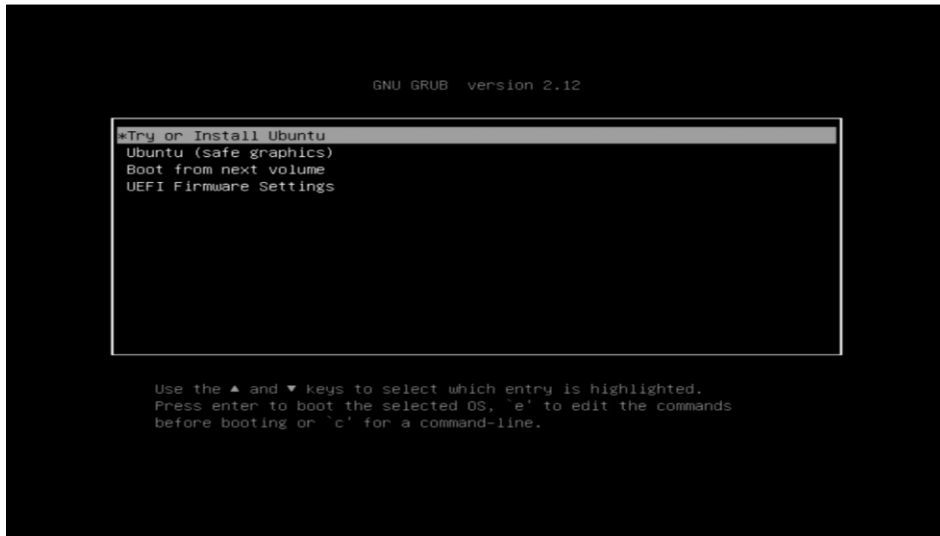
Here are step-by-step instructions on how to install an Ubuntu Linux 24.04 LTS operating system on the new ThinkStation P2 Tower Gen 2 platforms.

1. Obtain a copy of the Ubuntu 24.04 installation media. It is recommended to extract the Ubuntu 24.04 iso media to a USB.
2. Insert the USB memory key into one of the USB ports on the system and power on the system.
3. 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.



Note: Legacy boot is not supported on P2 Tower Gen 2 platforms. Only UEFI bootable options will be available.

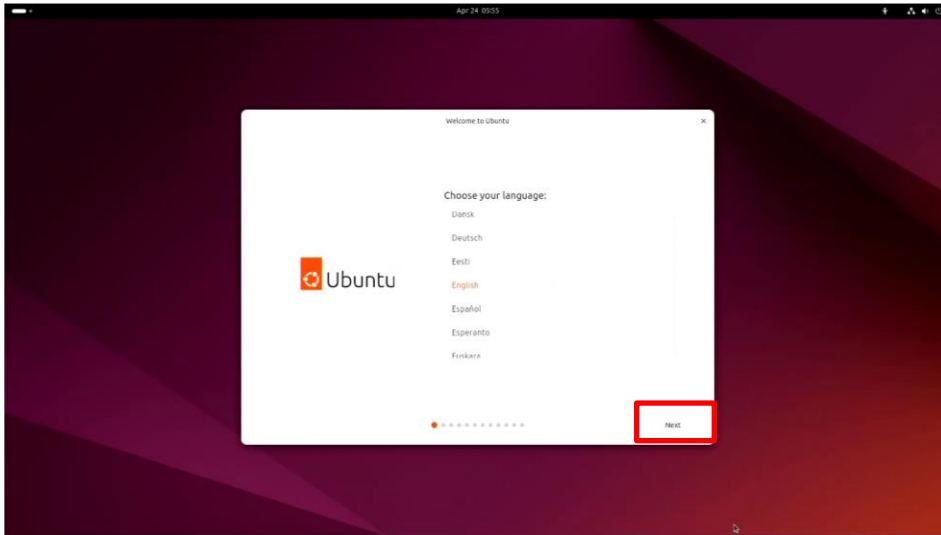
4. Select the 'Try or Install Ubuntu' option from the GRUB boot menu and press 'Enter'.



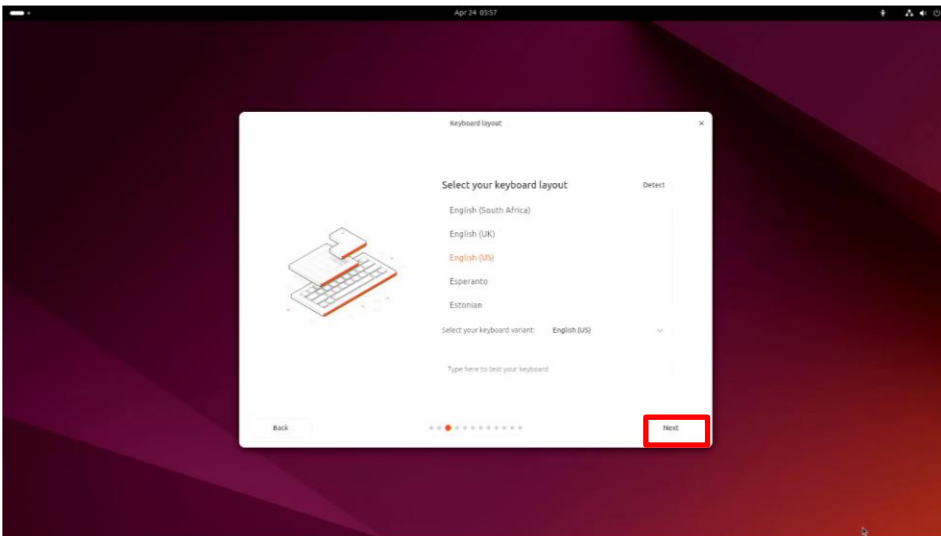
5. The Ubuntu installation media will begin to load.



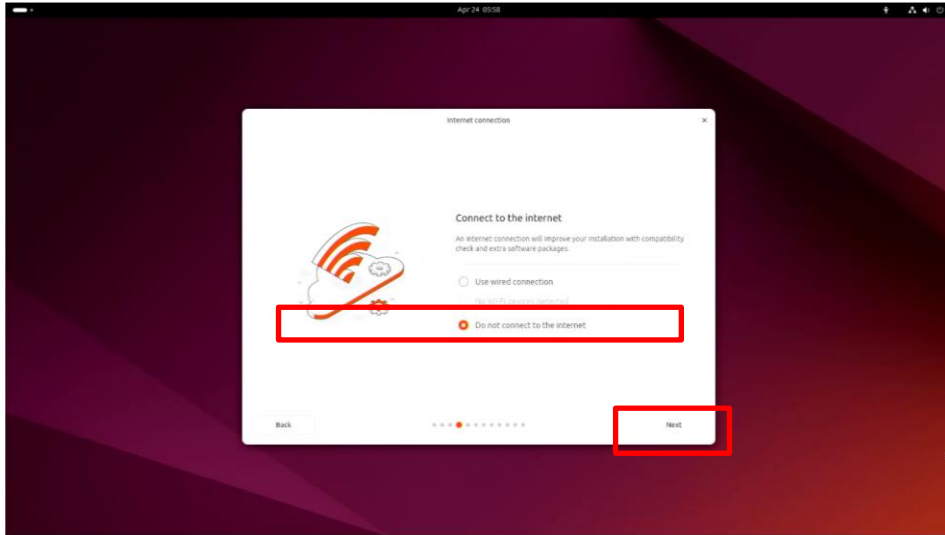
6. The Ubuntu Linux Welcome screen should eventually appear. Select the appropriate language and select 'Install Ubuntu'.



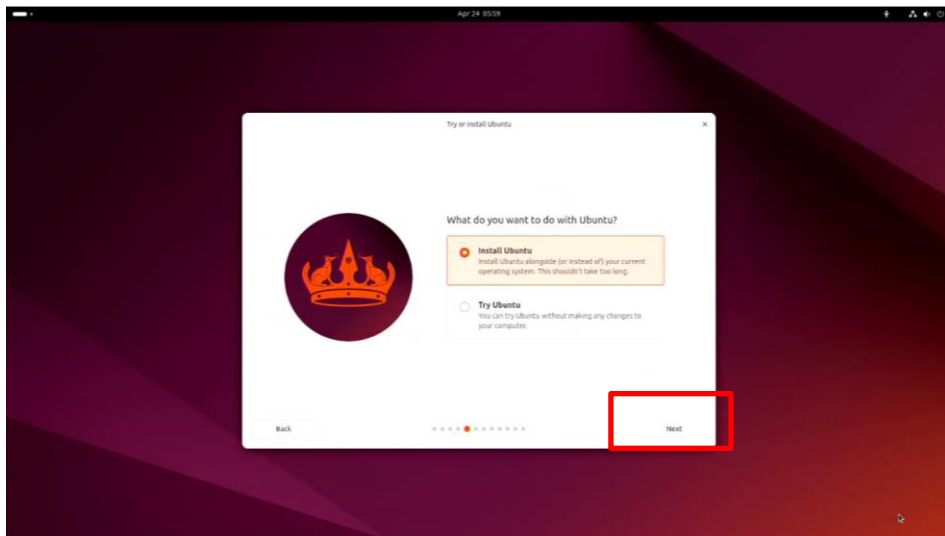
7. Select the appropriate keyboard layout and 'Next'.

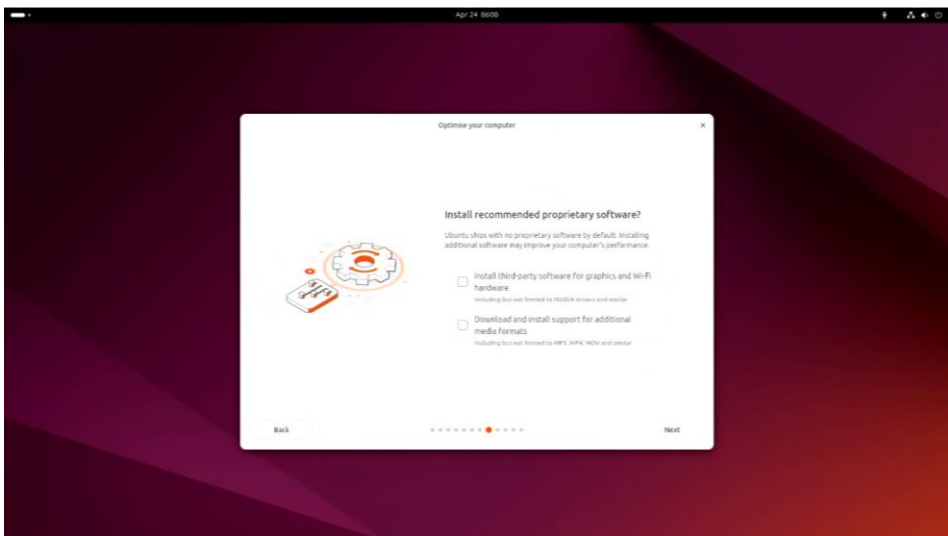
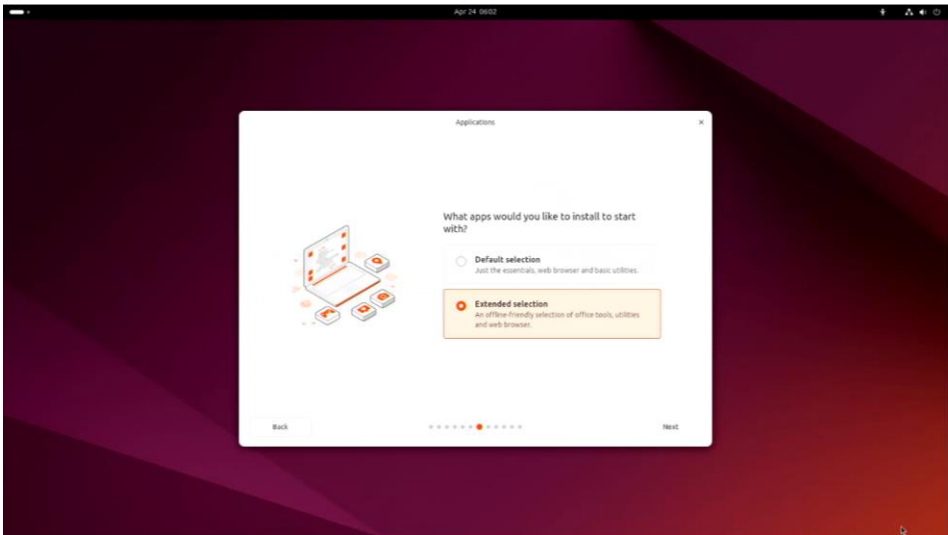
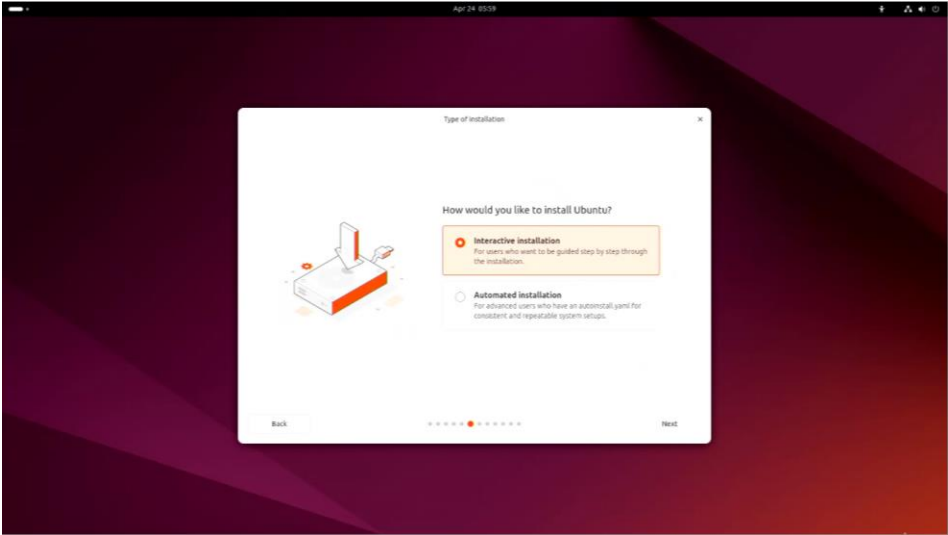


8. If a wireless module is installed in the system, the installation media may prompt the user to connect to a network. In this example, *'I don't want to connect to a Wi-Fi network right now'* was selected.



9. Select the type of installation and 'Continue'.
Note: If there is a valid internet connection on the system, items available under the 'Other options' sections will be selectable.



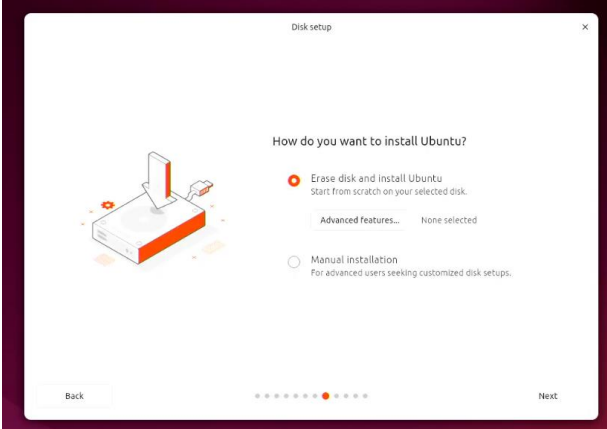


Select 'Erase disk and install Ubuntu' to automatically create the file system partitions and 'Continue'.

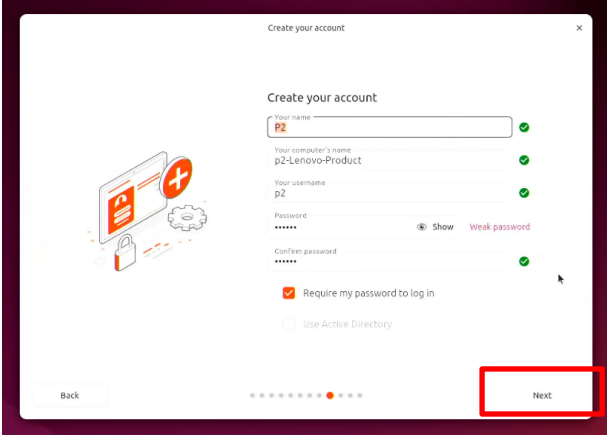
To manually create file system partitions, select 'Something else'.

Note: If the disk has data on it already, the options here may be different.

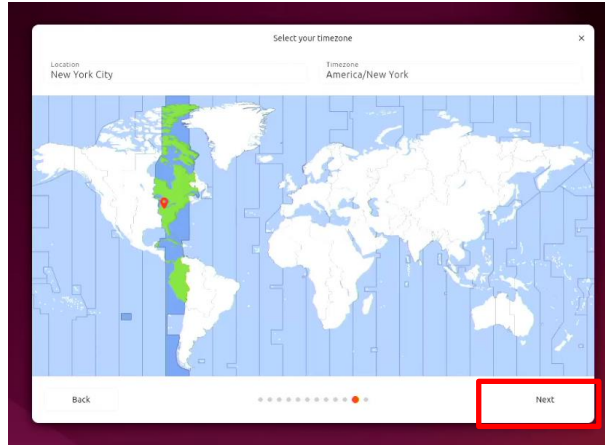
In this document, 'Erase disk and install Ubuntu' was selected.



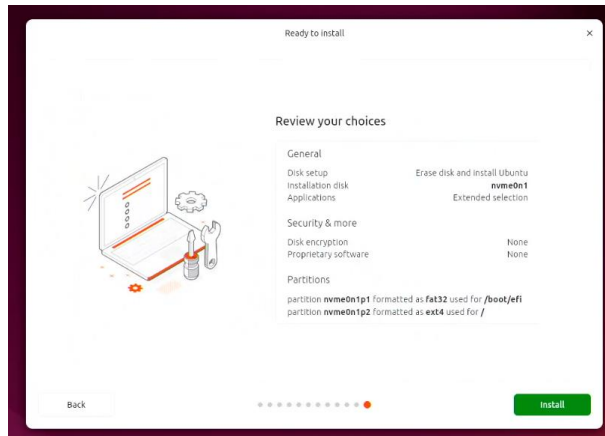
10. Create your Account.



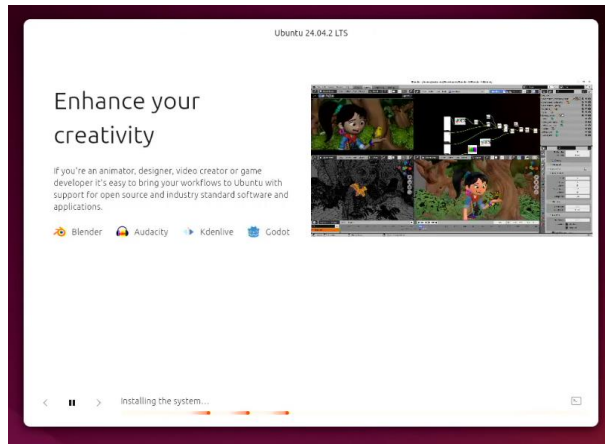
11. Select the appropriate geographical location and 'Continue'.



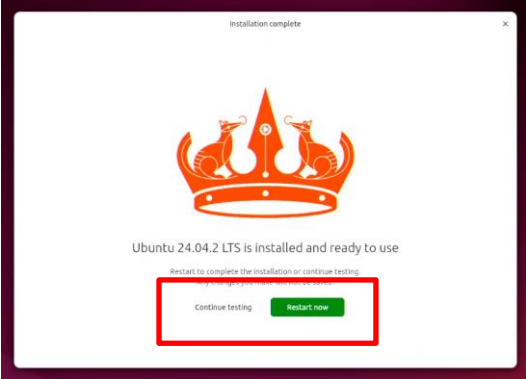
12. Review your Choices and select 'Install'.



13. Let the system finish the installation.



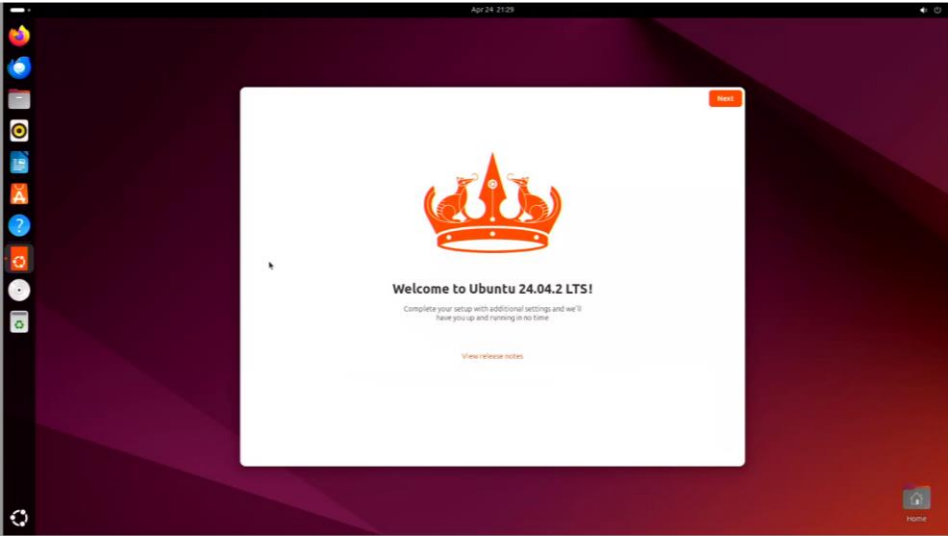
14. Once the installation completes, select 'Reboot Now'.



15. Remove the installation media (USB/DVD) and press 'Enter'.



16. Ubuntu 22.04 LTS Desktop screen.



Section 3 – Install Device Drivers

Most of the standard building blocks used in the ThinkStation P2 Gen 2 platform are native to the Ubuntu Linux 24.04 LTS base kernel. Installing a proprietary graphics driver is recommended to get optimal performance from the graphics card. The next sections provide step-by-step instructions on how to install a proprietary Nvidia graphics driver in Ubuntu Linux.

Note 1: All commands need to be executed with superuser privileges in the following sections. All commands that need to be typed in start with the \$ sign.

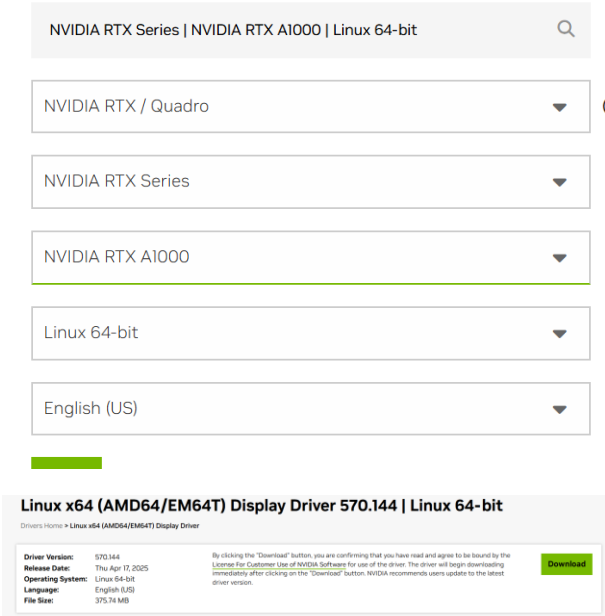
Note 2: Non-native drivers need to be manually installed. Refer to the vendor's documentation for a detailed process of obtaining and installing drivers.

Section 4 – Install Nvidia Proprietary Drivers

The below step-by-step instructions on how to install Nvidia proprietary drivers.

1. Download the appropriate Nvidia graphics driver from the Lenovo Support portal or NVIDIA support site.
Link for P2 Gen 2 Driver:

For example, for A1000 8G
[Download The Official NVIDIA Drivers | NVIDIA](https://www.nvidia.com/en-us/drivers/details/24333)
<https://www.nvidia.com/en-us/drivers/details/24333>



File Name: NVIDIA-Linux-x86_64-570.144.run

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.

```
p2@p2-Lenovo-Product:~$ sudo nano /etc/modprobe.d/blacklist.conf
[sudo] password for p2:
```

```

GNU nano 7.2 /etc/modprobe.d/blacklist.conf
# 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_pcspp

# ugly and loud noise, getting on everyone's nerves; this should be done by a
# nice pulseaudio bing (Ubuntu: #77010)
blacklist pcspskr

# 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 nouveau

blacklist nouveau

File Name to Write: /etc/modprobe.d/blacklist.conf
  
```

3. Update the initramfs file and reboot the system.

- \$ sudo update-initramfs -u
- \$ reboot now

```

p2@p2-Lenovo-Product: ~/Desktop$ sudo update-initramfs -u
update-initramfs: Generating /boot/initrd.img-6.11.0-17-generic
p2@p2-Lenovo-Product: ~/Desktop$
  
```

4. Once the system reboots to the Linux desktop screen, run the following command as superuser from a terminal window to exit X-windows.

- \$ init 3

```

p2@p2-Lenovo-Product: ~/Desktop$ sudo init 3
[sudo] password for p2:
  
```

5. Login as root (superuser).

```

Ubuntu 24.04.2 LTS p2-Lenovo-Product tty1
p2-Lenovo-Product login: p2
Password:
  
```

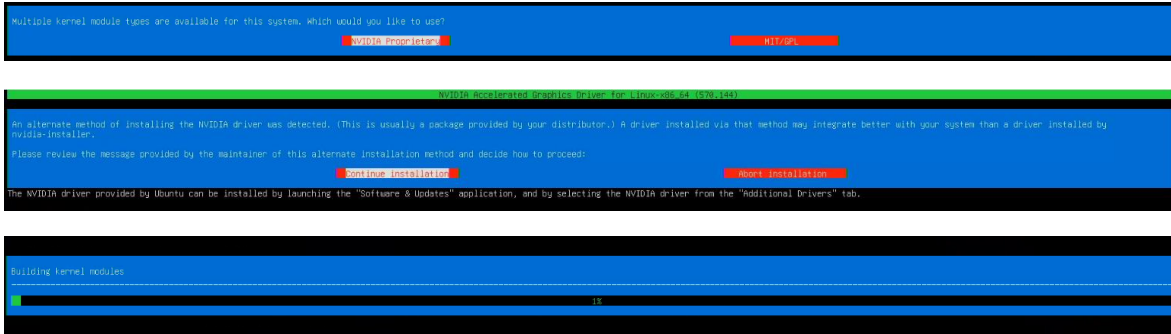
6. Navigate to the directory to where the Nvidia driver installation file is located and run the following command. *In this example, it is on the Linux desktop.*

- \$ bash ./NVIDIA*

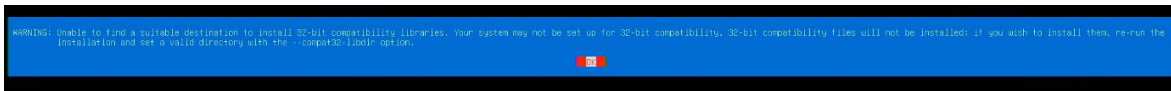
```

p2@p2-Lenovo-Product: ~$
p2@p2-Lenovo-Product: ~$ sudo ./Downloads/NVIDIA-Linux-x86_64-570.144.run
  
```

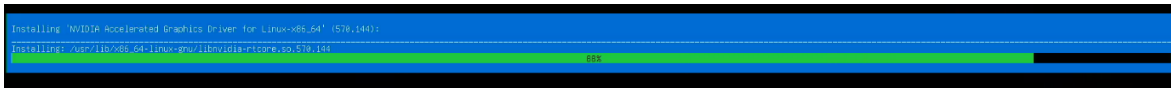
7. Note the driver should start to install.



8. Select 'OK' on the following warning message.



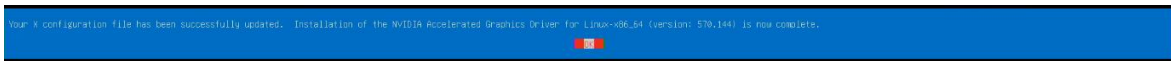
9. The driver should continue to install.



10. Select 'Yes' to update the x-configuration file.



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



Note: GCC and related tools is needed for install the NVIDIA driver.



Please install the development tools packages using the following commnad:

\$ sudo apt-get update

\$ sudo apt-get install g++ gcc make

\$ sudo apt-get install build-essential

```
p2@p2-Lenovo-Product: ~/Desktop
p2@p2-Lenovo-Product:~/Desktop$ sudo apt-get update
```

```
p2@p2-Lenovo-Product:~/Desktop
p2@p2-Lenovo-Product:~/Desktop$ sudo apt-get install g++ gcc make
```

```
p2@p2-Lenovo-Product:~/Desktop
p2@p2-Lenovo-Product:~/Desktop$ sudo apt-get install build-essential
```

12. Run the following command to verify the Nvidia driver has been installed and loaded properly, then reboot the system.

\$ nvidia-smi

```
p2@p2-Lenovo-Product:~/Desktop$ nvidia-smi
Thu Apr 24 22:18:47 2025
+-----+
| NVIDIA-SMI 578.144                Driver Version: 578.144      CUDA Version: 12.8     |
+-----+-----+-----+-----+-----+-----+-----+
| GPU  Name           Persistence-M | Bus-Id        Disp.A | Volatile Uncorr. ECC | |
| Fan  Temp   Perf          Pwr:Usage/Cap |      Memory-Usage | GPU-Util  Compute M. |
|                                           |              |           |    MIG M. |
+-----+-----+-----+-----+-----+-----+-----+
|   0   NVIDIA RTX A1000      Off          | 00000000:02:00:0 | On          |      N/A |
| 30%  46C   P8             N/A / 50W | 197MiB / 8188MiB |      4%    Default  |
|                                           |              |           |    N/A |
+-----+-----+-----+-----+-----+-----+
Processes:
+-----+-----+-----+-----+-----+-----+
| GPU  GI   CI          PID  Type  Process name                        GPU Memory |
| ID   ID   ID          |          |      |                                     Usage      |
+-----+-----+-----+-----+-----+-----+
|   0   N/A N/A          2388 G    /usr/lib/xorg/Xorg                   79MiB |
|   0   N/A N/A          2581 G    /usr/bin/gnome-shell                  81MiB |
|   0   N/A N/A          2918 G    /usr/libexec/gnome-initial-setup      7MiB |
+-----+-----+-----+-----+-----+-----+
p2@p2-Lenovo-Product:~/Desktop$
```

NVIDIA drivers' installation(upstream)

This page shows how to install the NVIDIA drivers from the command line

Make sure the system has access to the most up-to-date package information

\$ sudo apt-get update

```
p2@p2-Lenovo-Product: ~/Desktop
p2@p2-Lenovo-Product:~/Desktop$ sudo apt-get update
Hit:1 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Reading package lists... Done
p2@p2-Lenovo-Product:~/Desktop$
```

Check the available drivers

\$ sudo ubuntu-drivers list

```
p2@p2-Lenovo-Product: ~/Desktop
p2@p2-Lenovo-Product:~/Desktop$ sudo ubuntu-drivers list
udevadm hwdb is deprecated. Use systemd-hwdb instead.
udevadm hwdb is deprecated. Use systemd-hwdb instead.
udevadm hwdb is deprecated. Use systemd-hwdb instead.
udevadm hwdb is deprecated. Use systemd-hwdb instead.
udevadm hwdb is deprecated. Use systemd-hwdb instead.
udevadm hwdb is deprecated. Use systemd-hwdb instead.
udevadm hwdb is deprecated. Use systemd-hwdb instead.
nvidia-driver-550, (kernel modules provided by linux-modules-nvidia-550-generic-hwe-24.04)
nvidia-driver-570-server, (kernel modules provided by linux-modules-nvidia-570-server-generic-hwe-24.04)
nvidia-driver-570-open, (kernel modules provided by linux-modules-nvidia-570-open-generic-hwe-24.04)
nvidia-driver-570-server-open, (kernel modules provided by linux-modules-nvidia-570-server-open-generic-hwe-24.04)
nvidia-driver-570, (kernel modules provided by linux-modules-nvidia-570-generic-hwe-24.04)
nvidia-driver-550-open, (kernel modules provided by linux-modules-nvidia-550-open-generic-hwe-24.04)
p2@p2-Lenovo-Product:~/Desktop$
```

Installing the drivers for generic use

\$ sudo ubuntu-drivers install

```
p2@p2-Lenovo-Product:~/Desktop$ sudo ubuntu-drivers install
```

Reboot the system to make driver take effect

\$ reboot

```
p2@p2-Lenovo-Product: ~/Desktop$ reboot
```

Check the NVIDIA driver is running.

Run the following command to verify the Nvidia driver has been installed and loaded properly, then reboot the system

\$ nvidia-smi

```
p2@p2-Lenovo-Product: ~/Desktop$ nvidia-smi
Fri Jun 6 13:52:42 2025
+-----+
| NVIDIA-SMI 570.133.07              Driver Version: 570.133.07   CUDA Version: 12.8     |
+-----+-----+
| GPU  Name      Persistence-M | Bus-Id        Disp.A | Volatile Uncorr. ECC |
| Fan  Temp   Perf          Pwr:Usage/Cap |  Memory-Usage | GPU-Util  Compute M. |
|                                           |              | MIG M.     |
+-----+-----+
| 0   NVIDIA RTX A400      Off | 00000000:01:00:0  On |          | N/A |
| 30%  35C   P8             N/A / 50W | 175MiB / 4894MiB | 0%      Default |
|                                           |              |           |
+-----+-----+
| Processes: |
| GPU   GI   CI          PID    Type   Process name          GPU Memory |
| ID   ID   ID           |              |           | Usage      |
+-----+-----+
| 0   N/A  N/A           2113   G   /usr/lib/xorg/Xorg          67MiB |
| 0   N/A  N/A           2389   G   /usr/bin/gnome-shell       79MiB |
+-----+-----+
p2@p2-Lenovo-Product: ~/Desktop$
```

Revision History

Version	Date	Author	Changes/Updates
1.0	6/18/2025	Zhu Zheng	Initial Release