Red Hat Enterprise Linux 10 Installation

Lenovo ThinkStation PX, P8, P7, P5

Version 1.0, Published June 2026

Table of Contents

Overview 3
Section 1 – BIOS Setup 4
Section 2 – RHEL 10 Installation 10
Section 3 - Install Device Drivers 23
Section 4 – Installing Nvidia Graphics Drivers from Red Hat Upstream 24
Section 5 – Installing Nvidia Graphics Drivers Standalone 25
Revision History 30

Overview

The purpose of this document is intended to provide general guidance for users to properly install a Red Hat Enterprise Linux 10 operating system[1] on the Lenovo ThinkStation PX, P8, P7, and P5 platforms.

[1] The official certified Red Hat Enterprise Linux (RHEL) version is 10.2.

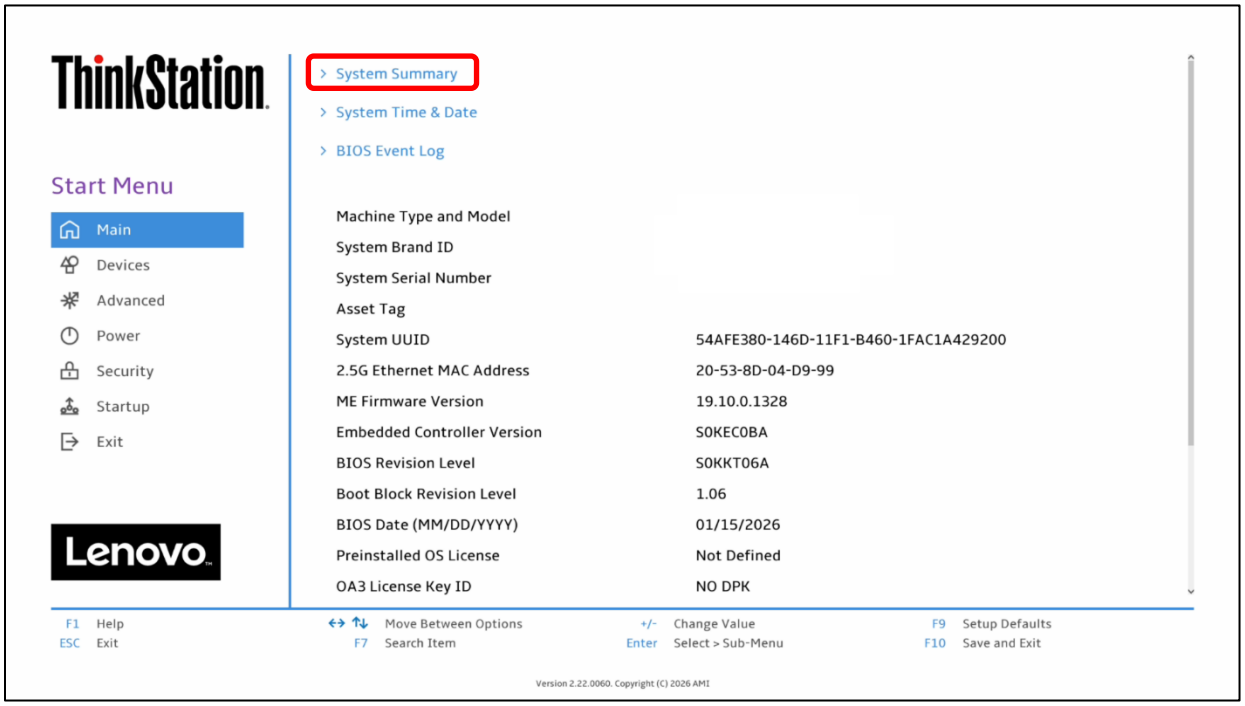
Section 1 – BIOS Setup

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.

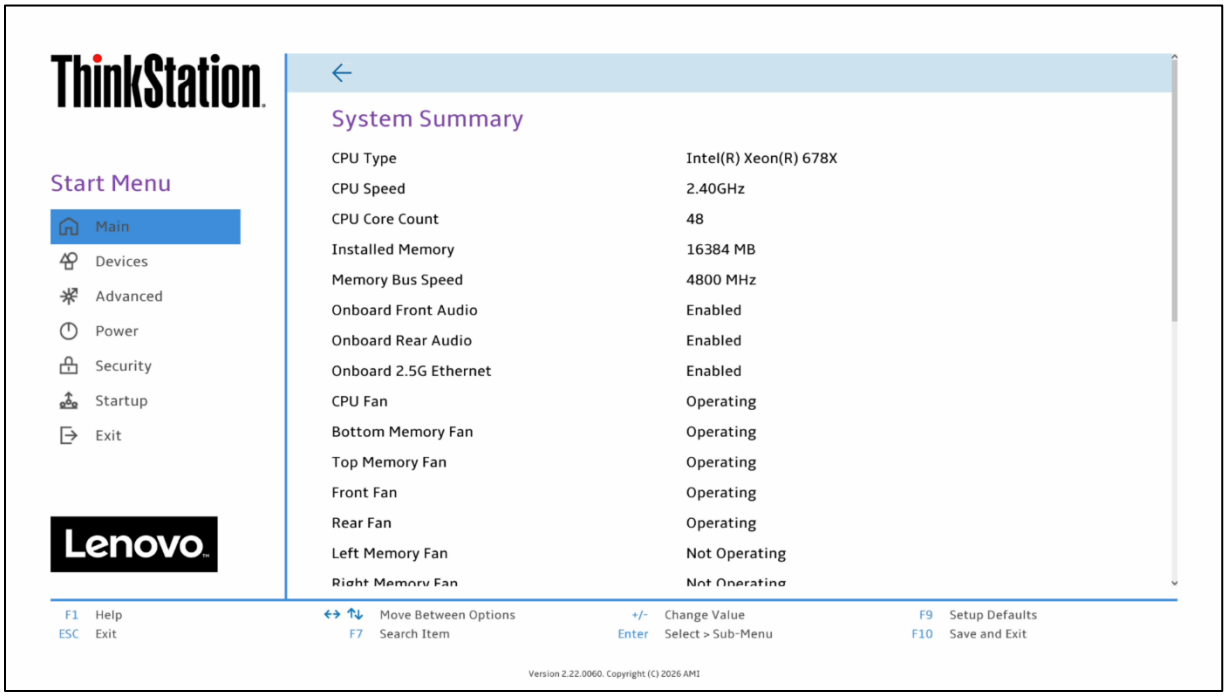
Note: Red Hat Enterprise Linux does NOT support bootable hardware RAID.

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

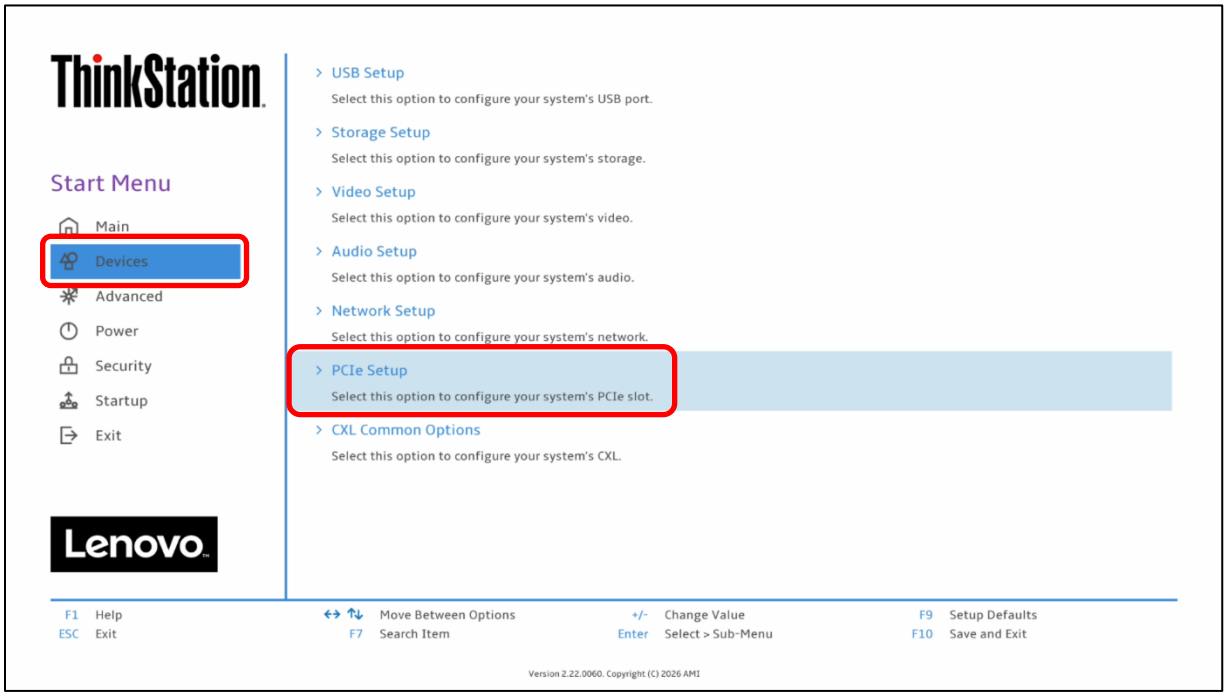
Select the *SYSTEM SUMMARY* option from the main BIOS setup page.



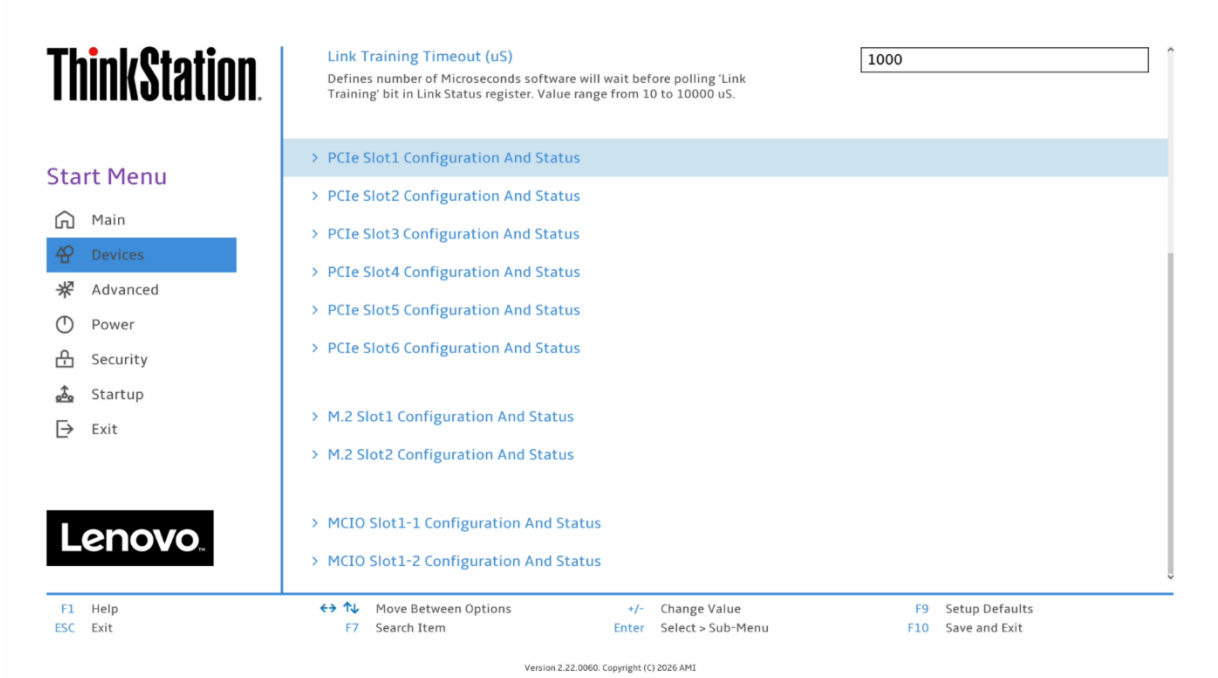
Verify whether BIOS recognizes each component in the system properly.



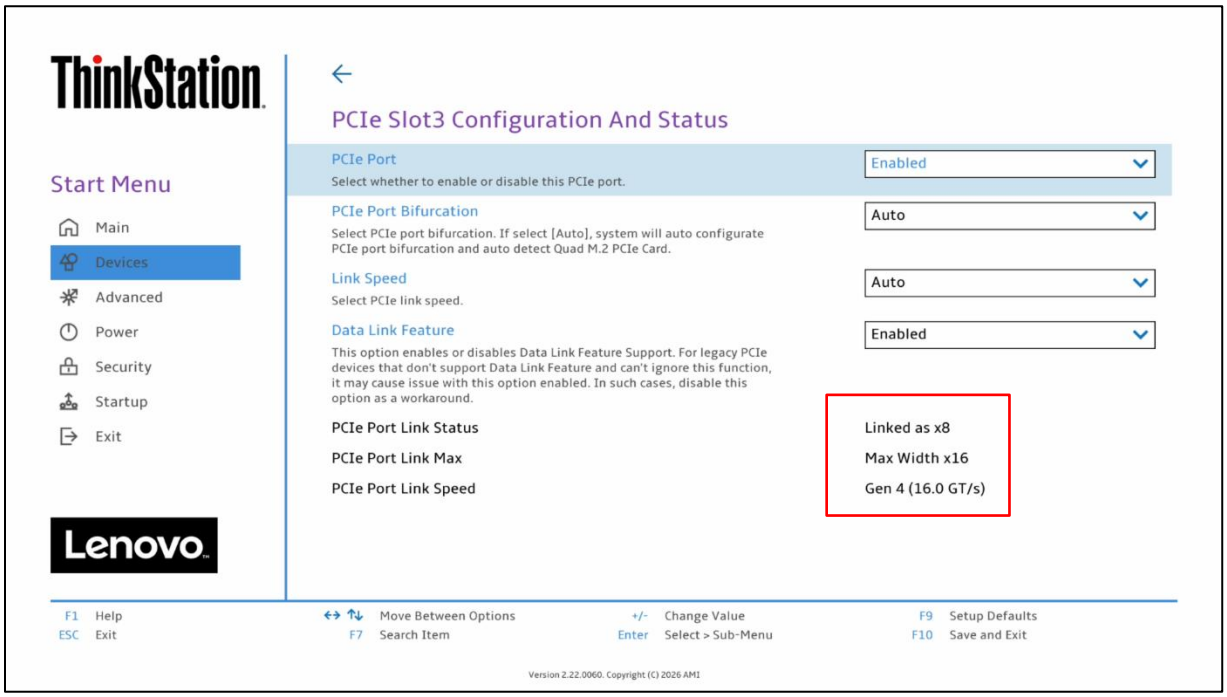
Select the *DEVICES* menu option and *PCIE SETUP*.



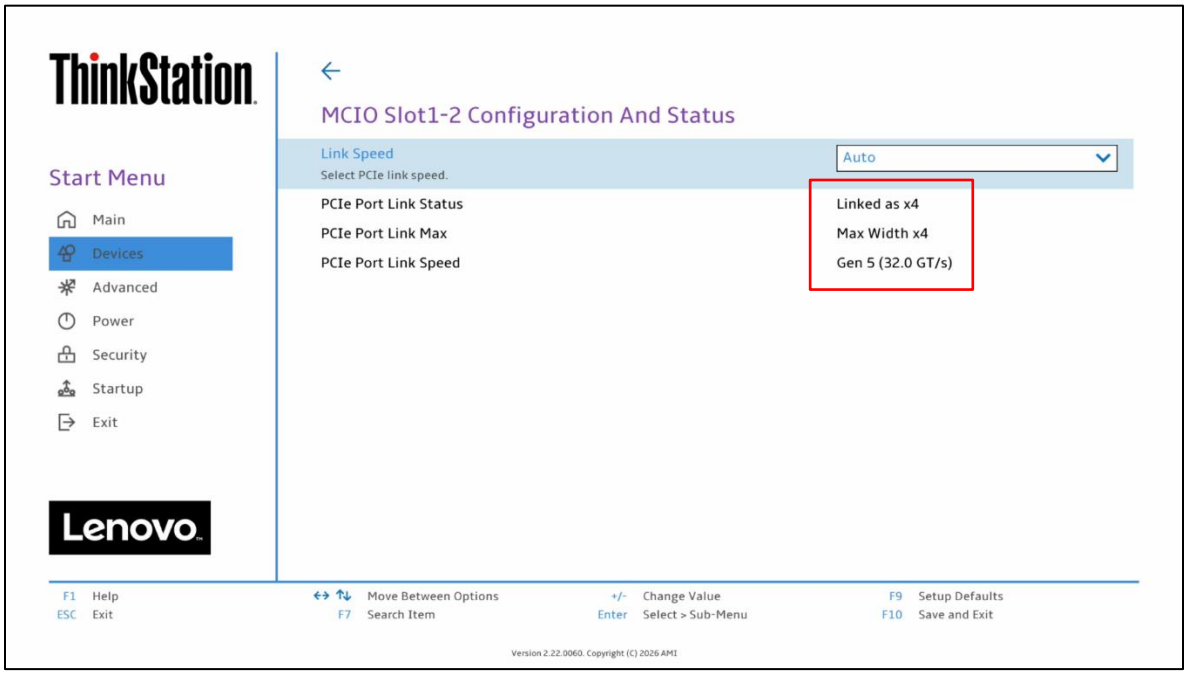
Verify whether BIOS recognizes and properly trains each PCIe add-in card and NVMe drive properly.



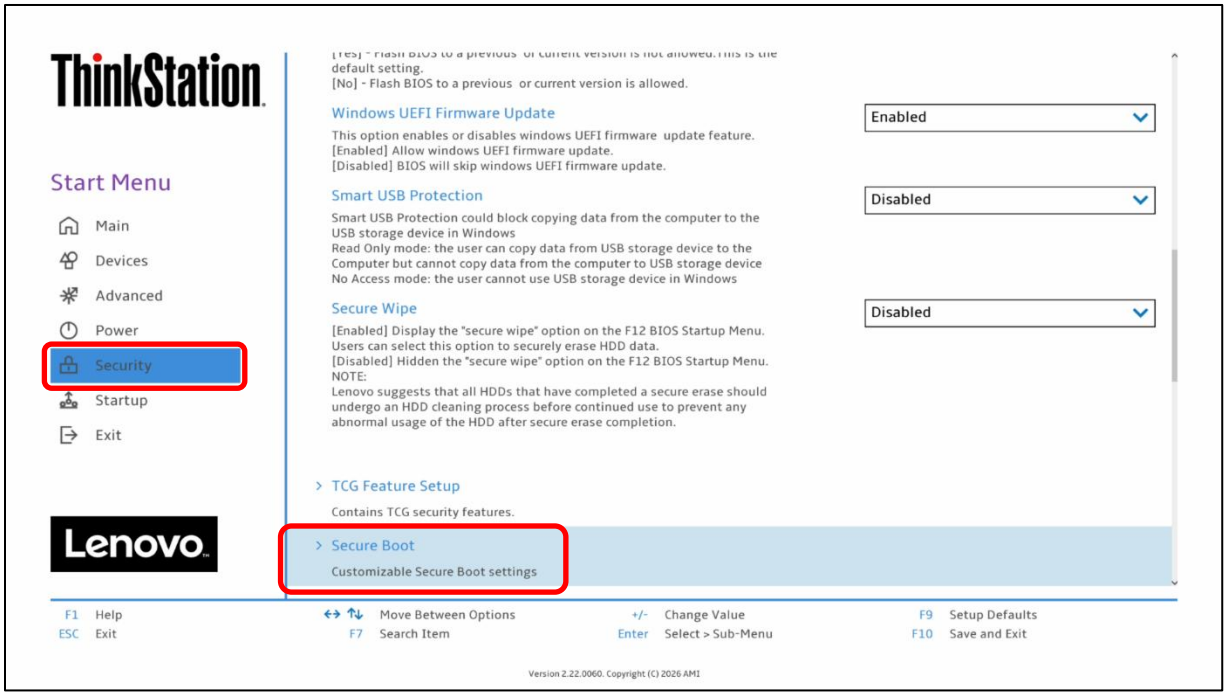
For example, verify the graphics card is being properly identified. In this example, the graphics card is an Nvidia RTX A400.



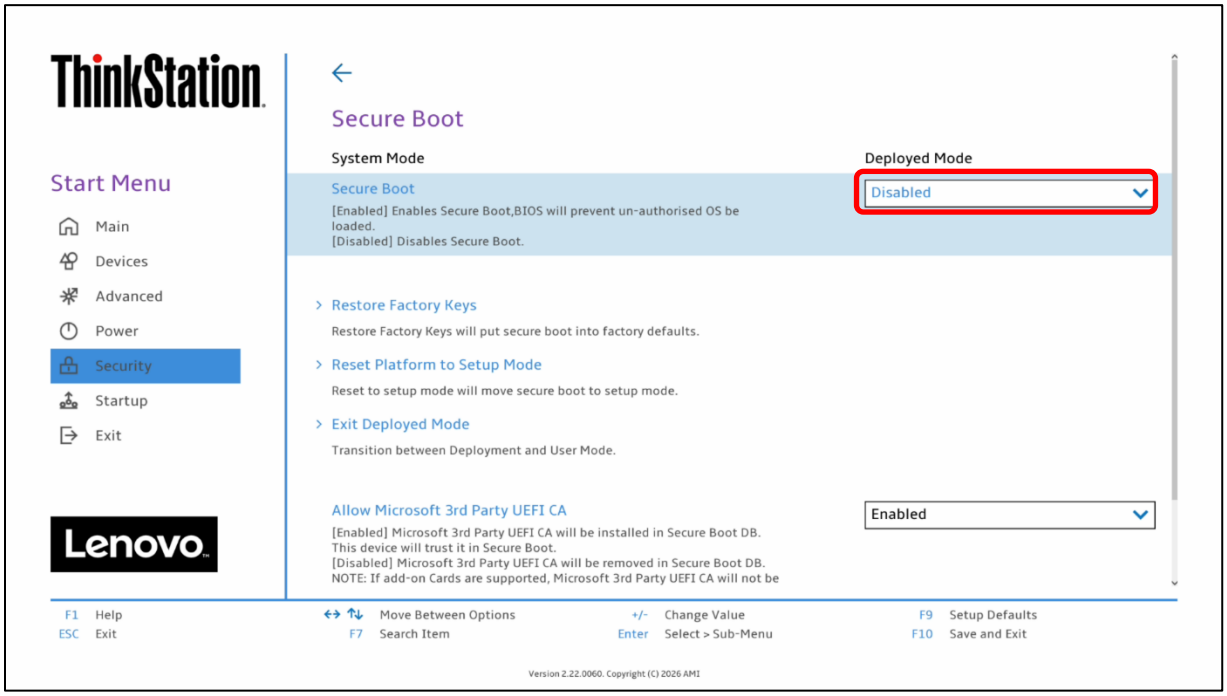
For example, verify the NVMe drive is being properly identified. In this example, the PCIe storage device is a Gen 5 M.2 NVMe drive.



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

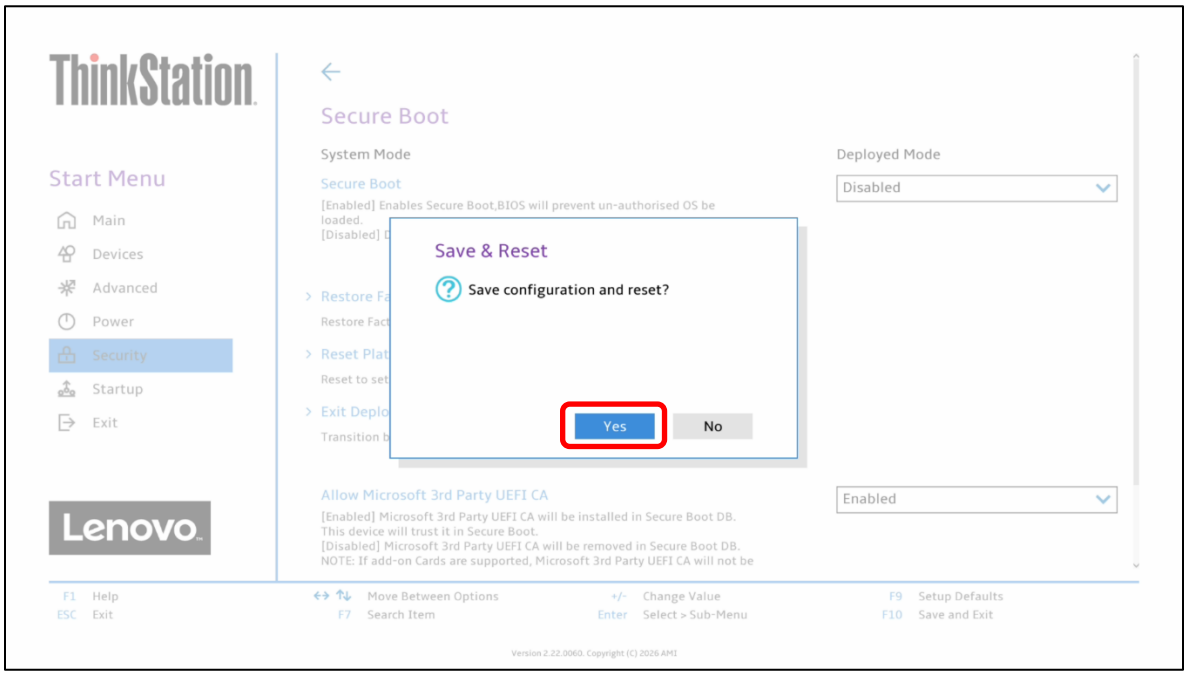


Select DISABLED from the drop-down menu.



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.

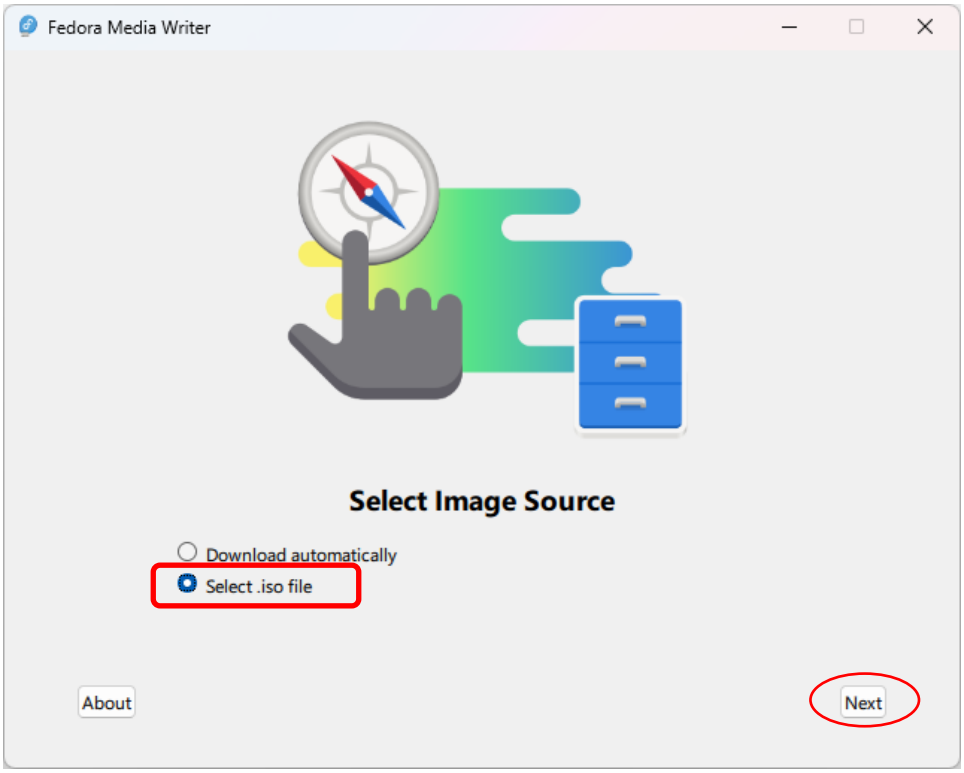


Section 2 – RHEL 10 Installation

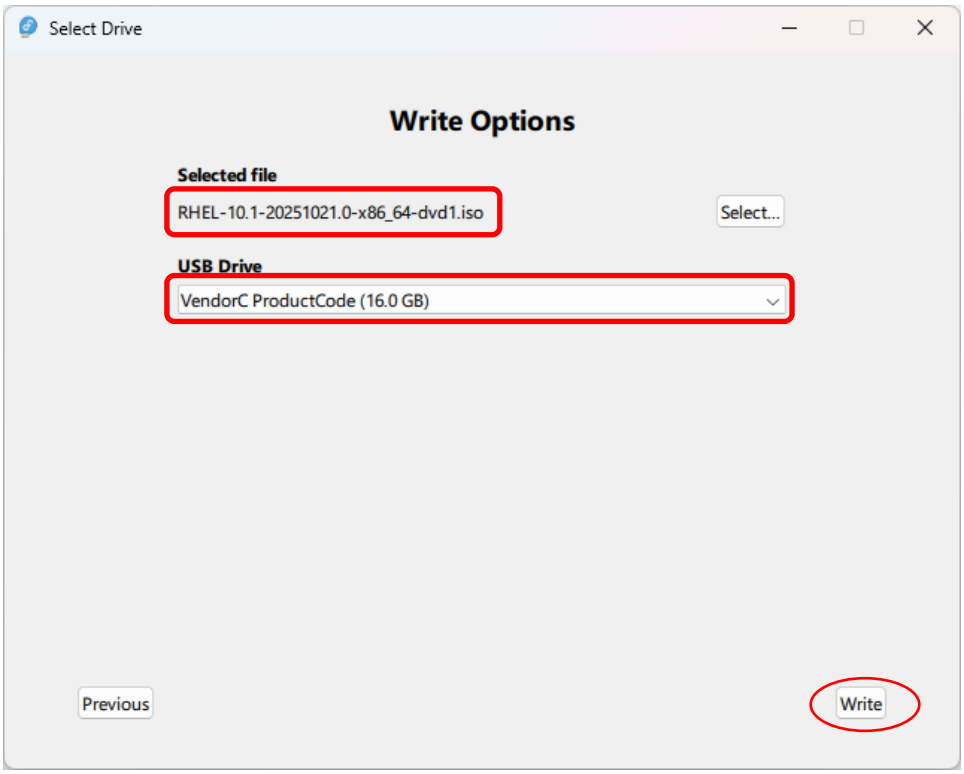
Here are some general instructions on how to get a Red Hat Enterprise Linux 10 operating system installed on the Lenovo ThinkStation PX, P8, P7, and P5 platforms.

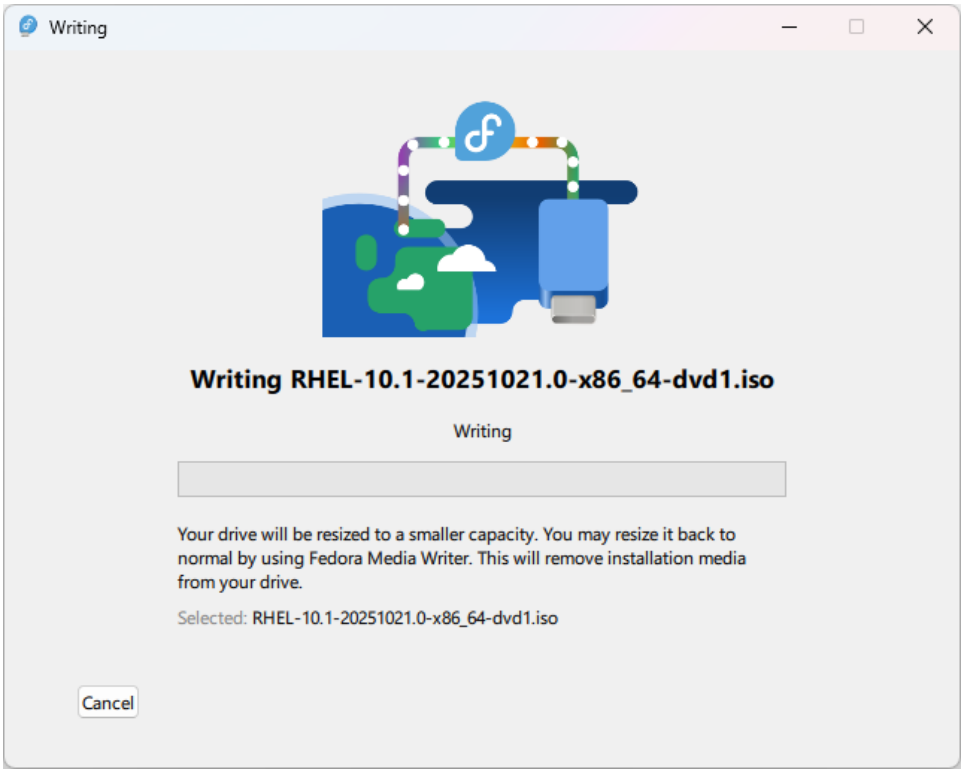
1. Obtain a copy of the RHEL 10 installation media. It is strongly recommended to use the Fedora Media Writer to make a bootable installation USB with the appropriate RHEL 10 ISO media.

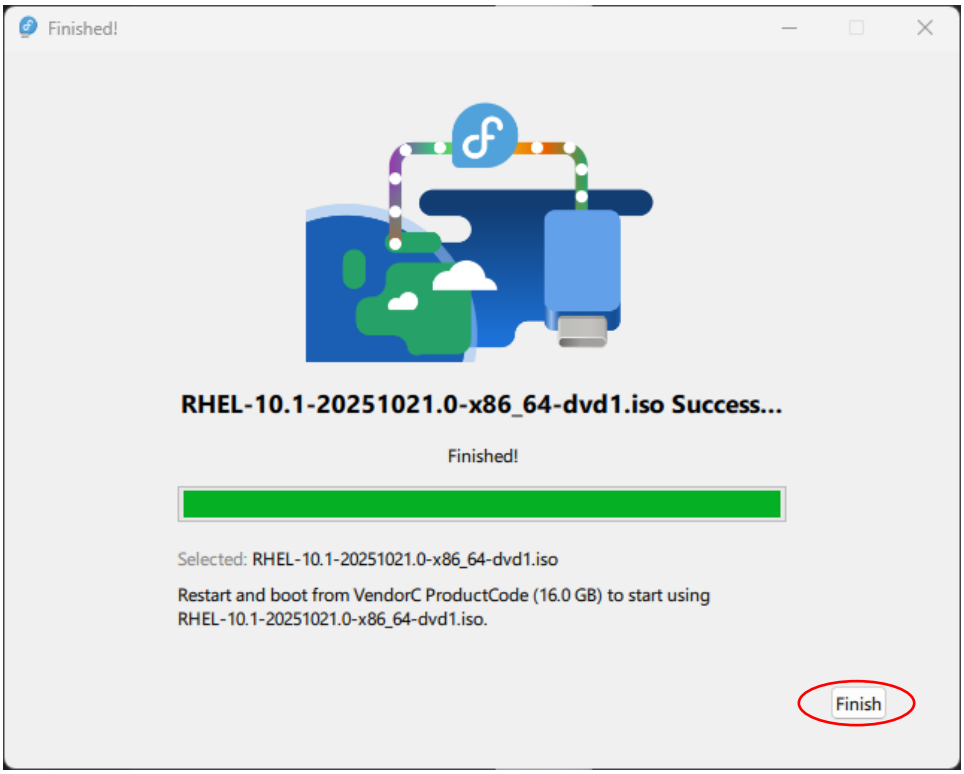
   In the Fedora Media Writer windows, select the option for “Select .iso file”.



Select the RHEL 10 installation media from the “Select” option and the appropriate USB drive from the drop-down menu and select “Write”.

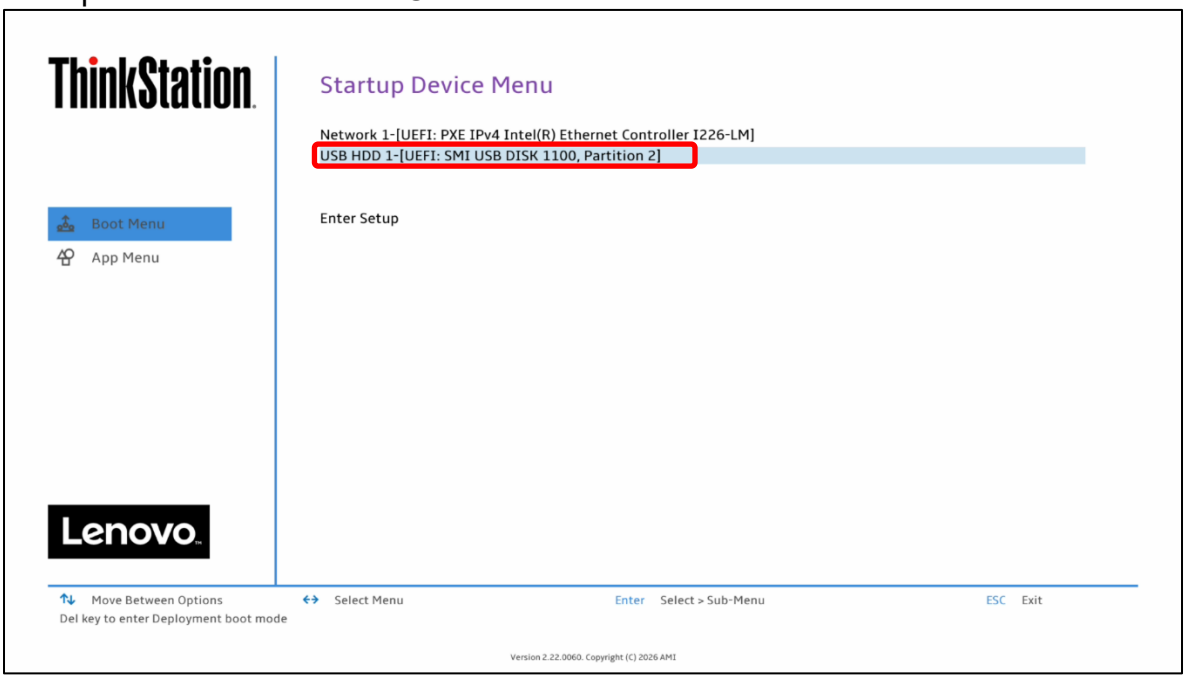




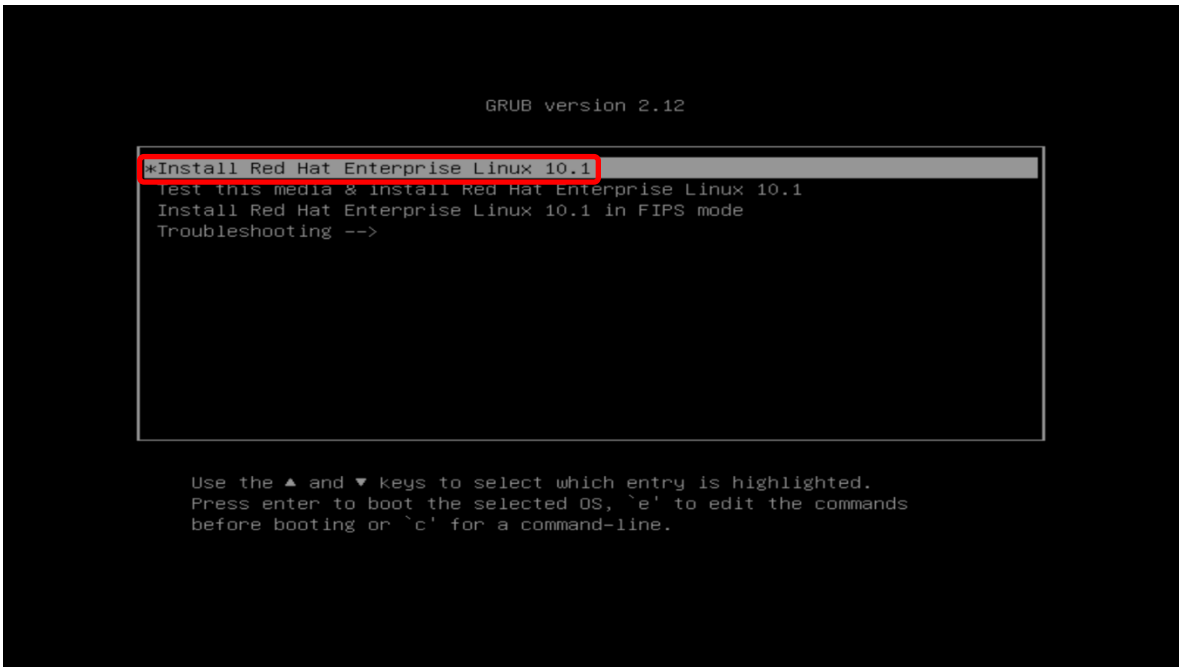


2. Insert the USB memory key into one of the USB ports on the system and power on the system.

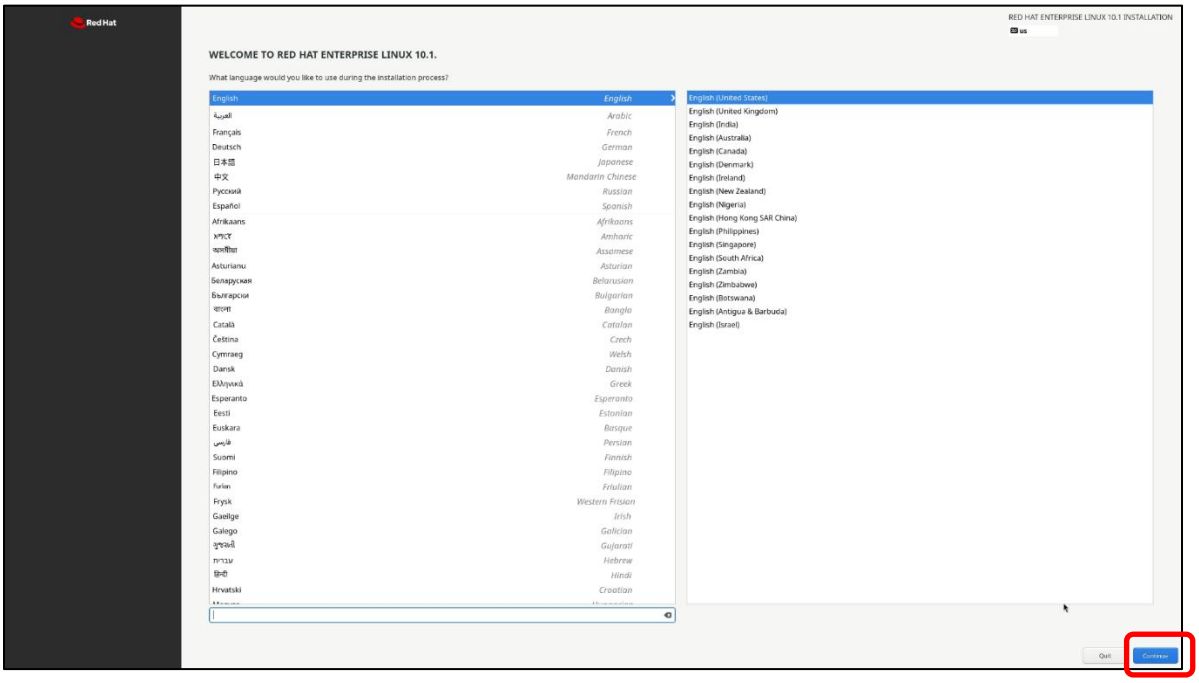
3. At the Lenovo splash screen, press the function F12 key to enter the BIOS startup menu and select the USB installation media from the list.



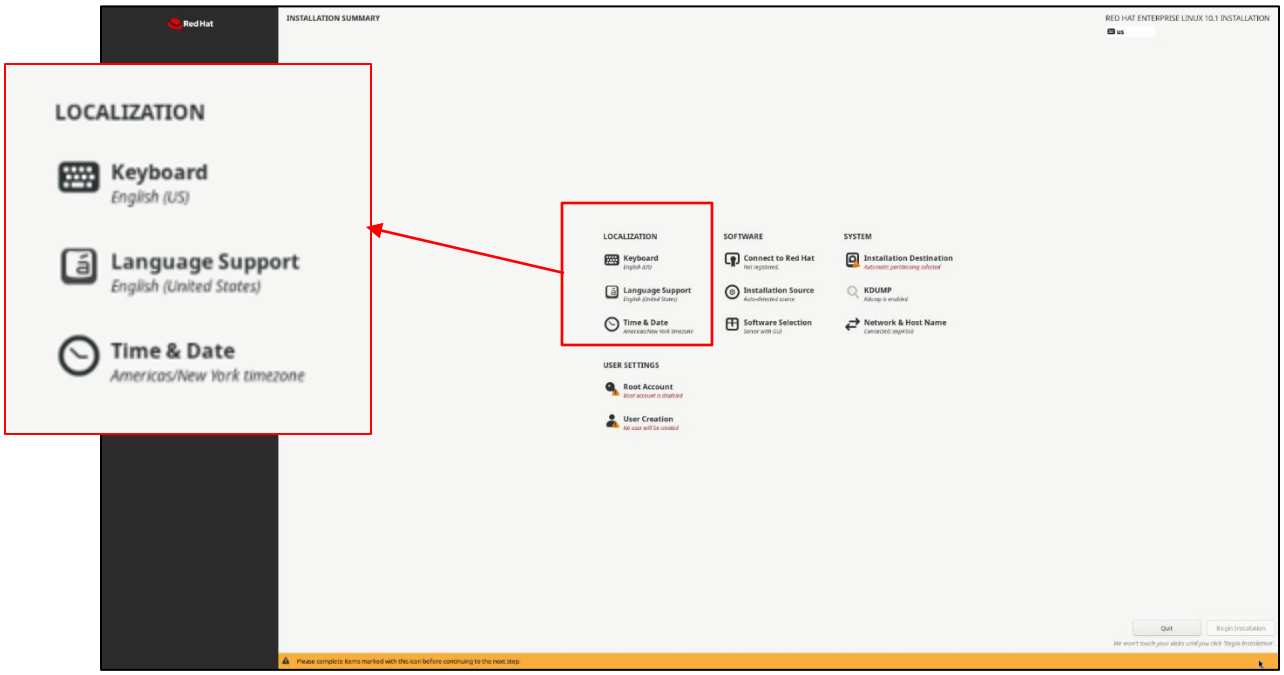
4. At the Linux GRUB boot menu, select the option for “Install Red Hat Enterprise Linux 10.1” from the list and select ENTER.



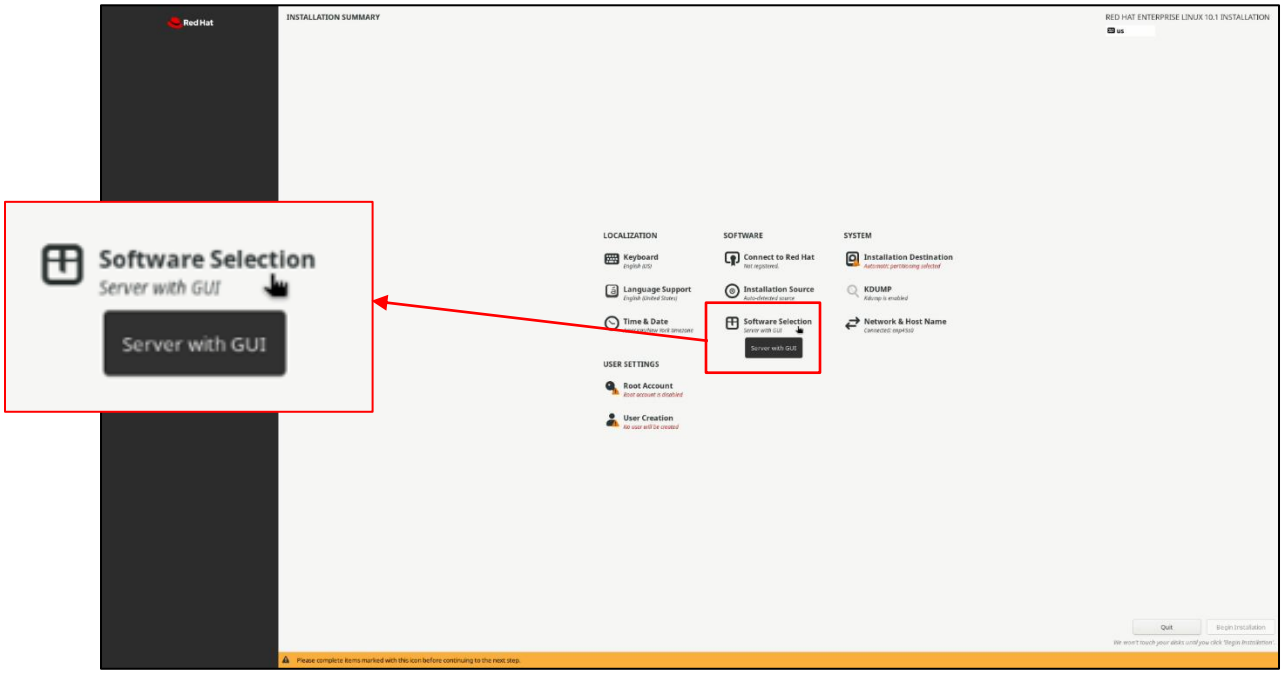
5. The Red Hat Enterprise Linux Welcome screen should appear. Select the appropriate language from the list of options and CONTINUE.



6. Adjust the *KEYBOARD*, *LANGUAGE SUPPORT*, and *TIME & DATE* according by selecting each one, or leave the default settings.

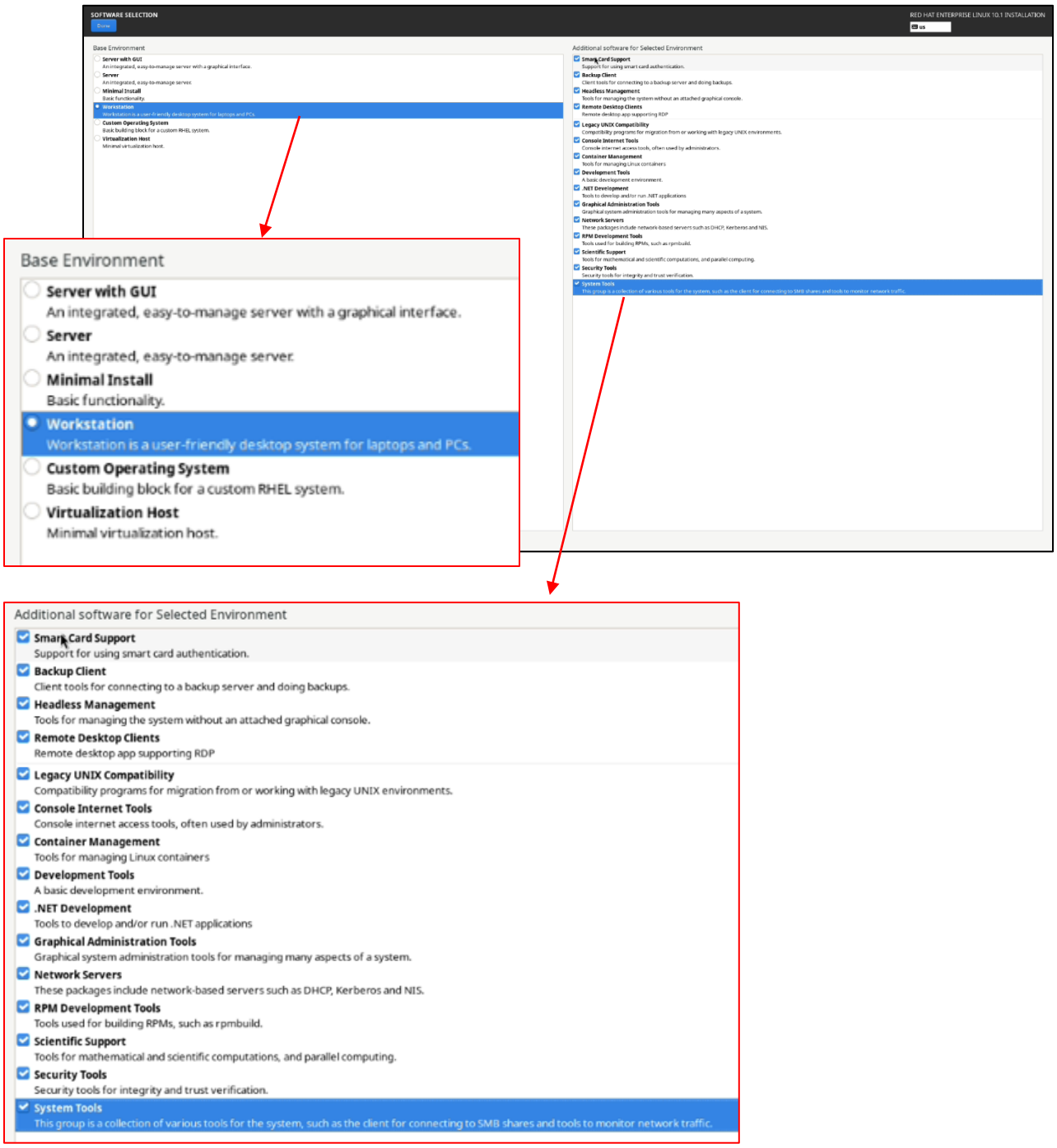


7. Select the *SOFTWARE SELECTION* and choose the type of software to install.

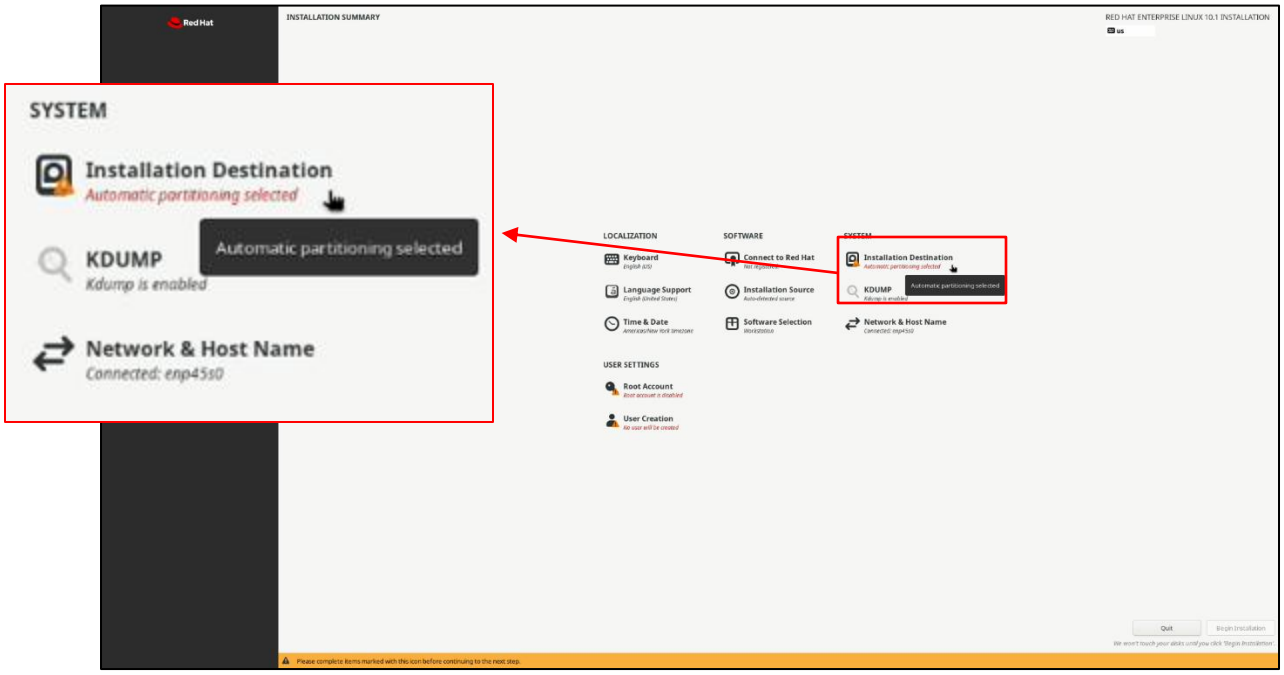


8. Select the *BASE ENVIRONMENT* and the *ADDITIONAL SOFTWARE FOR SELECTED ENVIRONMENT*.

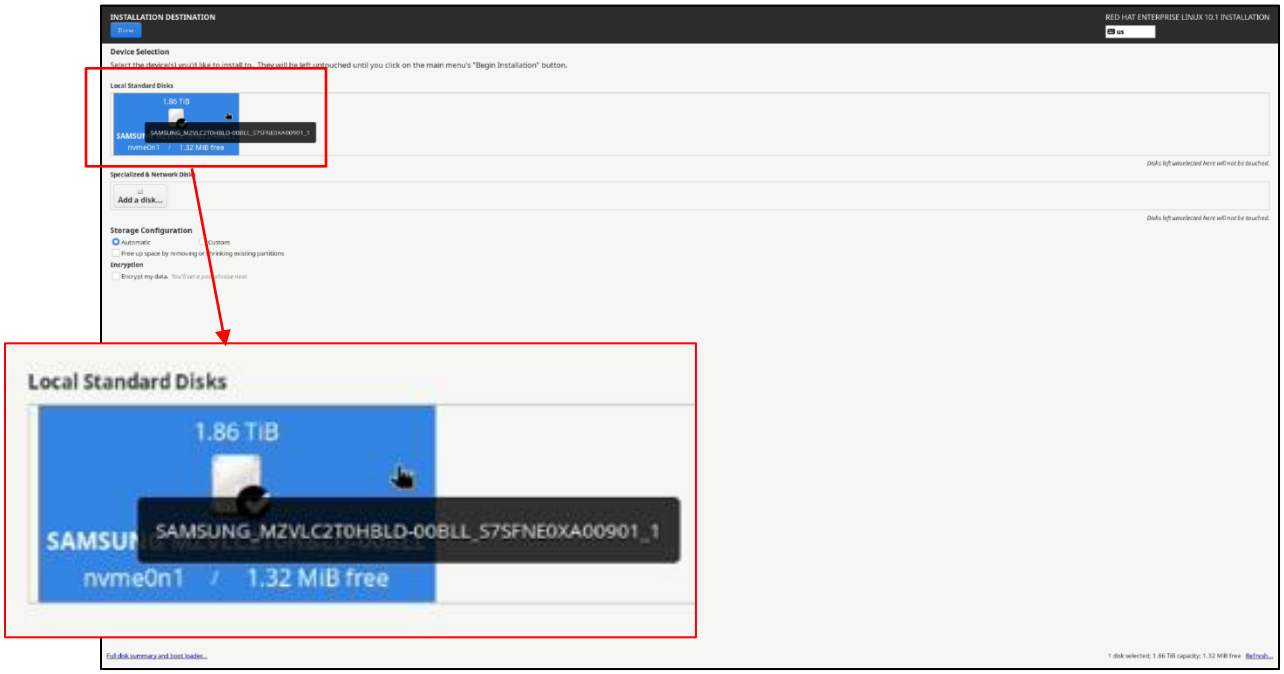
   Note: In this example, *WORKSTATION* was selected for the *BASE ENVIRONMENT* and all additional software tools were selected.



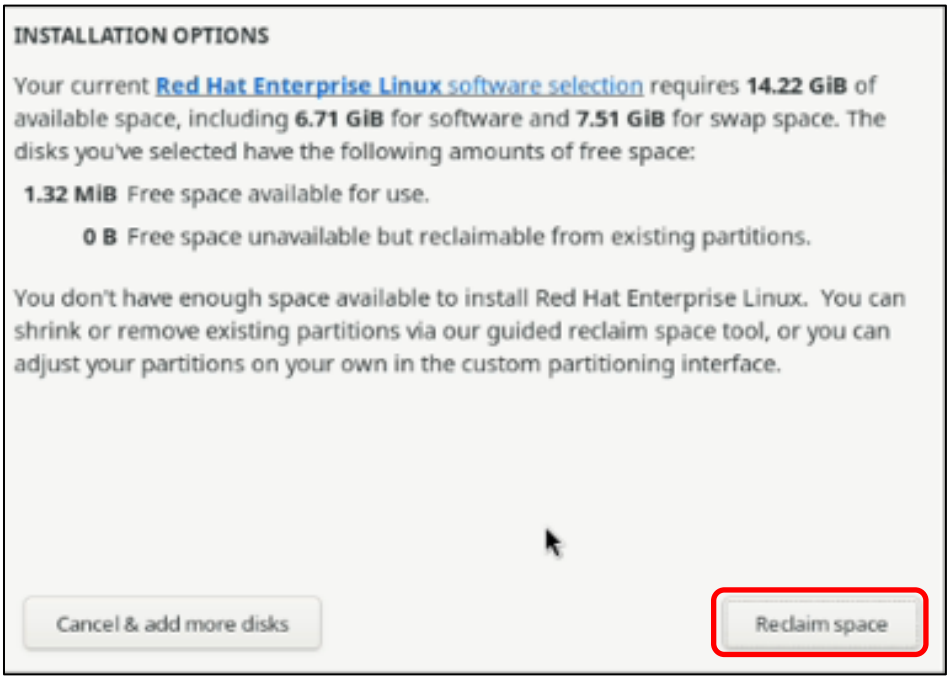
12. Select *INSTALLATION DESTINATION*.



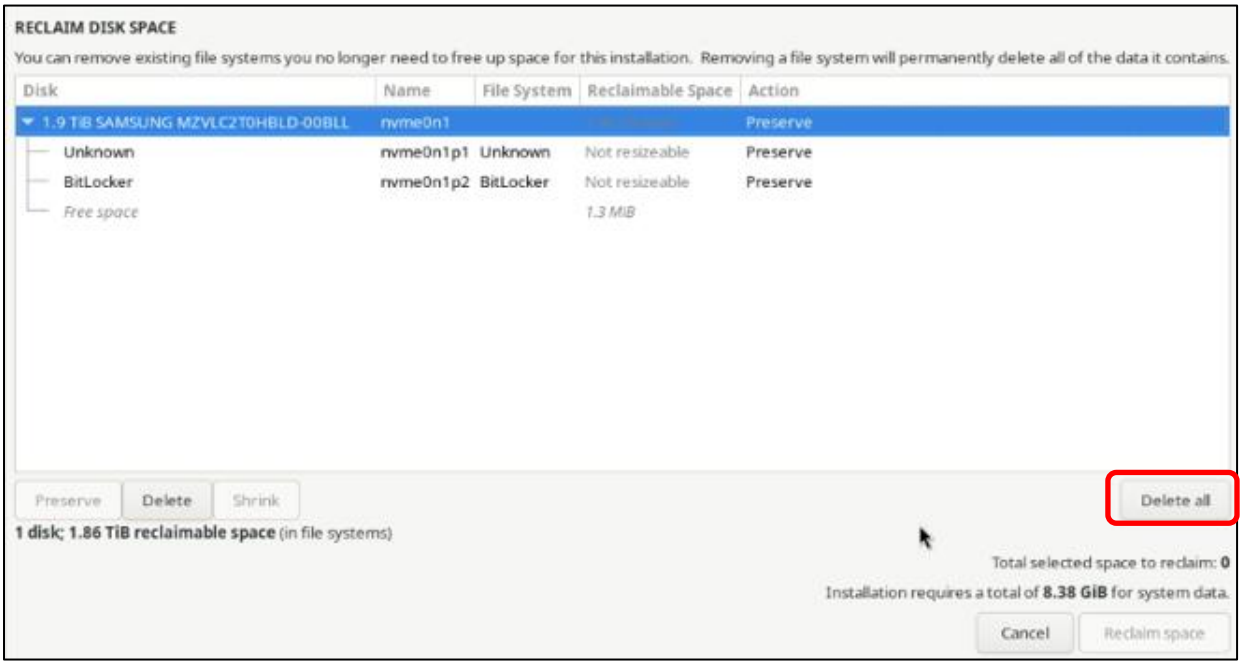
13. Select the drive on where to install the operating system.



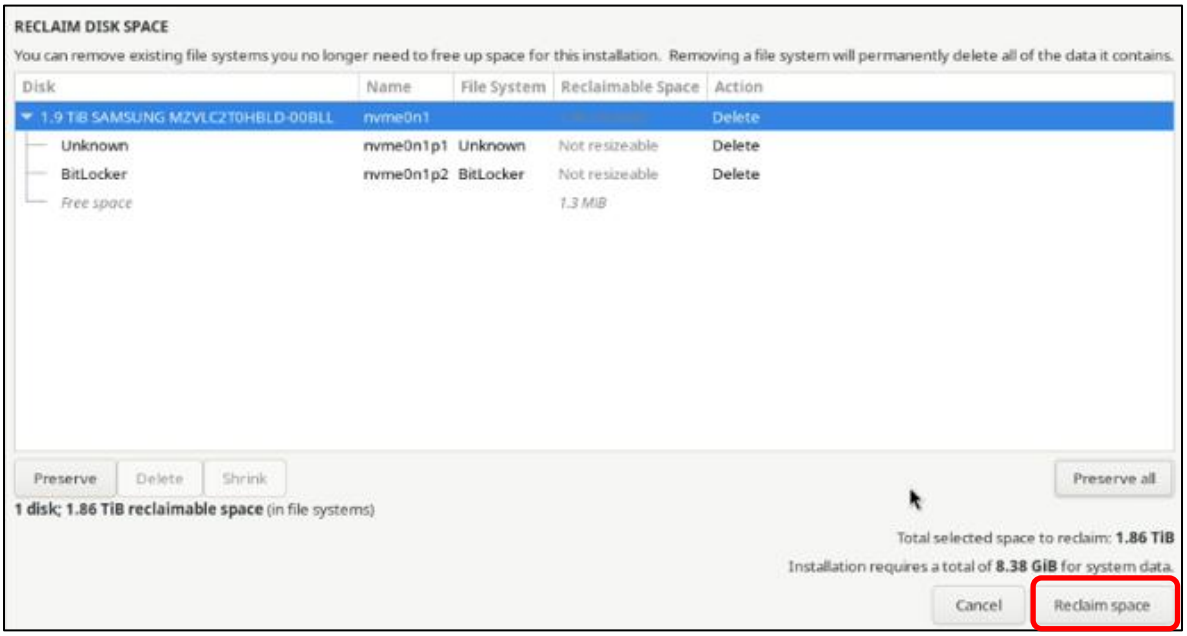
14. If there was a partition on the drive previously, select *RECLAIM SPACE*.



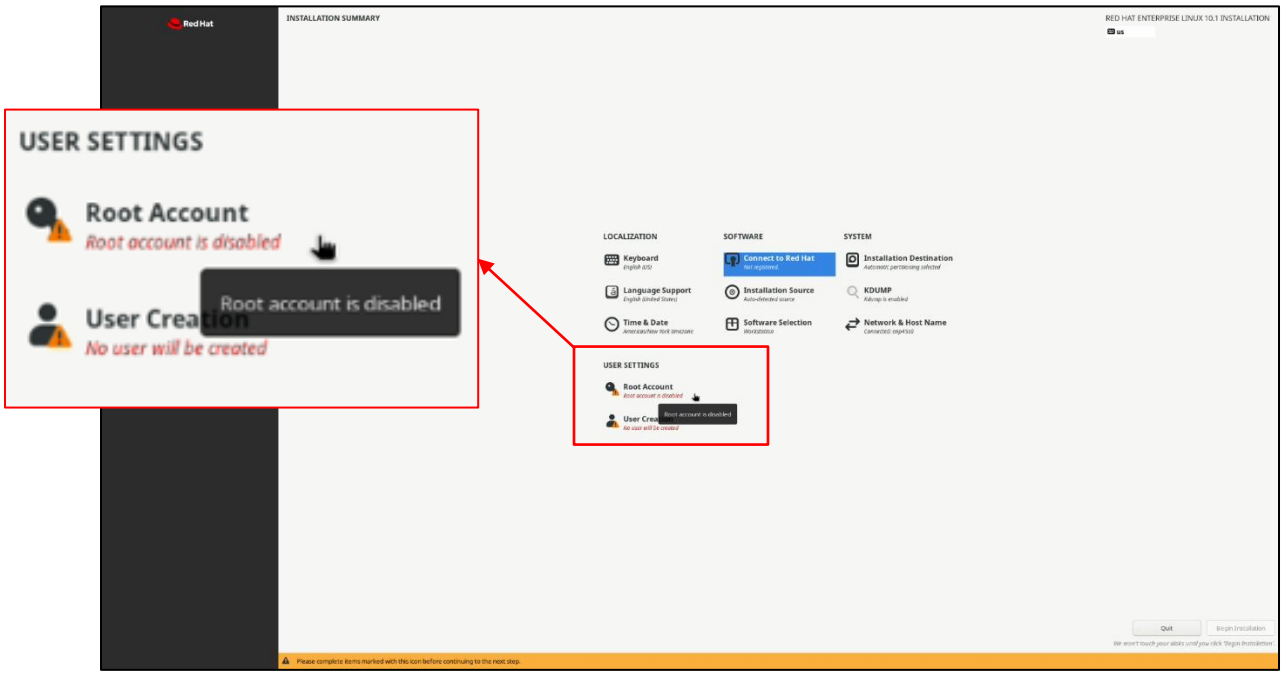
Then, *DELETE ALL* to wipe the existing partitions.



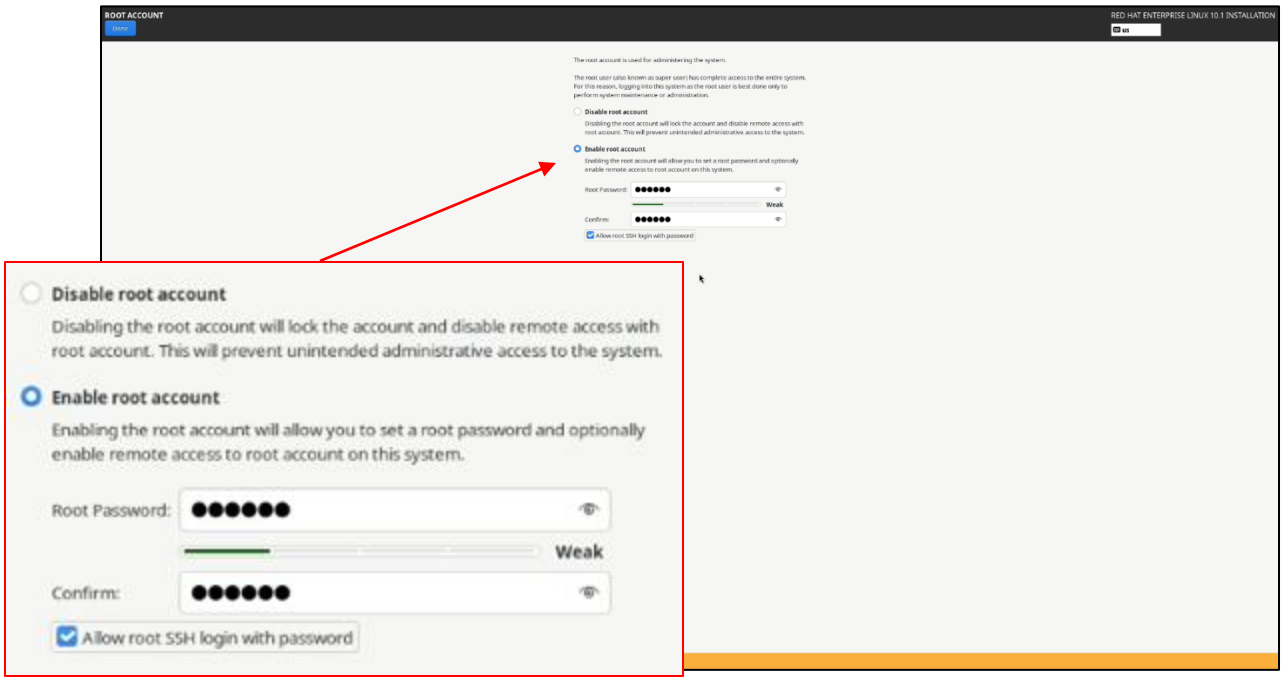
Then, RECLAIM SPACE.



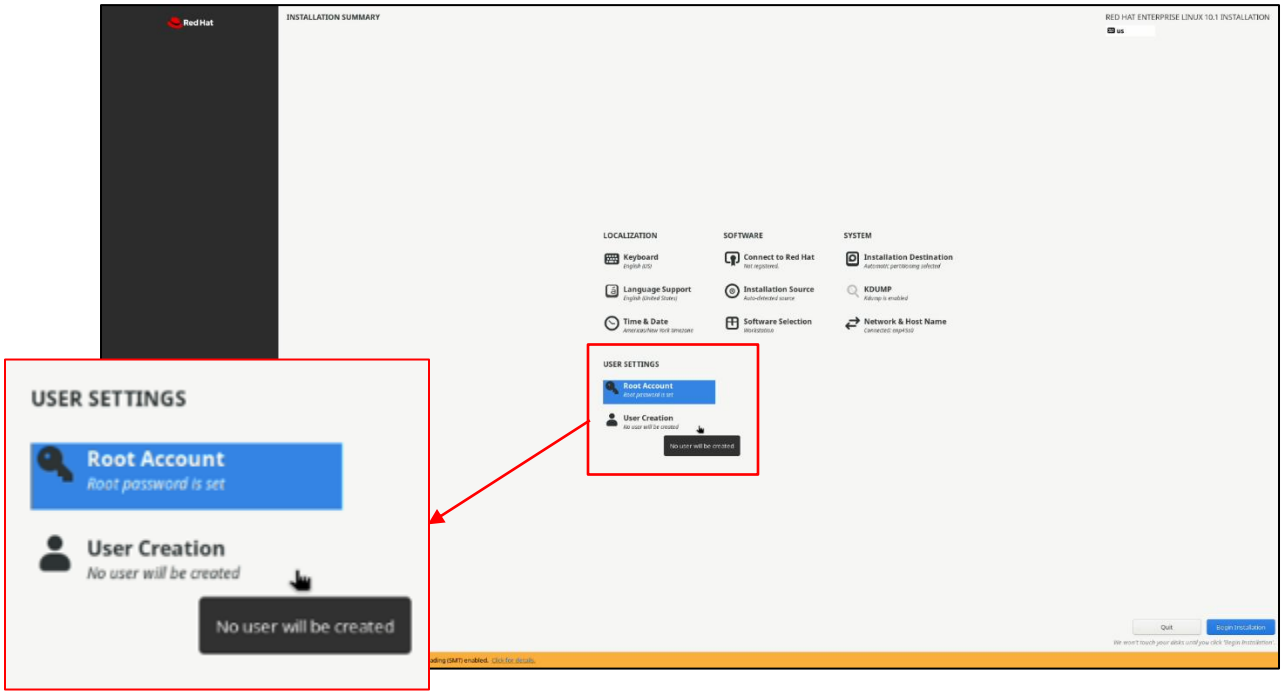
15. Select *ROOT PASSWORD*.



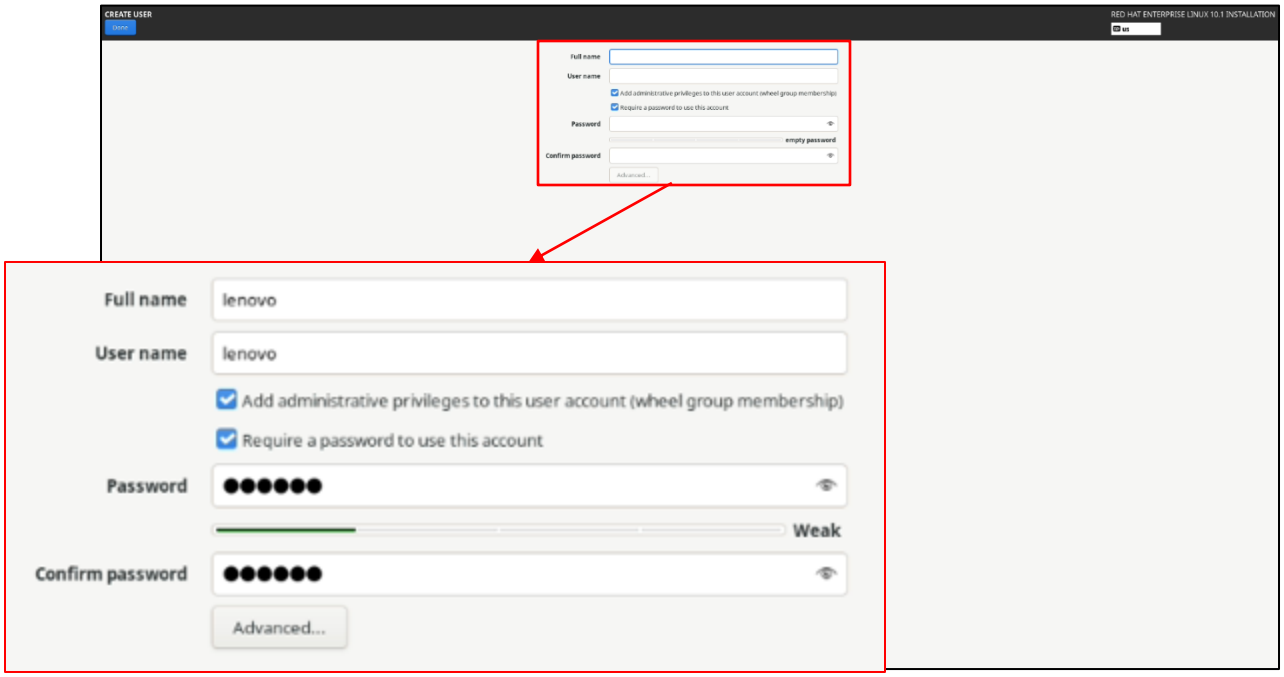
16. Choose whether to enable or disable the root account. In this example, the root password is enabled. Enter a root password in the text boxes below.



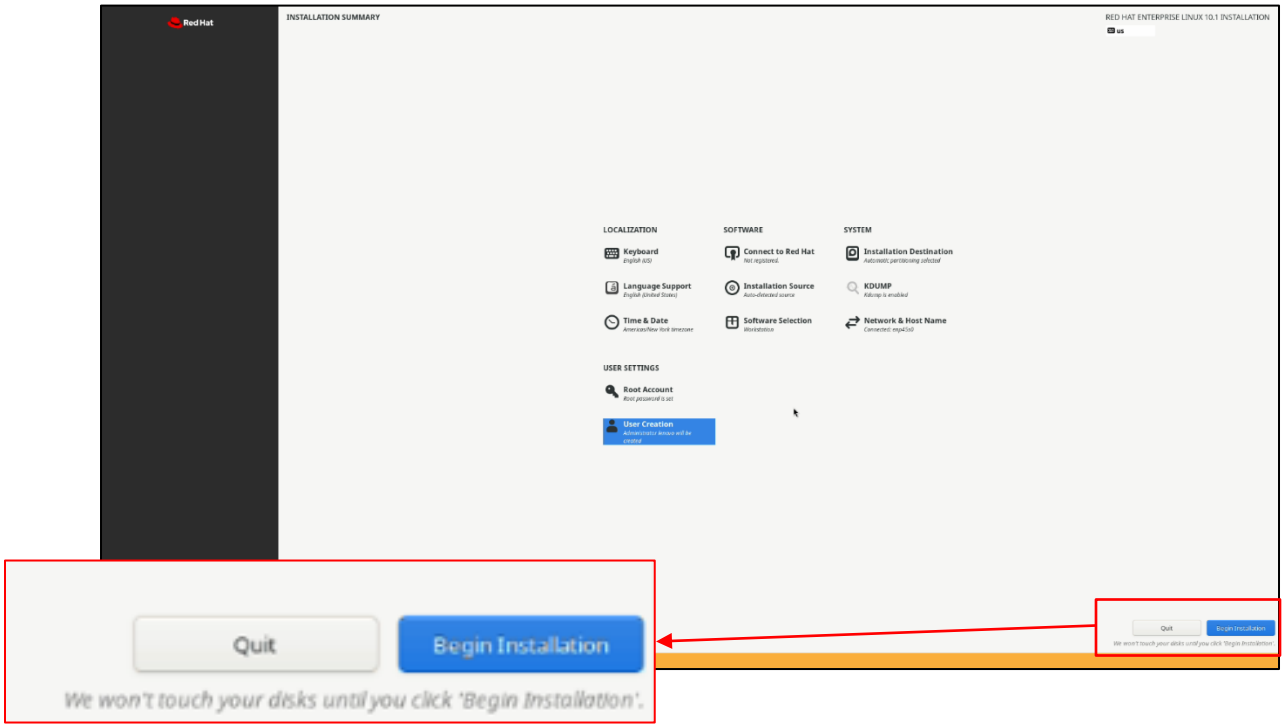
17. Select *USER CREATION*.



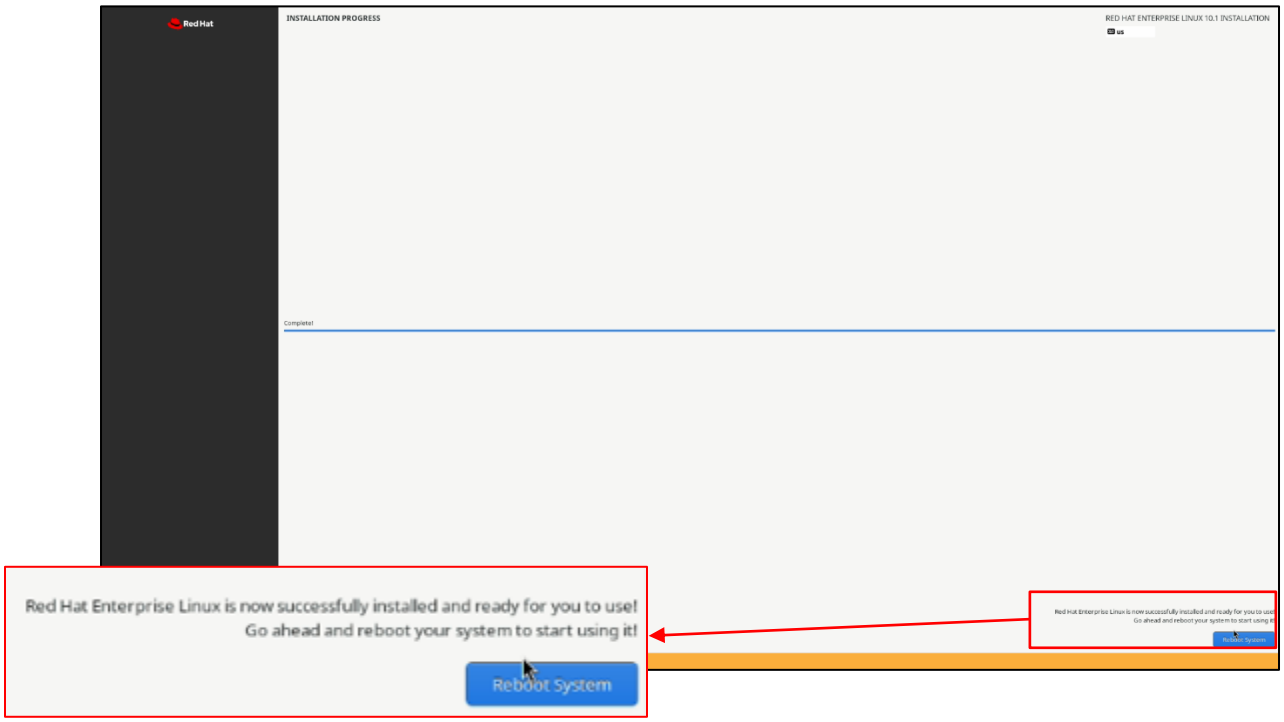
18. Fill in the appropriate boxes below for creating a user.



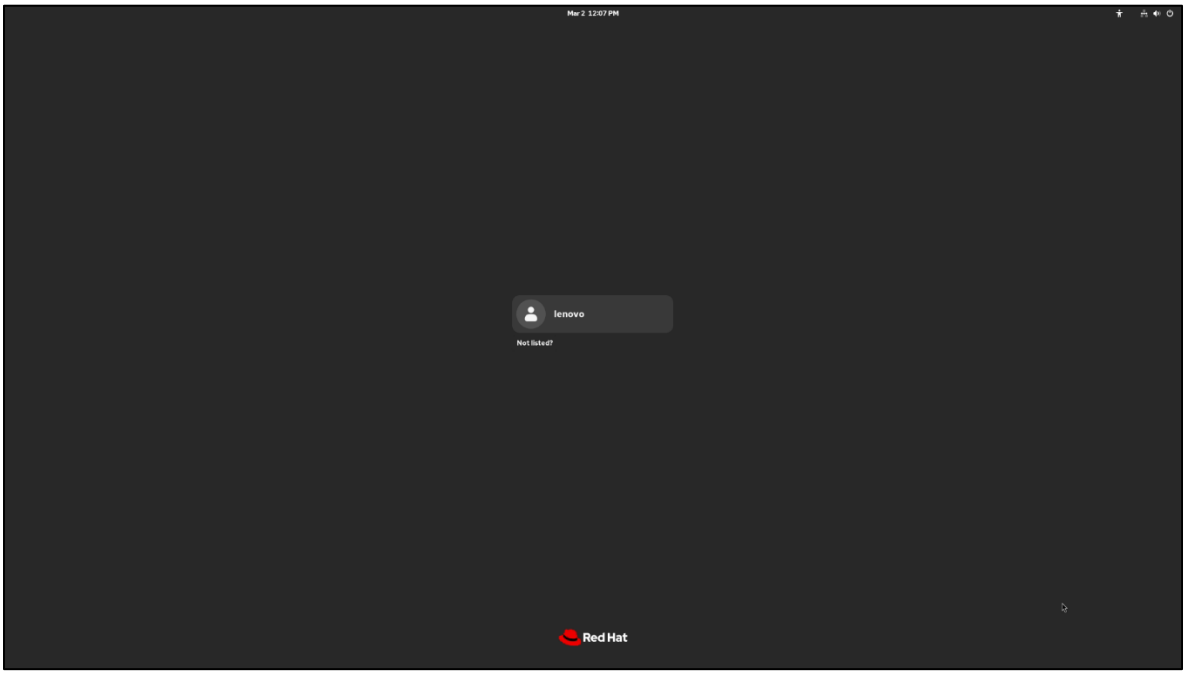
19. Select *BEGIN INSTALLATION*.



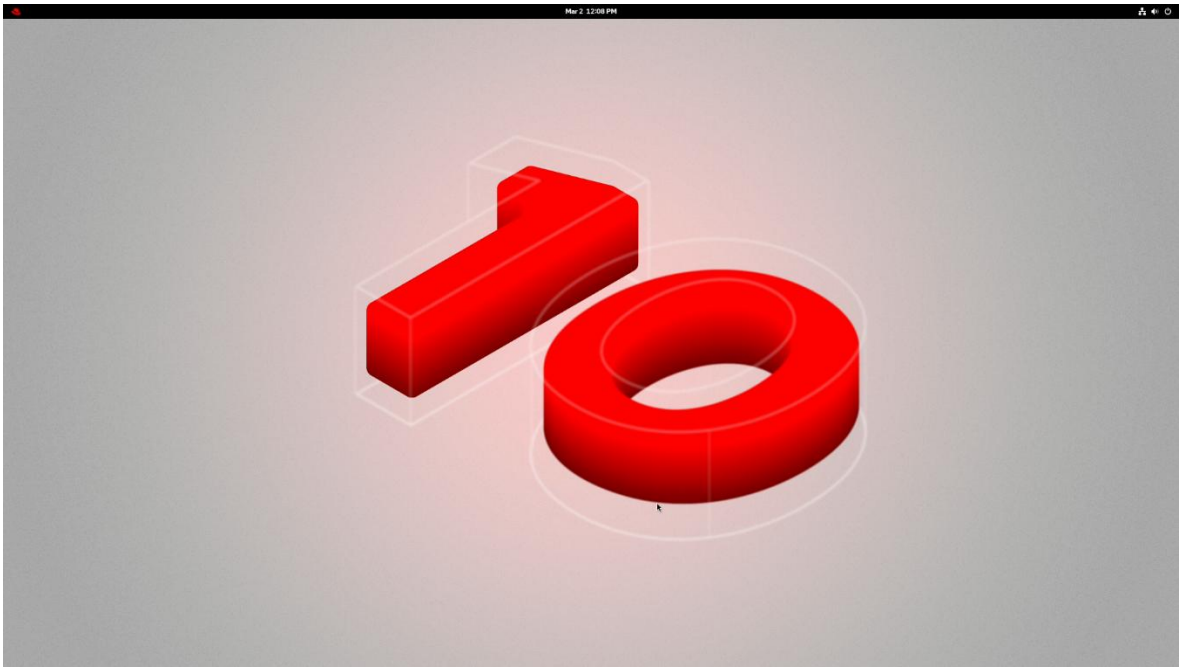
20. Once the installation is completed, select *REBOOT SYSTEM,* and remove the installation boot media.



21. Select the user icon and log in using the credentials created above.



22. Red Hat Enterprise Linux 10 Desktop screen.



Section 3 - Install Device Drivers

Most of the standard building blocks used within the ThinkStation PX, P8, P7, and P5 platforms are native to the Red Hat Enterprise Linux 10 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 Red Hat Upstream kernel repository or from 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.

Section 4 – Installing Nvidia Graphics Drivers from Red Hat Upstream

To install drivers using the Red Hat upstream kernel repository, a valid Red Hat subscription will be required. Execute the following commands to install the Red Hat upstream Nvidia kernel driver.

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

```
# sudo subscription-manager register

# sudo dnf update redhat-release

# sudo dnf install rhel-drivers

# sudo rhel-drivers install nvidia

# sudo reboot

# nvidia-smi
```

```
lenovo@localhost:~$ nvidia-smi
Tue Mar  3 10:41:44 2026
+-----------------------------------------------------------------------------------------+
| NVIDIA-SMI 590.48.01              Driver Version: 590.48.01      CUDA Version: 13.1     |
+-----------------------------------------+------------------------+----------------------+
| 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 |   00000000:46:00.0  On |                  N/A |
| 30%   36C    P8            N/A  /   50W |     115MiB /   4094MiB |      0%      Default |
|                                         |                        |                  N/A |
+-----------------------------------------+------------------------+----------------------+

+-----------------------------------------------------------------------------------------+
| Processes:                                                                              |
|  GPU   GI   CI              PID   Type   Process name                        GPU Memory |
|        ID   ID                                                               Usage      |
|=========================================================================================|
|    0   N/A  N/A            3112      G   /usr/bin/gnome-shell                     85MiB |
|    0   N/A  N/A            3226      G   /usr/bin/Xwayland                         1MiB |
+-----------------------------------------------------------------------------------------+
```

To completely remove all NVIDIA drivers from RHEL 10, use the following command:

```
# sudo dnf remove “*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.

```
  GNU nano 8.1                                    /etc/modprobe.d/blacklist.conf
blacklist nouveau
```

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

   # sudo dracut --force
   # sudo reboot

```
lenovo@localhost:~$ sudo dracut --force
lenovo@localhost:~$ sudo reboot
```

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

   # sudo init 3

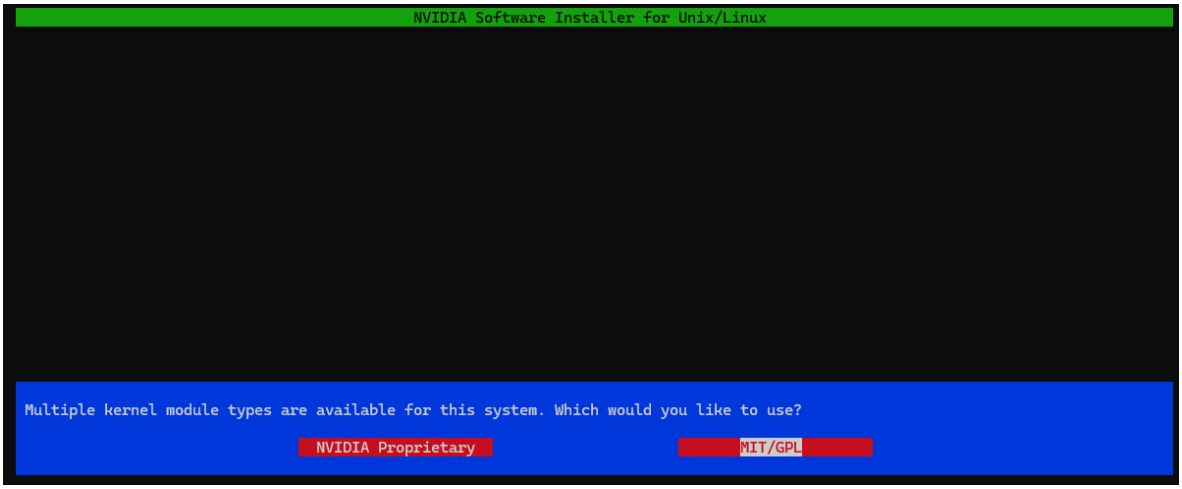
```
lenovo@localhost:~$ sudo init 3
lenovo@localhost:~$
```

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

   # sudo bash NVIDIA*

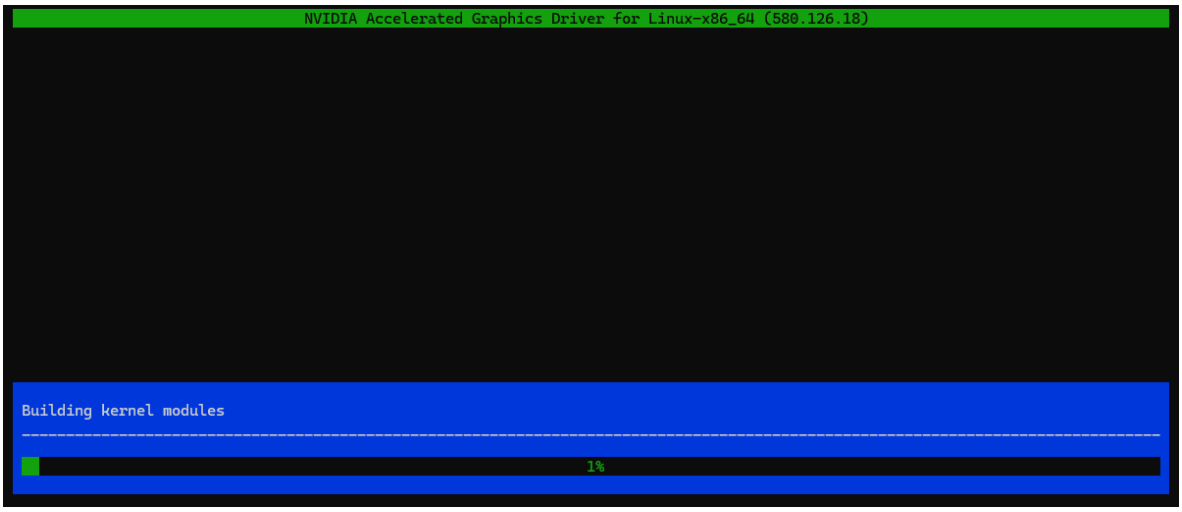
```
lenovo@localhost:~$ sudo bash NVIDIA-Linux-x86_64-580.126.18.run
```

6. Select the *MIT/GPL* option.



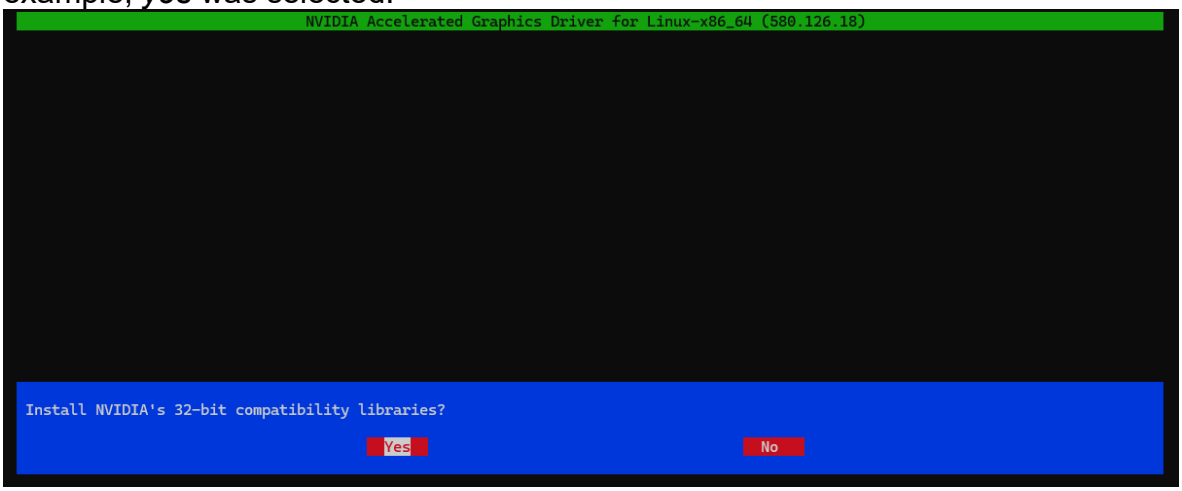
7. The driver should begin to build the kernel modules.

   =

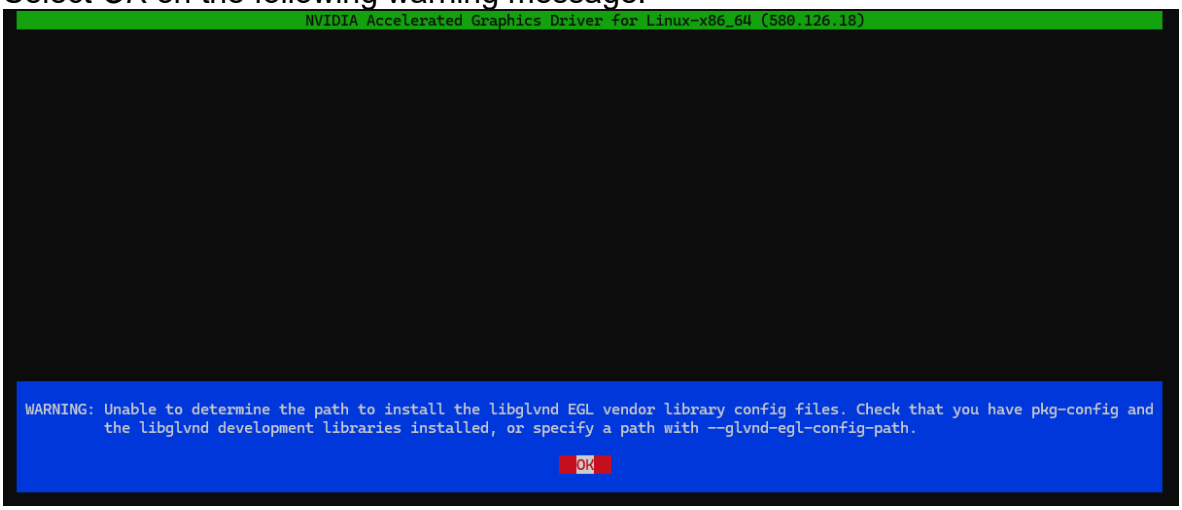


8. Select *OK* on the following warning message.

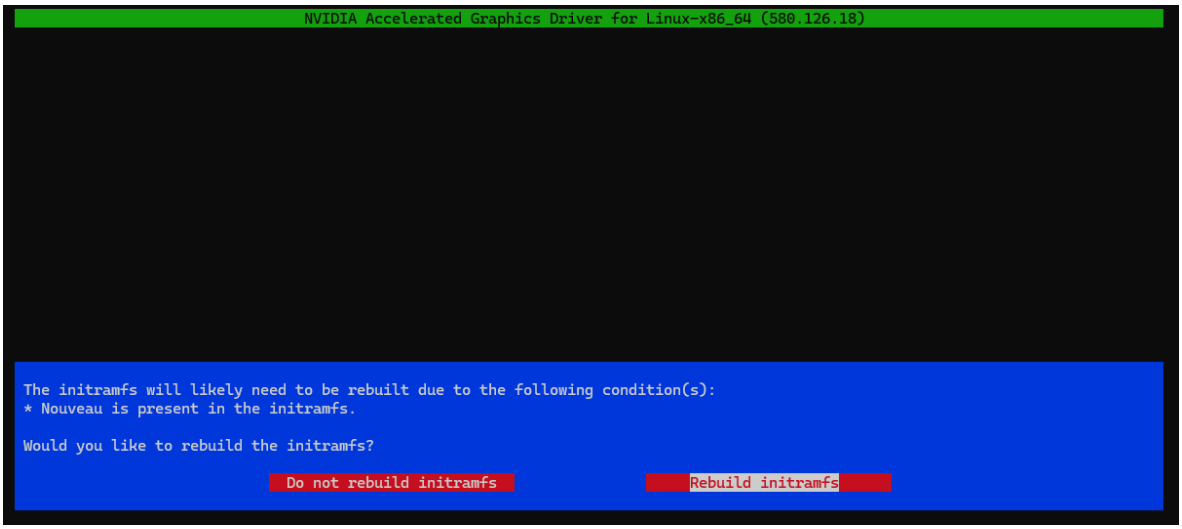
9. Determine whether to install NVIDIA's 32-bit compatibility libraries. In this example, *yes* was selected.



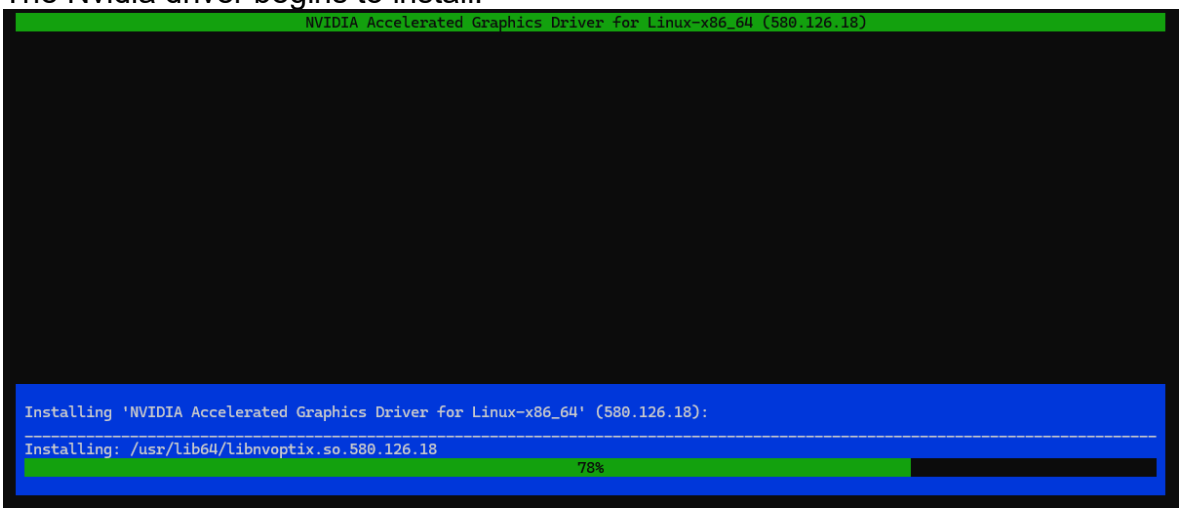
10. Select *OK* on the following warning message.



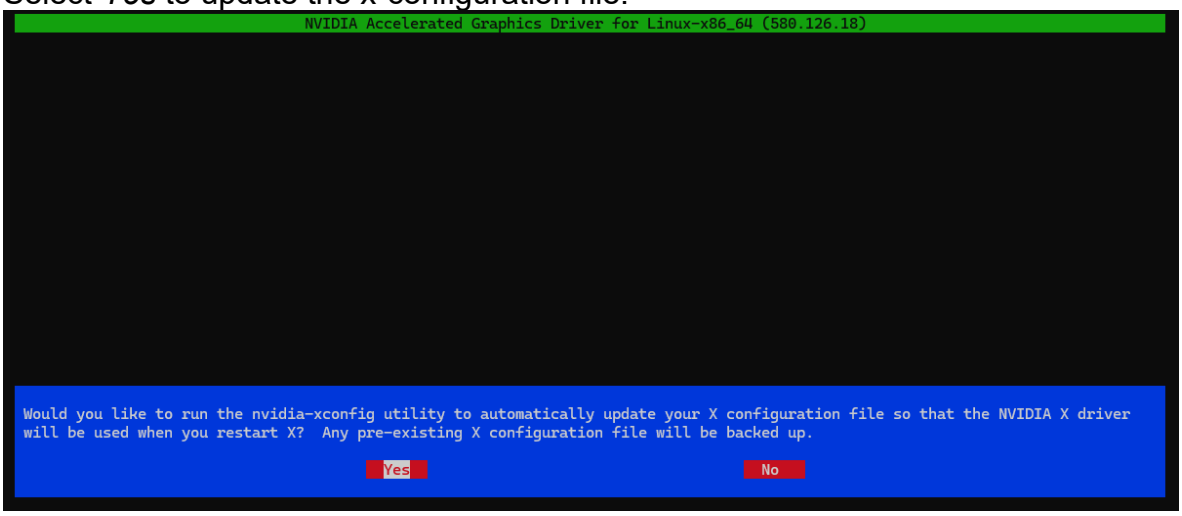
11. Select *Rebuild initramfs*.



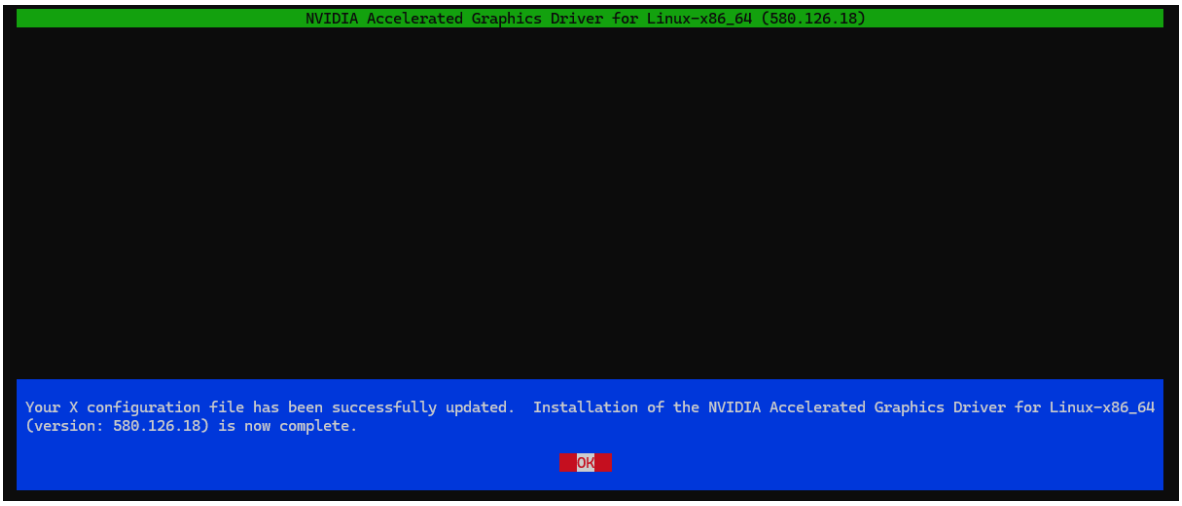
12. The Nvidia driver begins to install.



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

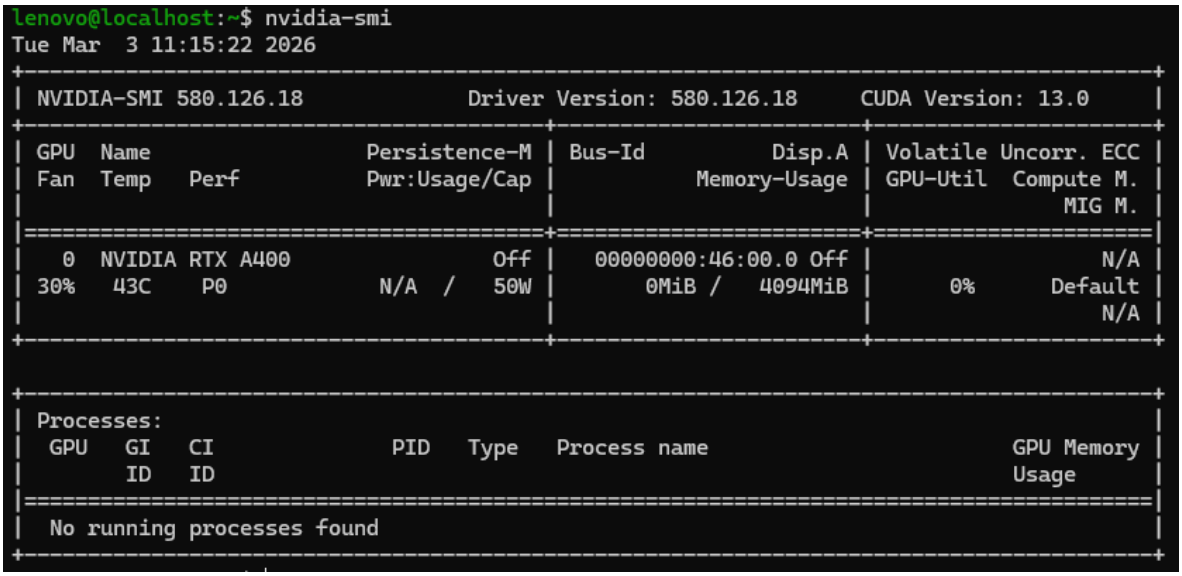


14. Select *OK* to acknowledge that the x-configuration file has successfully been updated.



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

nvidia-smi



16. Reboot the system to boot back into the RHEL 10 Desktop screen.

sudo reboot

Revision History

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