

Red Hat Enterprise Linux Setup Guide

For ThinkPad P1

**** Official support of RHEL 7.5 and later.*



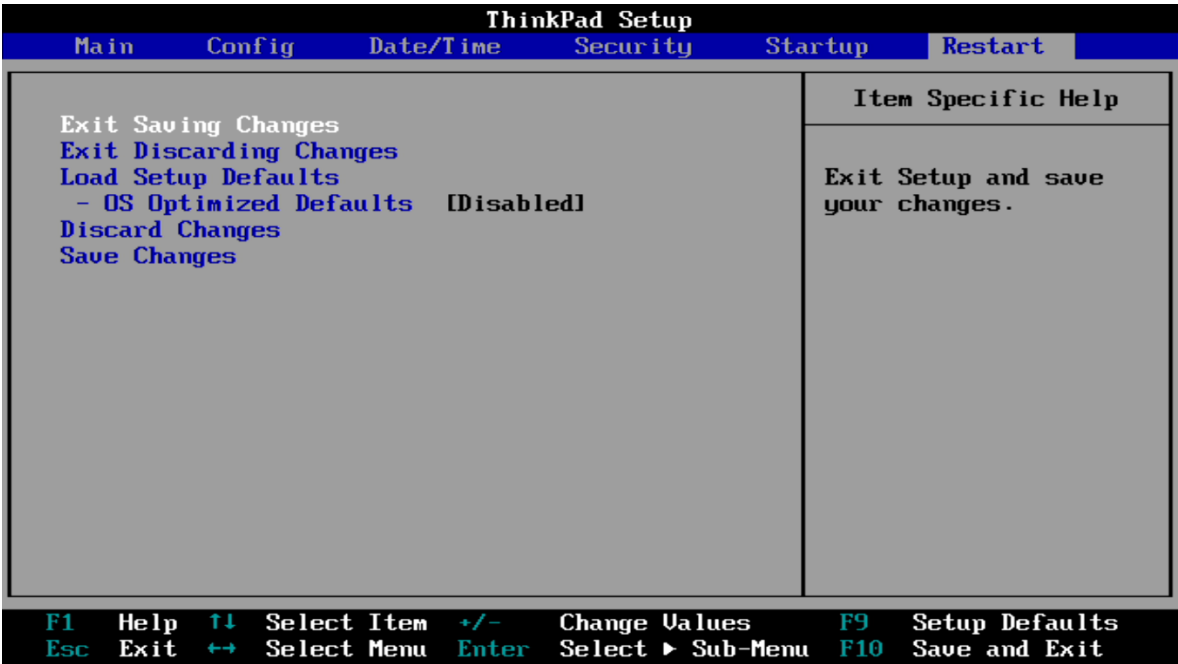
Section 1 – BIOS Setup and Pre-Installation Steps

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 ‘Restart’ menu tab, and set “OS Optimized Defaults” to “Disabled”.



- Tab over to the “Startup” menu tab and make sure the following parameters are set accordingly.

*****Note:** Pressing F9 will allow “UEFI/Legacy Boot” to be selectable; otherwise, it will be an unchangeable setting to “UEFI only”.

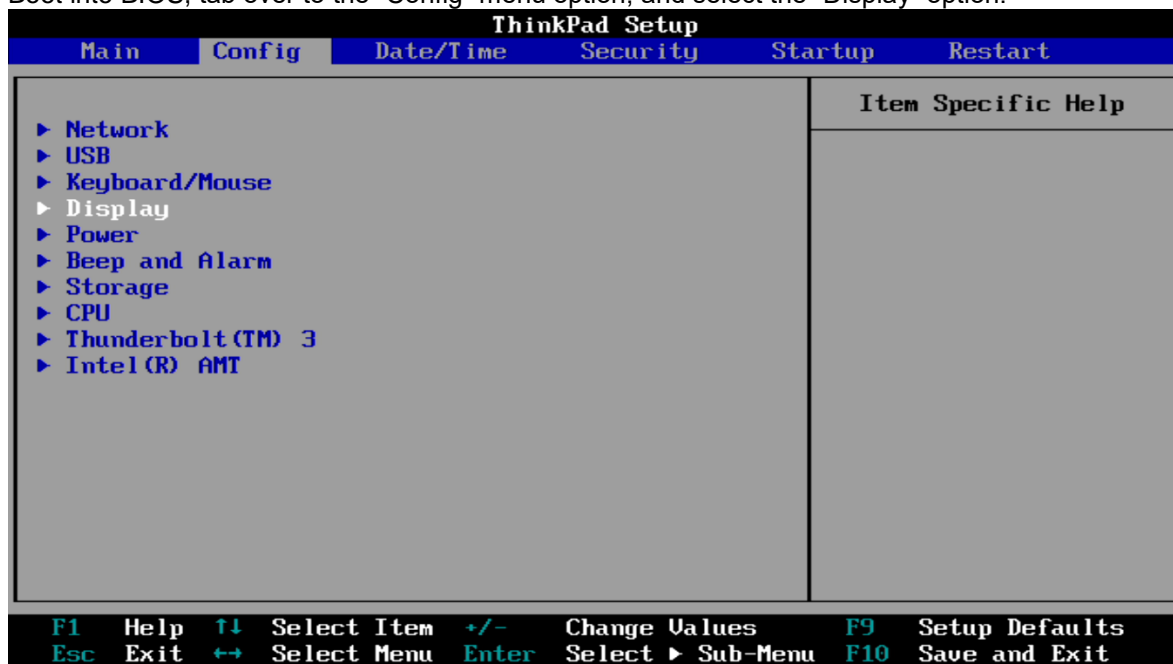
ThinkPad Setup							
Main	Config	Date/Time	Security	Startup	Restart		
▶ Boot Network Boot [PCI LAN] UEFI/Legacy Boot [Both] - UEFI/Legacy Boot Priority [UEFI First] - CSM Support [Yes] Boot Mode [Quick] Option key Display [Enabled] Boot device List F12 Option [Enabled] Boot Order Lock [Disabled]						Item Specific Help	
F1	Help	↑↓	Select Item	+/-	Change Values	F9	Setup Defaults
Esc	Exit	←→	Select Menu	Enter	Select ▶ Sub-Menu	F10	Save and Exit

*****Note:** Pressing F9 after setting “OS Optimized Defaults” to “Disabled” will also disable “Secure Boot” under the “Security” menu tab -> “Secure Boot” menu.

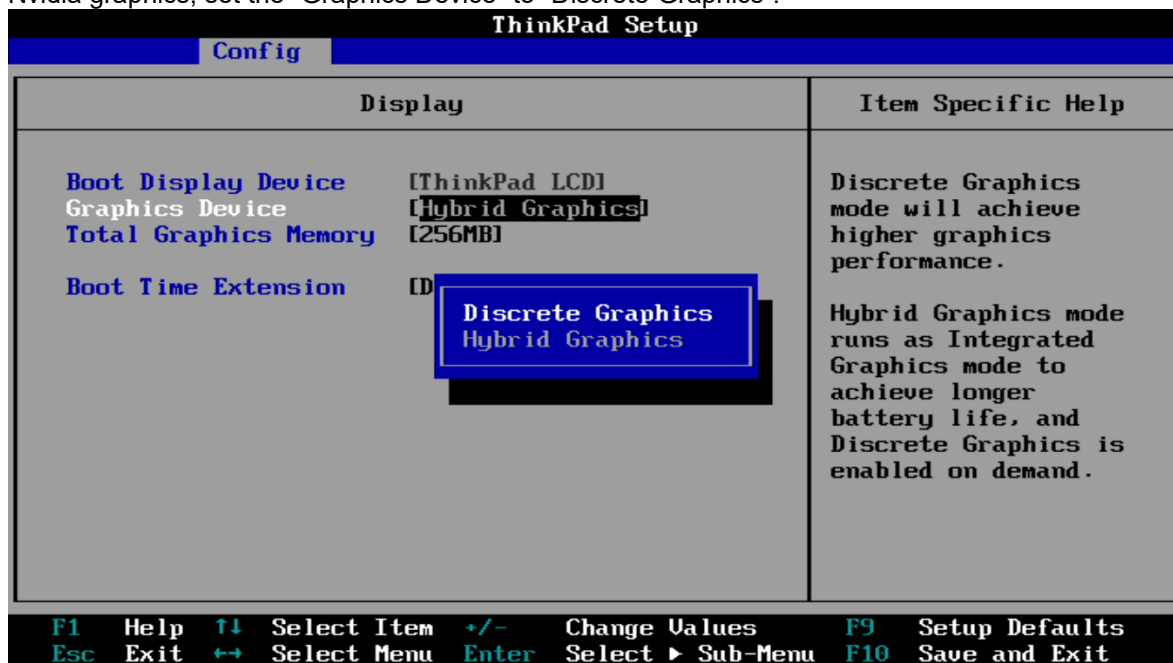
Section 2 – Discrete vs Hybrid Graphics

The Thinkpad P1 offers both Nvidia and Intel graphics. To run exclusively Nvidia graphics, use the discrete graphics mode.

- Boot into BIOS, tab over to the “Config” menu option, and select the “Display” option.



- By default, the “Graphics Device” is likely set to “Hybrid Graphics”. To run exclusively Nvidia graphics, set the “Graphics Device” to “Discrete Graphics”.



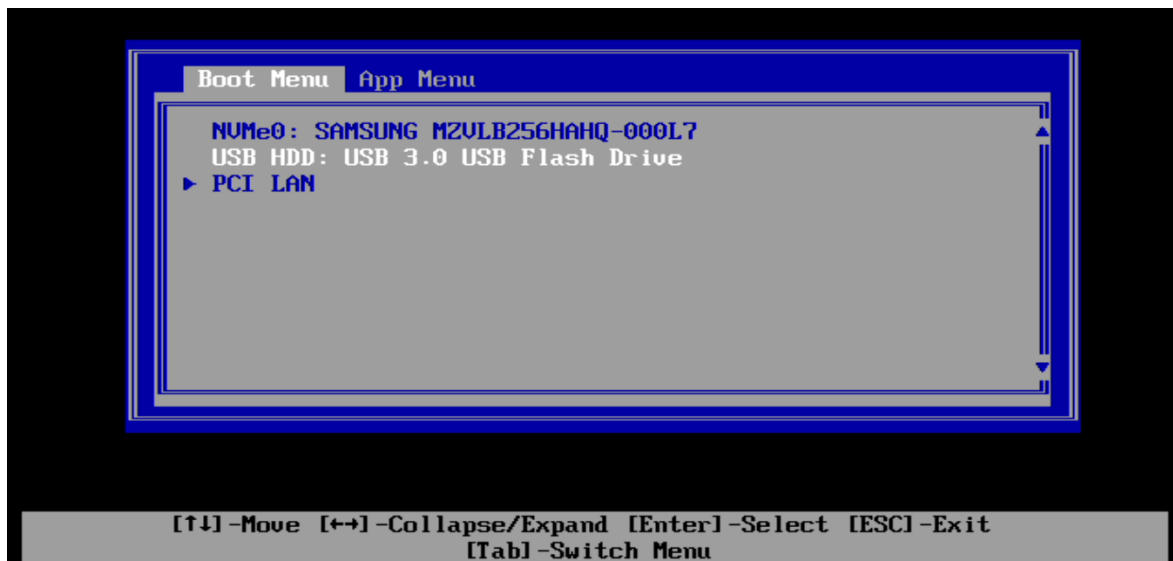
Section 3 – Installing Red Hat Enterprise Linux 7

Please refer to the following instructions and screenshots on how to install RHEL 7 on the Lenovo Thinkpad P1.

- Insert the RHEL 7 installation media (either through USB or CD/DVD).
- Power on the system and press the F12 function key whenever the following Lenovo splash screen appears:



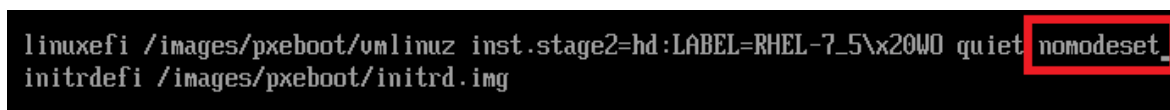
- Select the Linux bootable installation media from the F12 boot menu list.



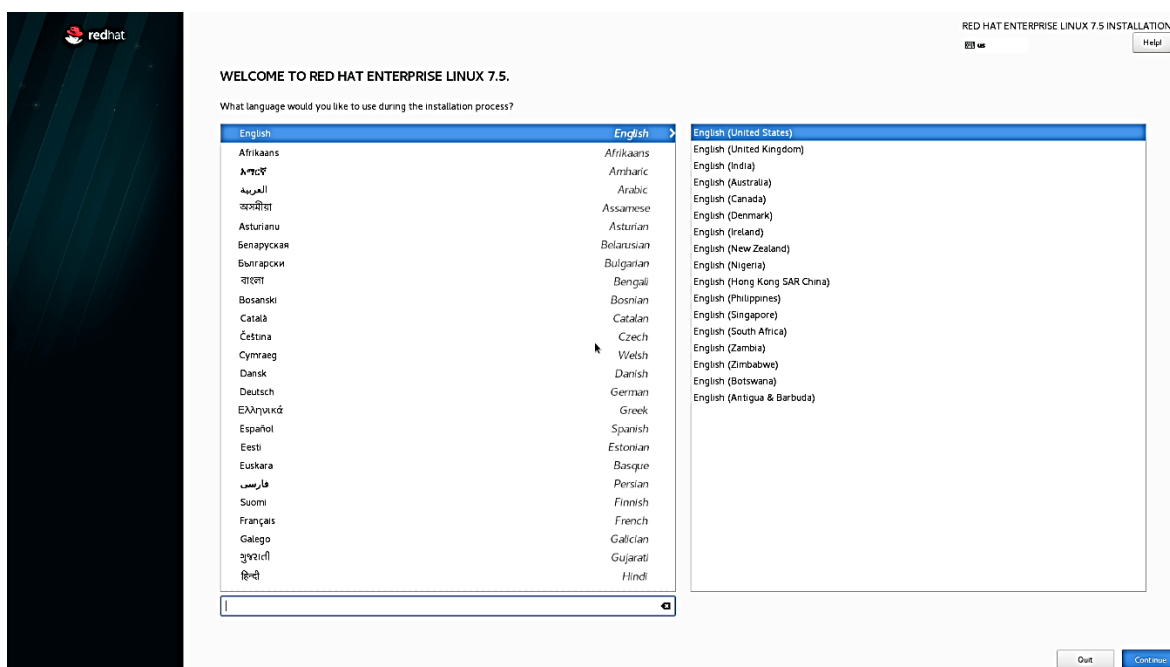
- Highlight “Install Red Hat Enterprise Linux 7.x” from the GRUB boot menu and press ‘e’.



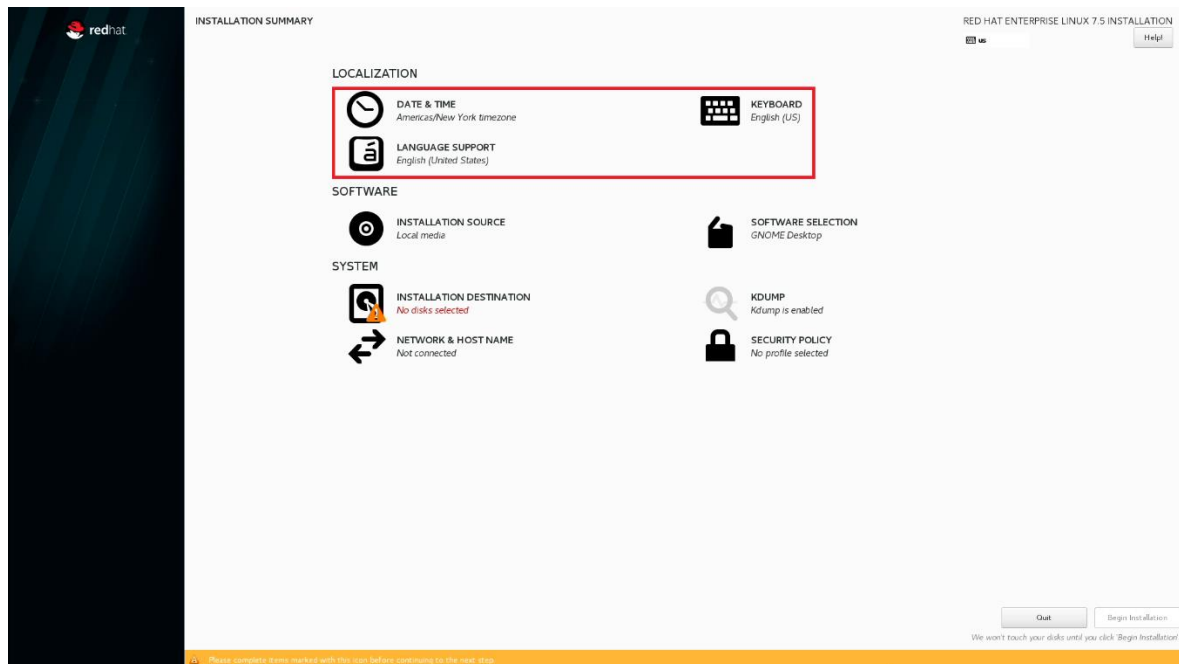
- Add the following line, “nomodeset”, to the end of the boot kernel parameter.



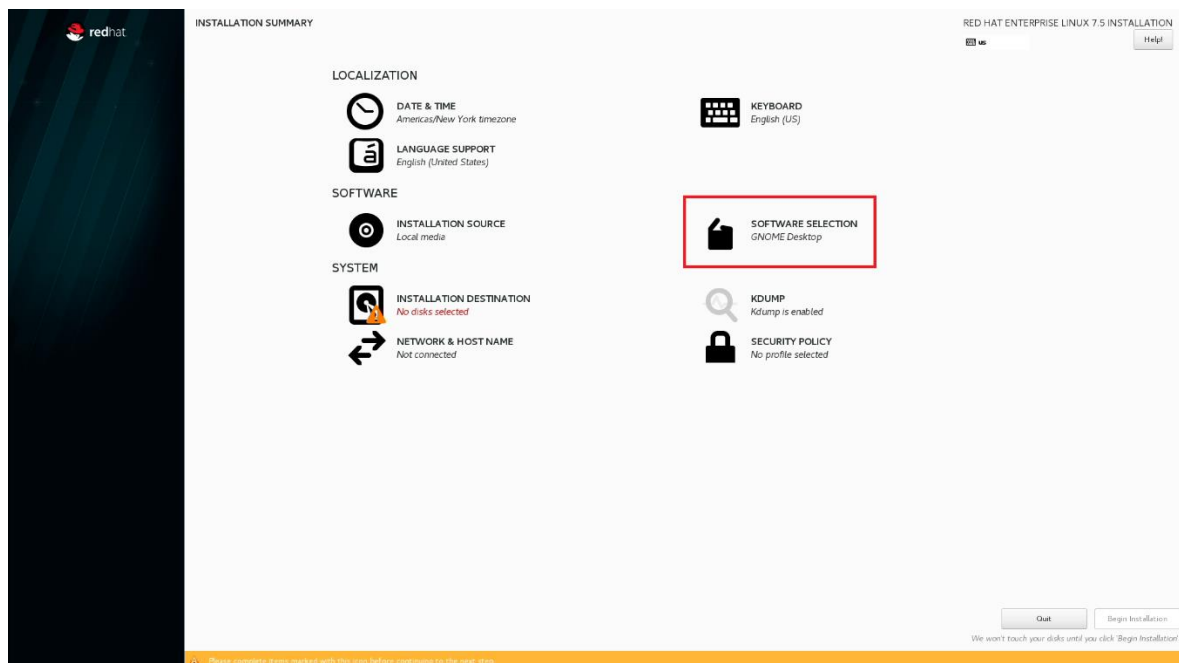
- The Red Hat Enterprise Linux Welcome Screen should appear. Select the appropriate language and “Continue”.



- Adjust the “Date & Time”, “Keyboard”, and “Language Support” accordingly by selecting each one.



- Select “SOFTWARE SELECTION” and choose the type of software to install.



- Select the type of “Base Environment” as well as each “Add-Ons” to install. In this example, “Development and Creative Workstation” was selected for the “Base Environment” and all “Add-Ons” were selected.

SOFTWARE SELECTION

RED HAT ENTERPRISE LINUX 7.5 INSTALLATION

us

Help

Base Environment

☐ **GNOME Desktop**
GNOME is a highly intuitive and user friendly desktop environment.
 ☐ **KDE Plasma Workspaces**
The KDE Plasma Workspaces, a highly-configurable graphical user interface which includes a panel, desktop, system icons and desktop widgets, and many powerful KDE applications.
 ☒ **Development and Creative Workstation**
Workstation for software, hardware, graphics, or content development.

Add-Ons for Selected Environment

☒ **Additional Development**
Additional development headers and libraries for building open-source applications.
 ☒ **Backup Client**
Client tools for connecting to a backup server and doing backups.
 ☒ **Compatibility Libraries**
Compatibility libraries for applications built on previous versions of Red Hat Enterprise Linux.
 ☒ **DNS Name Server**
This package group allows you to run a DNS name server (BIND) on the system.
 ☒ **Development Tools**
A basic development environment.
 ☒ **Email Server**
Allows the system to act as a SMTP and/or IMAP e-mail server.
 ☒ **Emacs**
The GNU Emacs extensible, customizable, text editor.
 ☒ **FTP Server**
Allows the system to act as an FTP server.
 ☒ **File and Storage Server**
CIFS, SMB, NFS, iSCSI, iSER, and GNS network storage server.
 ☒ **Graphics Creation Tools**
Software for creation and manipulation of still images.
 ☒ **Hardware Monitoring Utilities**
A set of tools to monitor server hardware.
 ☒ **Identity Management Server**
Centralized management of users, servers and authentication policies.
 ☒ **InfiniBand Support**
Software designed for supporting clustering and grid connectivity using RDMA-based InfiniBand and IWARP fabrics.
 ☒ **KDE**
The KDE Plasma Workspaces, a highly-configurable graphical user interface which includes a panel, desktop, system icons and desktop widgets, and many powerful KDE applications.
 ☒ **Large Systems Performance**
Performance support tools for large systems.
 ☒ **Legacy X Window System Compatibility**
Compatibility programs for migration from or working with legacy X Window System environments.
 ☒ **Load Balancer**
Load balancing support for network traffic.
 ☒ **Mainframe Access**
Tools for accessing mainframe computing resources.
 ☒ **MySQL Database Server**
The MySQL SQL database server, and associated packages.
 ☒ **Network File System Client**
Enables the system to attach to network storage.
 ☒ **Office Suite and Productivity**
A full-purpose office suite, and other productivity tools.
 ☒ **PHP Support**
PHP web application framework.
 ☒ **Perl for Web**
Basic Perl web application support.
 ☒ **Platform Development**

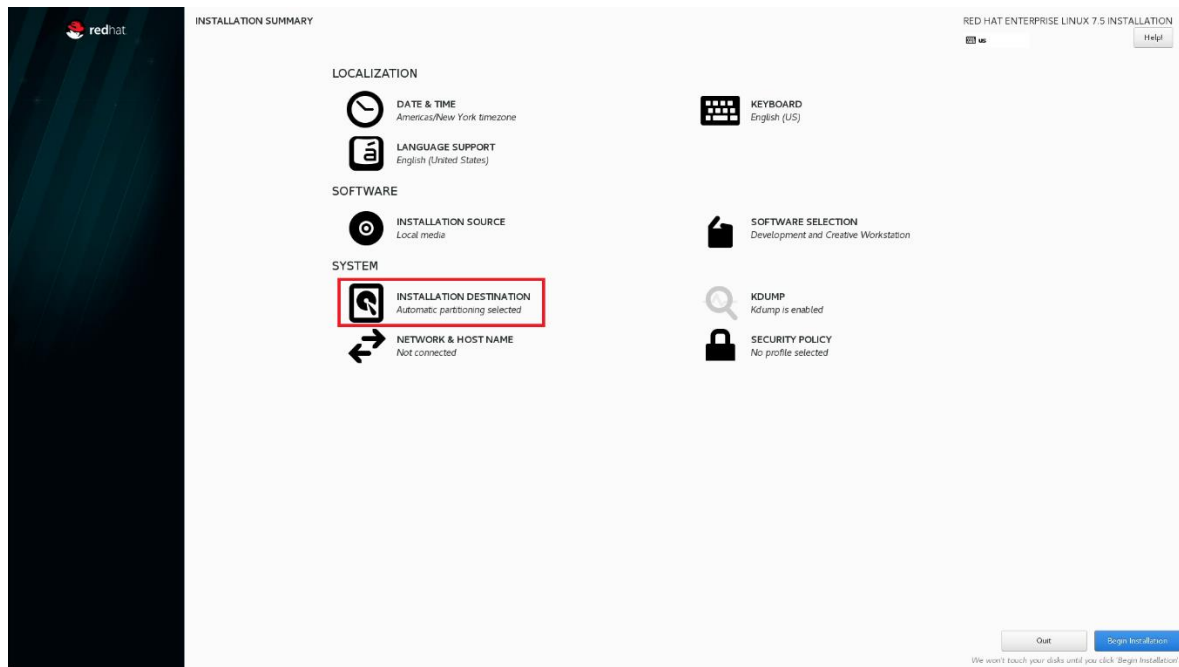
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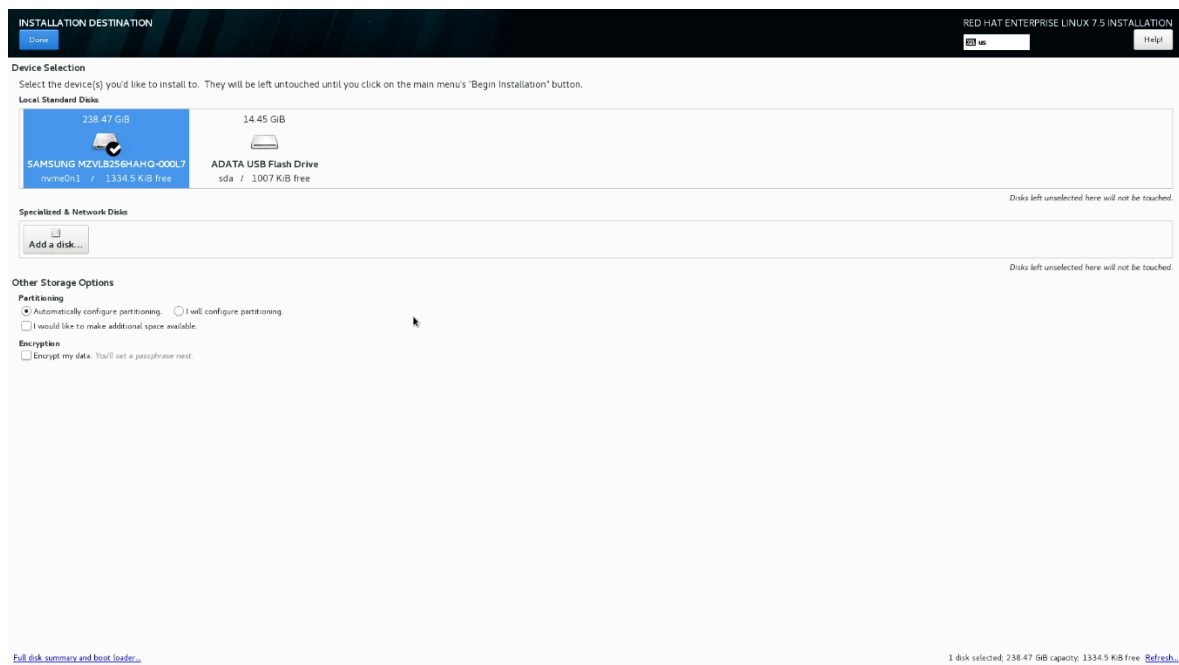
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The MariaDB SQL database server, and associated packages.
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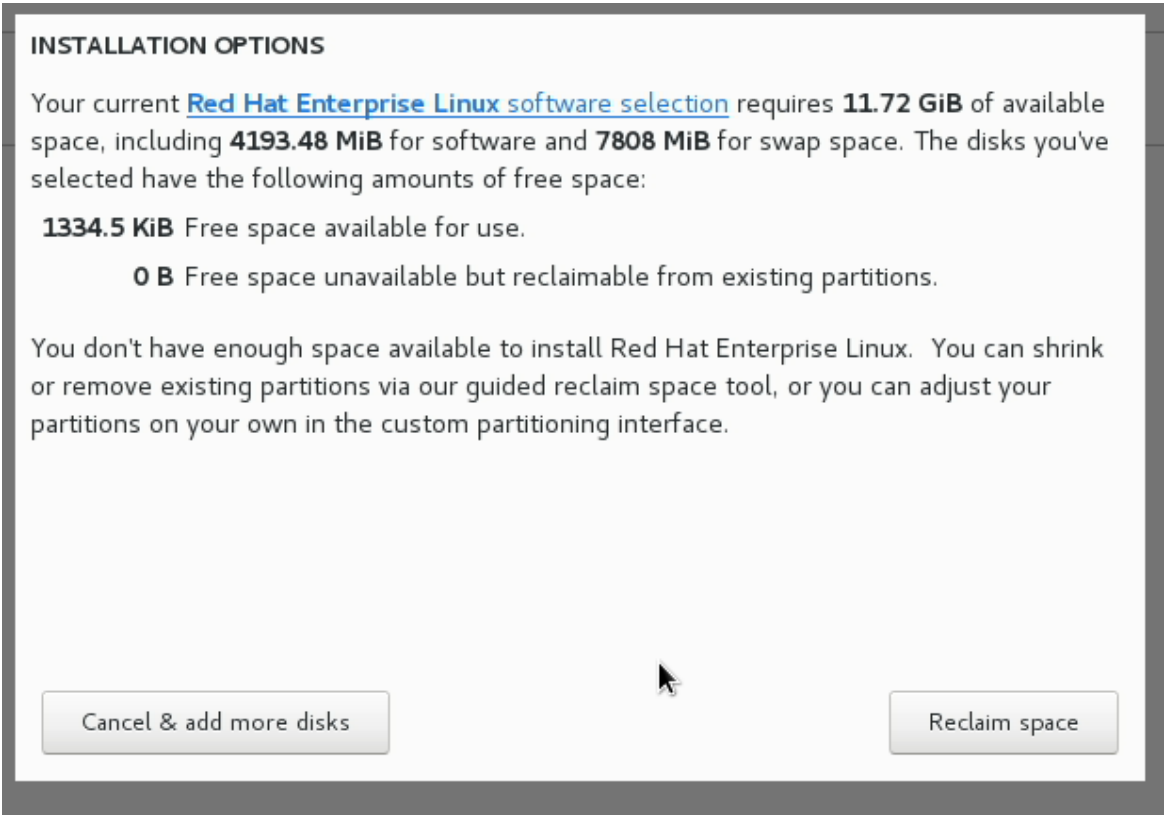
- Select the “INSTALLATION DESTINATION”.



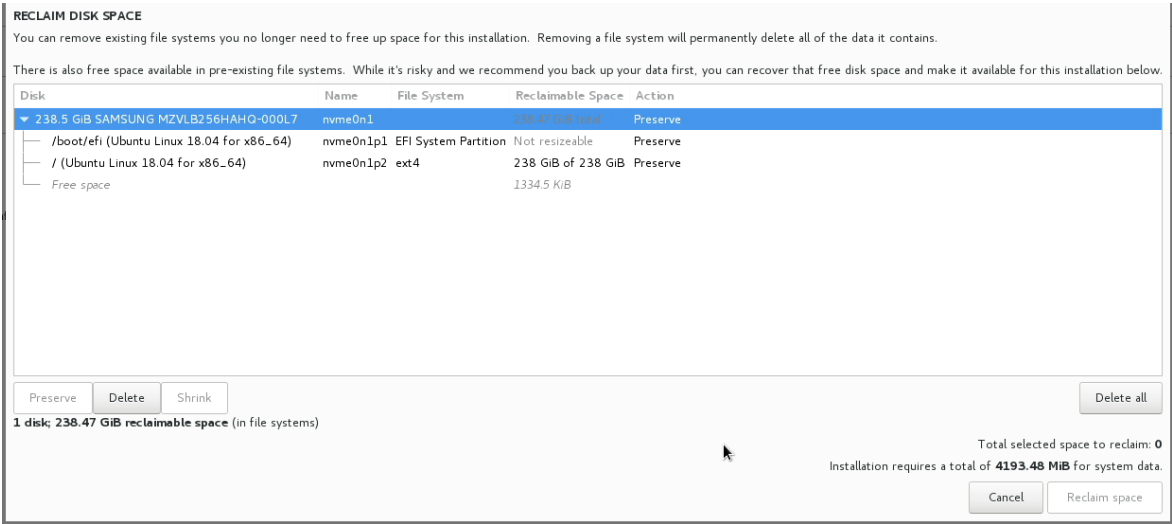
- Select the device on where to install the operating system and “Done” in the upper left.



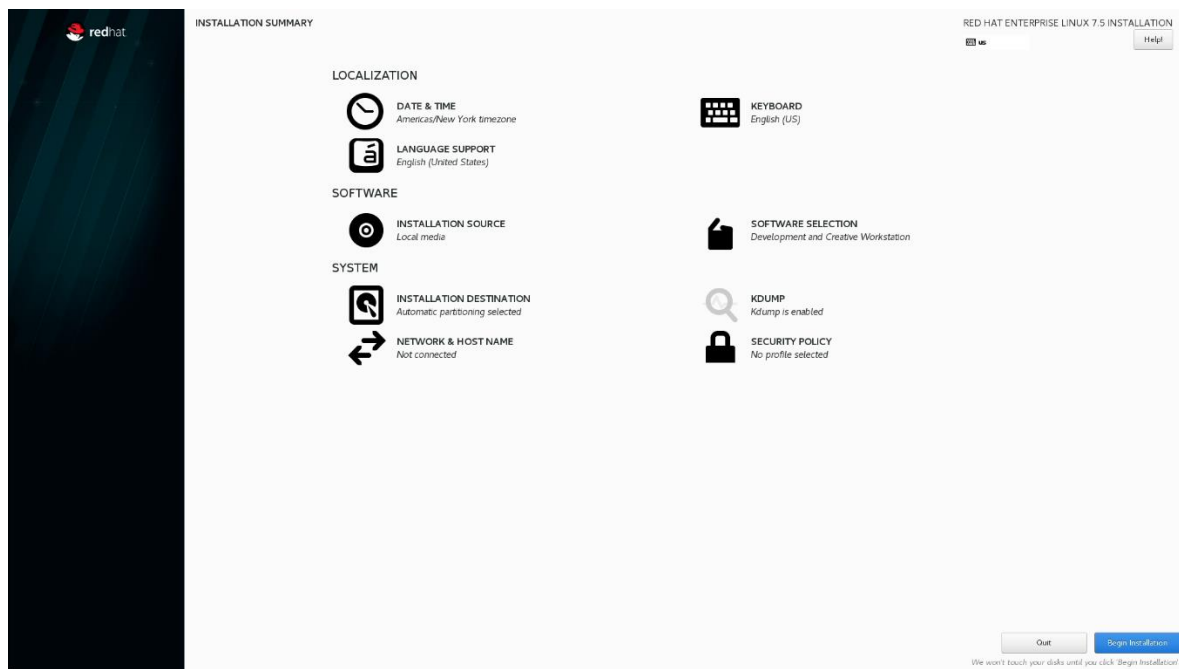
- For storage devices with previous partitions created, select “Reclaim space”.



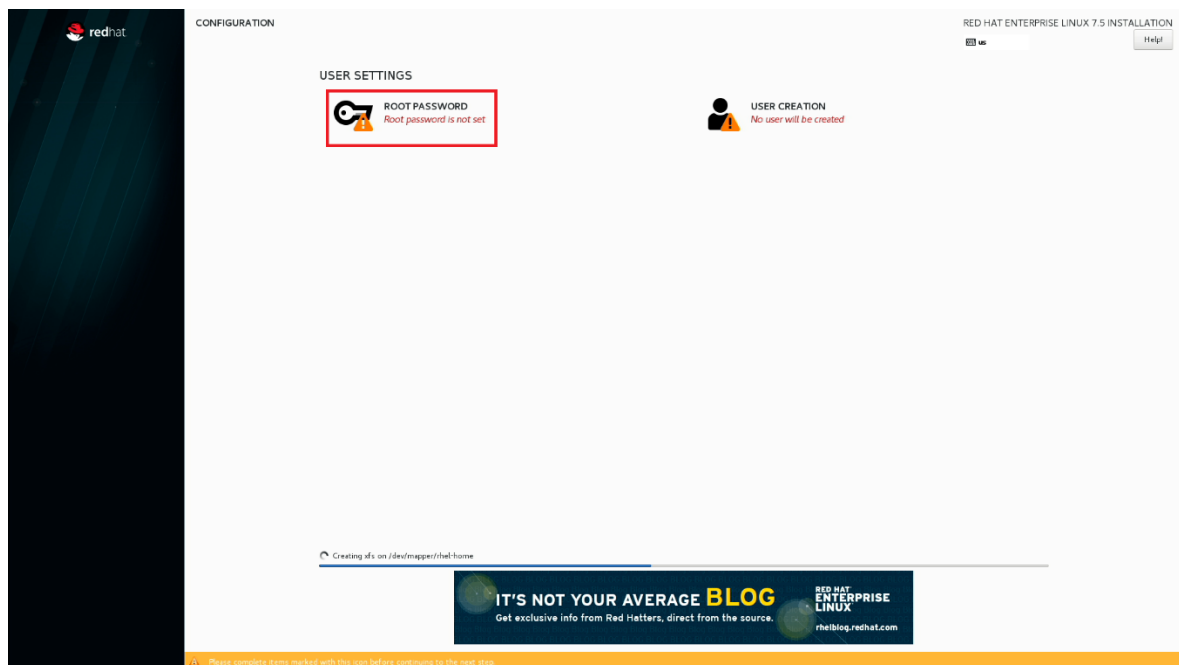
- Select “Delete all” to delete all the previously created partitions or select each partition to delete and select the “Delete” option. When done, select “Reclaim space” at the bottom.



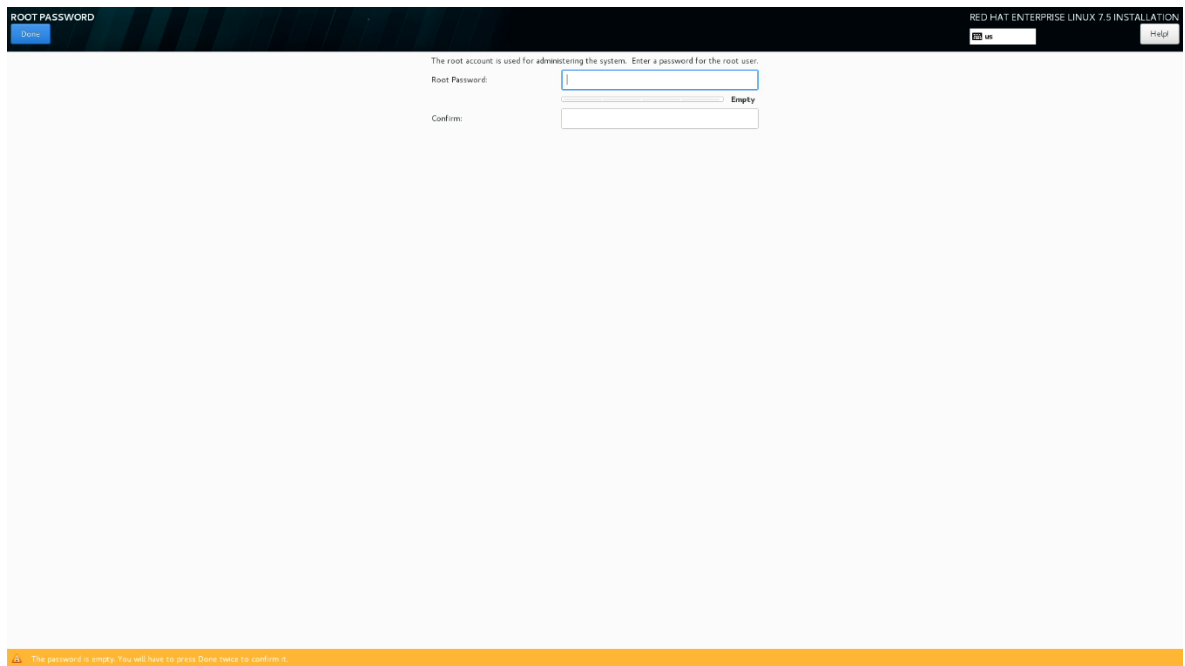
- Select “Begin Installation” in the bottom right.



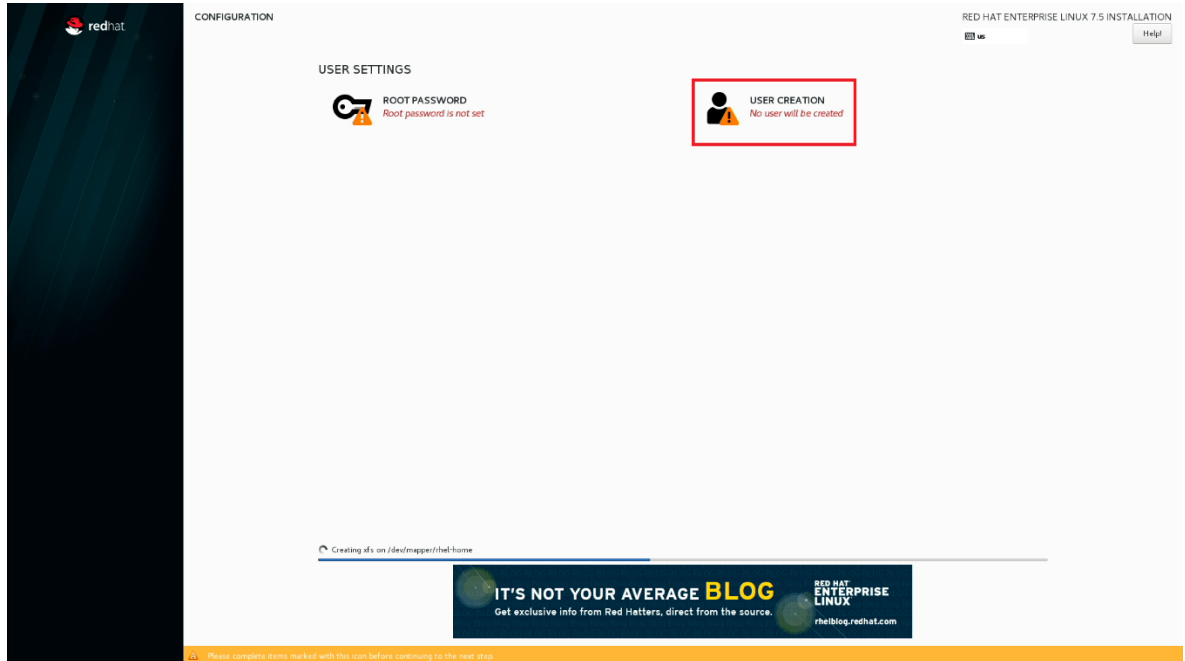
- Select “ROOT PASSWORD”.



- Enter a root password in both of the boxes below and select “Done” in the upper left.



- Select “USER CREATION”.



- Fill in the appropriate boxes below and select “Done” in the upper left.

CREATE USER Done RED HAT ENTERPRISE LINUX 7.5 INSTALLATION us Help

Full name

User name

Tip: Keep your user name shorter than 32 characters and do not use spaces.

☐ Make this user administrator

☒ Require a password to use this account

Password

Confirm password

[Advanced...](#)

The password is empty

- Once the installation completes, select “Reboot” at the bottom right.

CONFIGURATION RED HAT ENTERPRISE LINUX 7.5 INSTALLATION us Help

USER SETTINGS

ROOT PASSWORD
Root password is set

USER CREATION
Administrator lenovo will be created

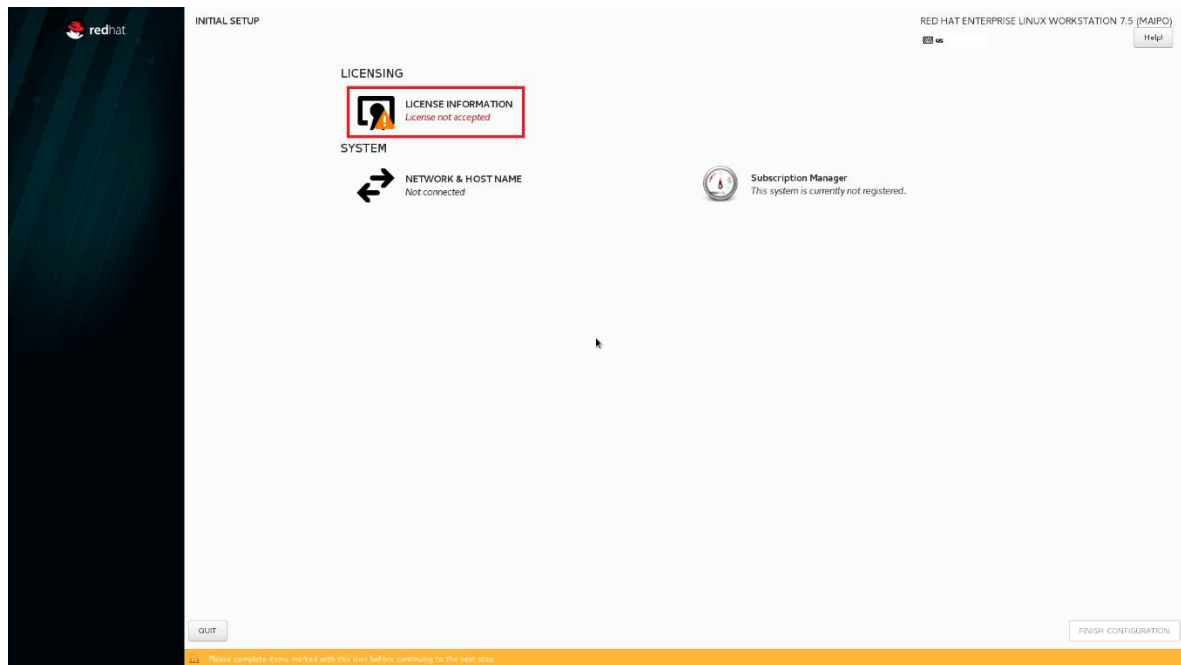
Complete!

Red Hat Enterprise Linux is now successfully installed and ready for you to use.
Go ahead and reboot to start using it.

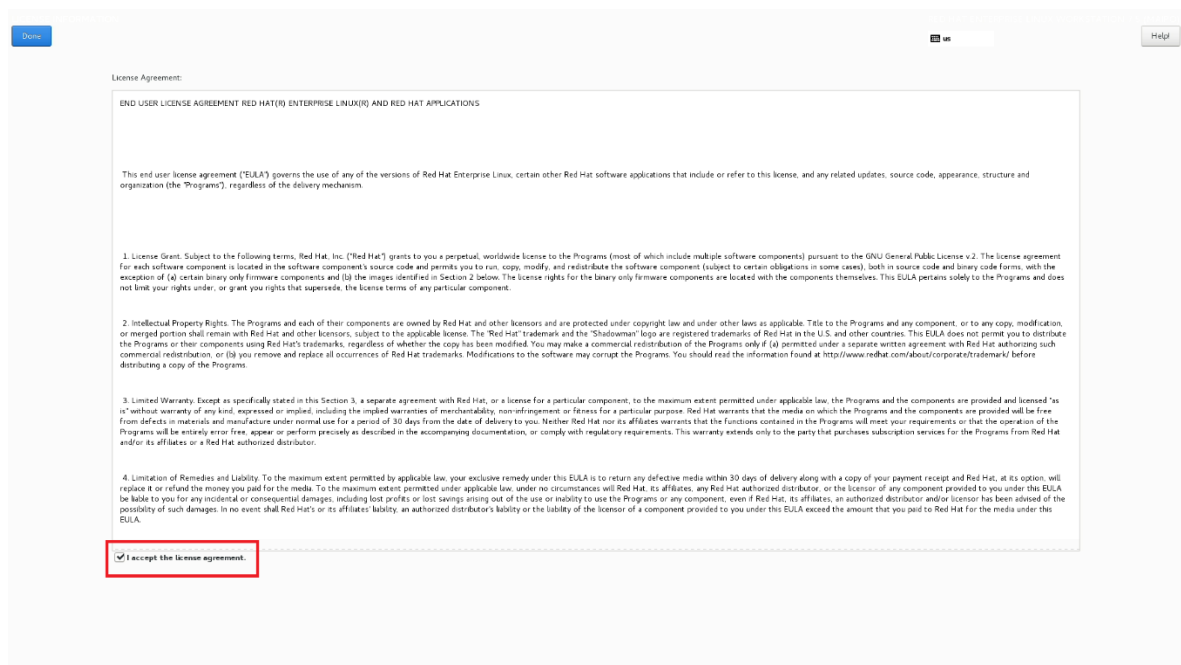
Reboot

Use of this product is subject to the license agreement found at [https://www.redhat.com/en/policies/sla](#)

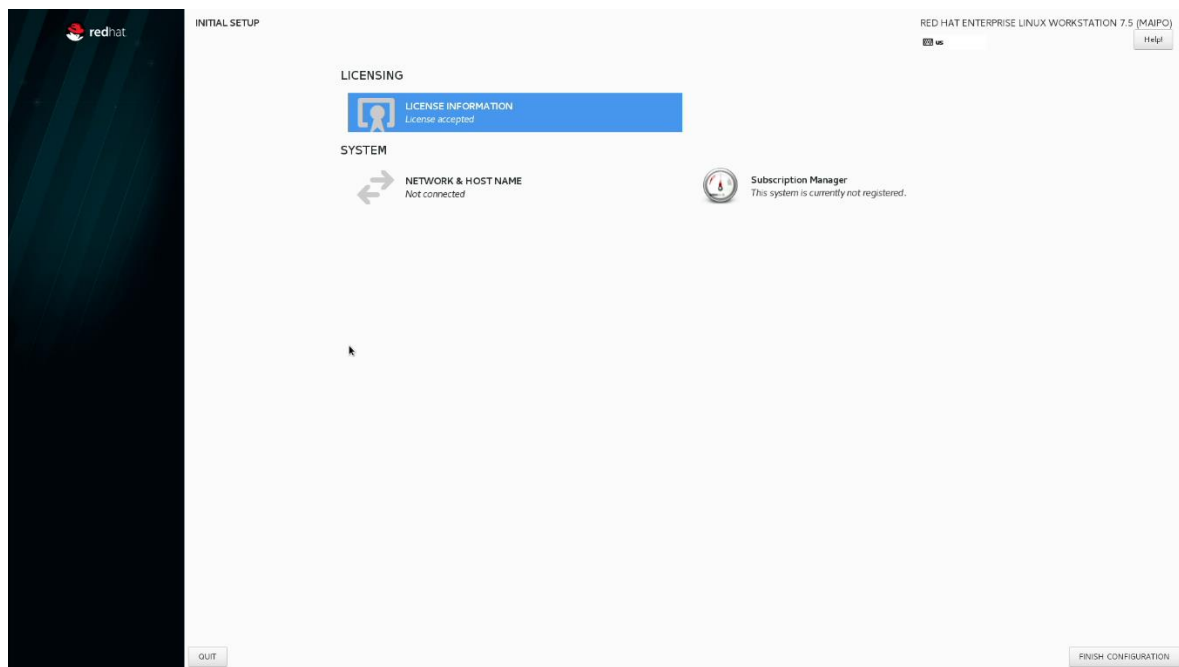
- Select “LICENSE INFORMATION”.



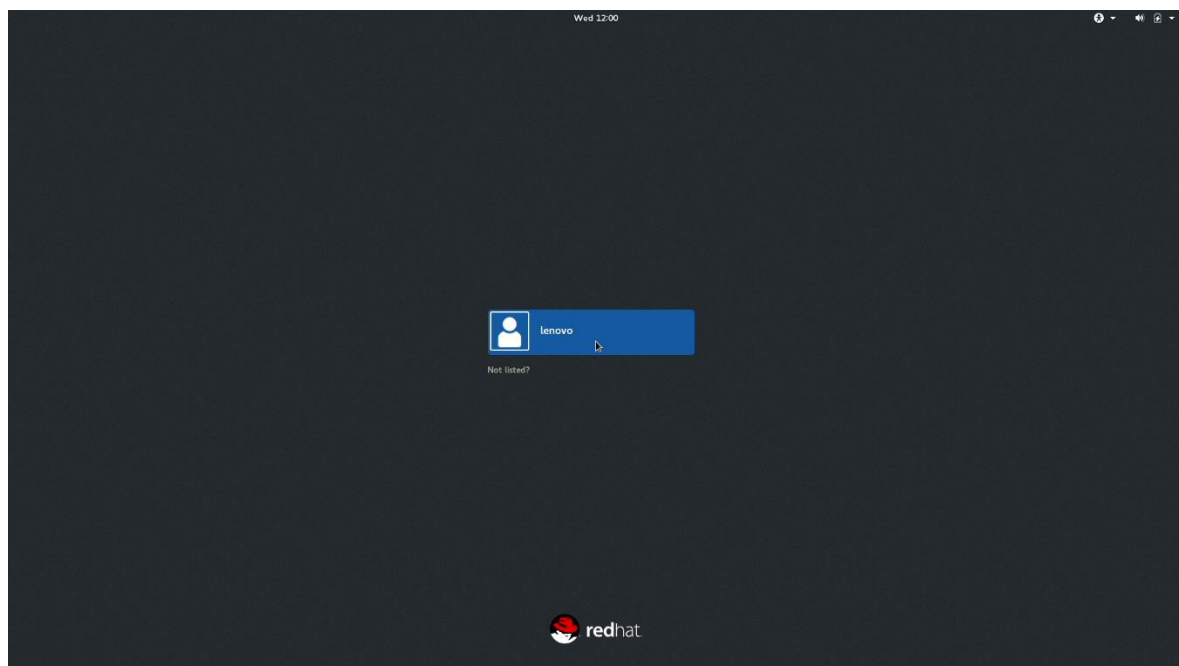
- Check the box at the bottom left and “Done” at the upper left.



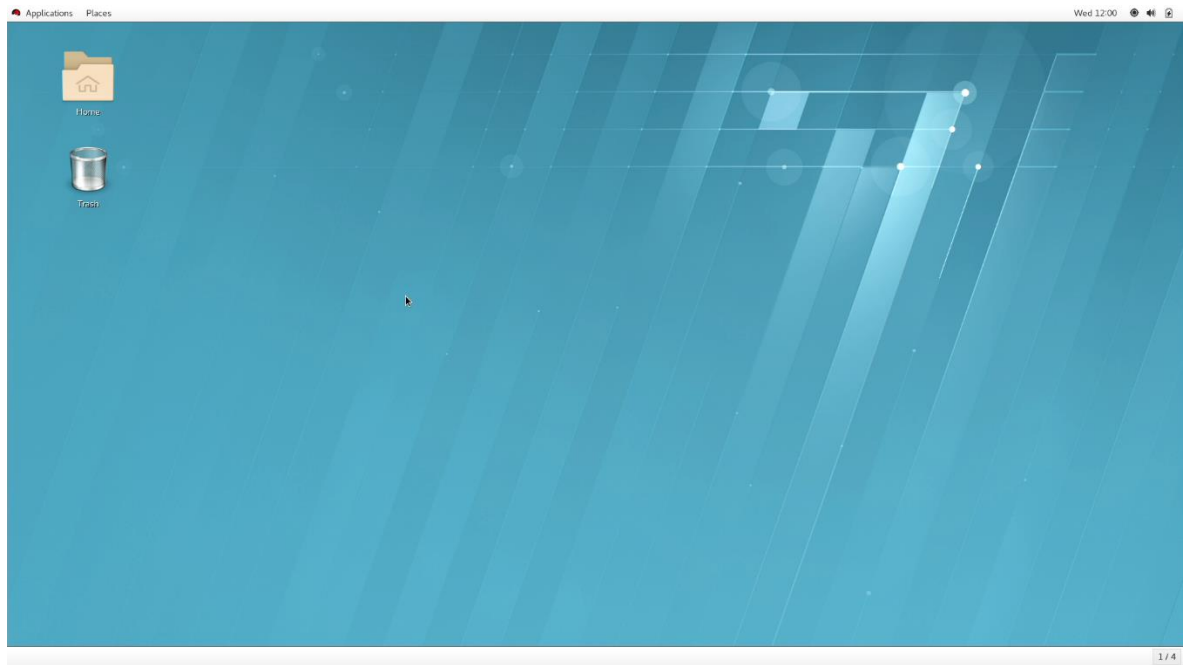
- Select “FINISH CONFIGURATION” at the bottom left.



- Log in to the Linux Desktop using the login credentials created above.



- Red Hat Enterprise Linux 7.x Desktop screen.



Section 4 – Installing the Nvidia Graphics Driver

The proprietary Nvidia driver will not work properly on Pascal-based GPU's within Linux; therefore, use the native Linux Nouveau driver.