OS Installation Guide
Red Hat Linux 9.0

SkyPilot Network™

Contents

About This Guide

This guide provides directions for installing the Red Hat Linux 9.0 operating system on the server you'll use to configure and manage network devices on your SkyPilot wireless network.

Complete SkyPilot documentation is provided on the *SkyPilot Network Software* CD provided with your equipment.

This guide assumes administrator-level knowledge of IP networks and a familiarity with wireless networking.

Chapter 1, "Preparing for Installation" lists the server requirements for installation.

Chapter 2, "Installing Red Hat Linux 9.0," provides detailed instructions for performing a custom installation of the Red Hat Linux operating system.

Appendix A, "Configuring a Firewall for SkyPilot Operations," tells you how to open ports for data traffic from SkyPilot devices if your server is behind a firewall.

Preparing for Installation

If you're setting up a SkyPilot network to use automatic provisioning of devices, you must perform a custom installation of the Red Hat Linux 9.0 operating system. This custom installation prepares your server for the installation of SkyPilot EMS software that will provide unattended configuration of SkyPilot devices from a central server at your network operations center (NOC).

Requirements

Table 1 lists the hardware and software requirements for the server on which you'll install Red Hat Linux 9.0 and, later on, the SkyPilot EMS software.

Table 1. Server requirements

	Minimum	Recommended
CPU	2 GHz Pentium	3 GHz Xenon
Memory (RAM)	512 MB	1 GB
Hard disk space	10 GB	40 GB
Network	10/100 Mbps Ethernet	10/100 Mbps Ethernet

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Installing Red Hat Linux 9.0

To prepare your server for provisioning and managing of devices on a SkyPilot wireless network, you must perform a custom installation (or reinstallation) of the Red Hat Linux 9.0 operating system that will, among other things, exclude software packages or services that will be duplicated by the SkyPilot EMS server software installation: the Apache HTTPD server, MySQL database server, VSFTPD server, and DHCPD server.

NOTE The following installation procedure will reformat your server hard drive, overwriting its contents. If you have important data on the drive, back it up before proceeding.
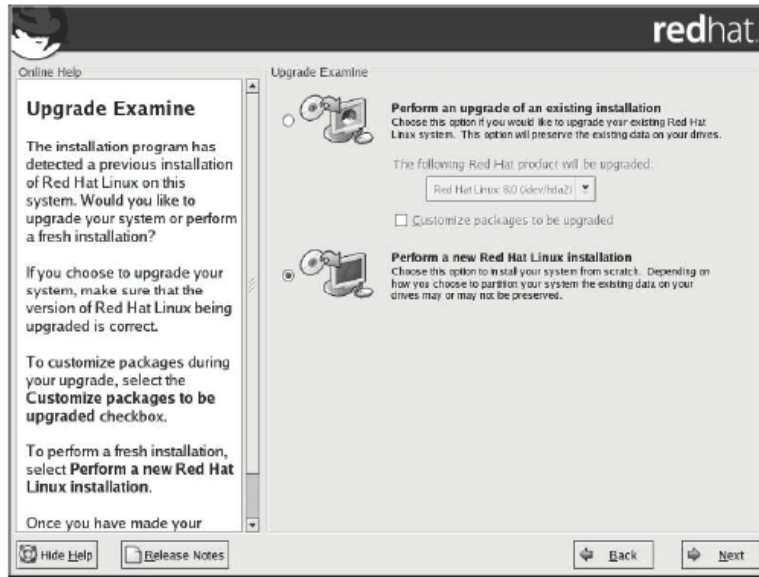
To perform a custom installation of Red Hat Linux 9.0:

1 Insert *Red Hat Linux 9.0 Disk 1* in the CD-ROM drive of the server and reboot.

After the server reboots, the installer's Welcome screen appears.

2 Click *Next* to continue.

3 Follow the prompts to select options on the Language Selection screen and additional configuration screens, until the Upgrade Examine screen appears.
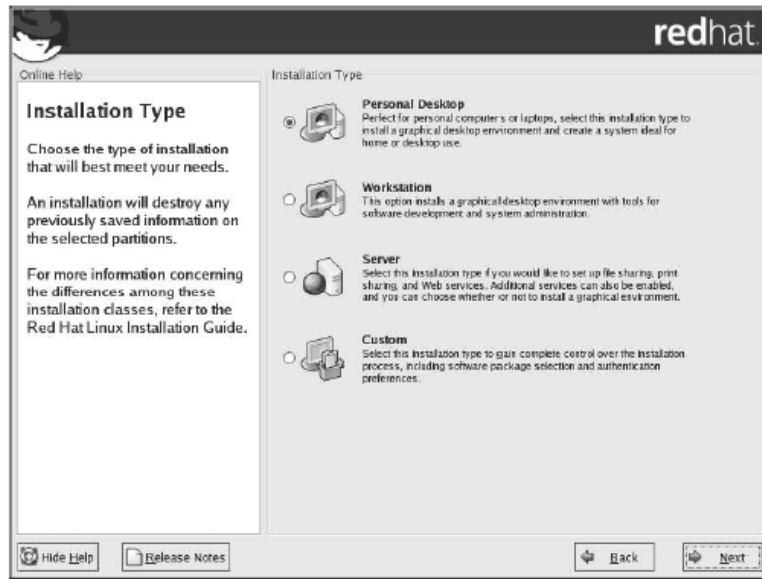
Figure 1. Upgrade Examine screen

4   Select the *Perform a new Red Hat Linux* option and click *Next*.

The Installation Type screen appears, prompting you to select the type of installation: client, workstation, server, or custom.

Figure 2. Installation Type screen

Because you want to exclude or include specific packages and services in the Linux installation, you must choose the *Custom* option.

5   Select the *Custom* option and click *Next*.

The Disk Partitioning Setup screen appears, offering you a choice between automatic partitioning and manual partitioning (with the Disk Druid utility).
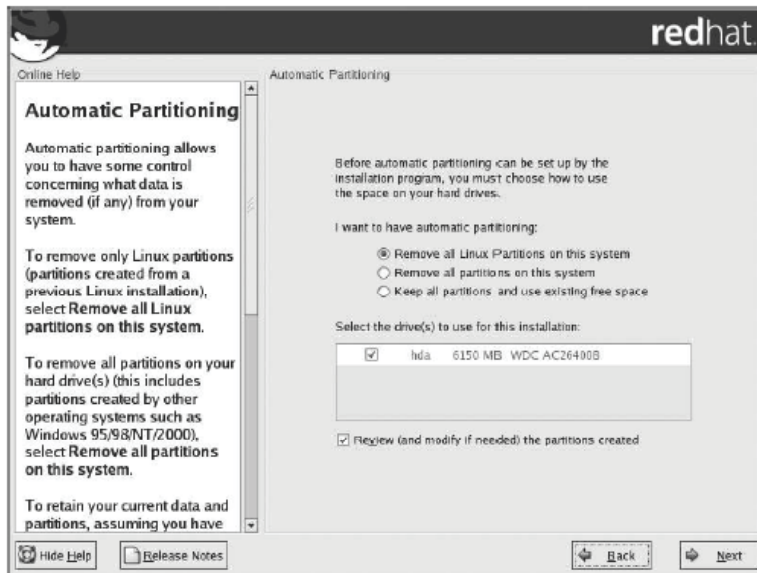
Figure 3. Disk Partitioning Setup screen
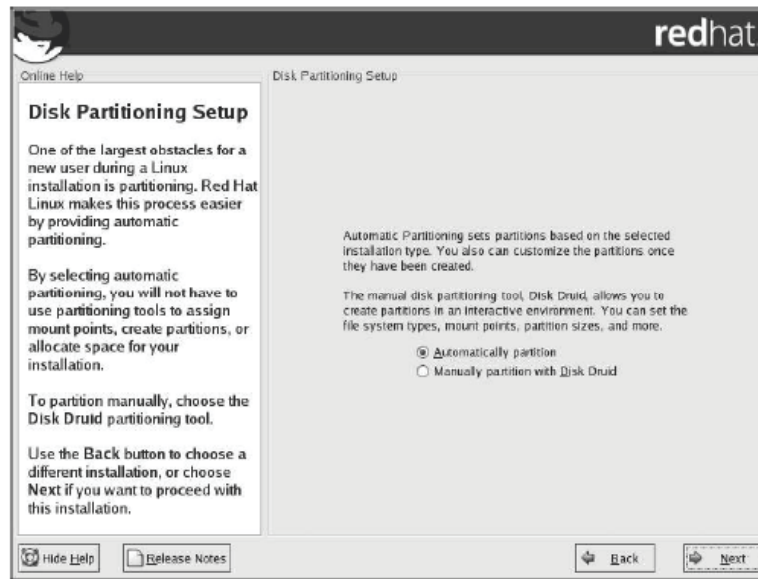
6   Select the *Automatically partition* option and click *Next*.

The Automatic Partitioning screen appears, offering you a choice of partitioning options.

Figure 4. Automatic Partitioning screen

For this installation, you want to remove all partitions from the drive on which you're installing Red Hat Linux.

7 Select the *Remove all partitions on this system* option. If your server uses more than one hard drive, select the disk on which you want Red Hat Linux 9.0 installed. Click *Next* to continue. When the Installer asks you to confirm the removal of all partitions (and all data stored on them), click *Yes*.

The Boot Loader Configuration screen appears, providing options for booting other operating systems.
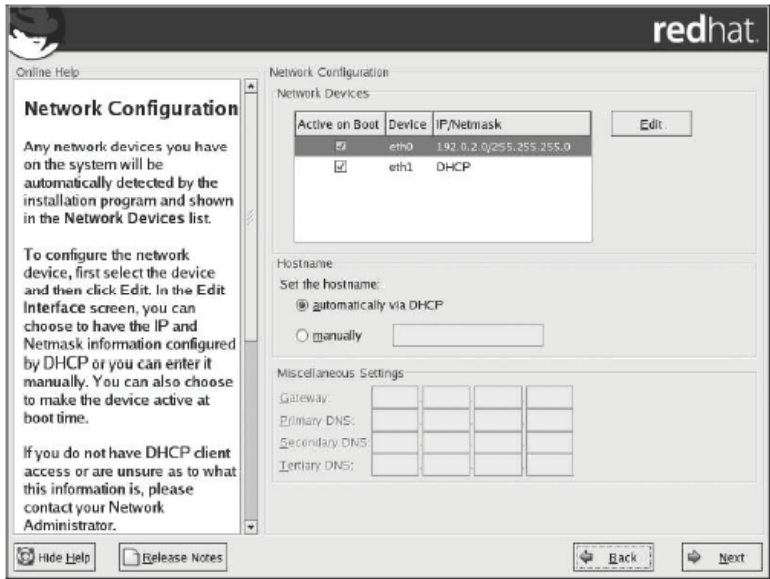
Figure 5. Boot Loader Configuration screen
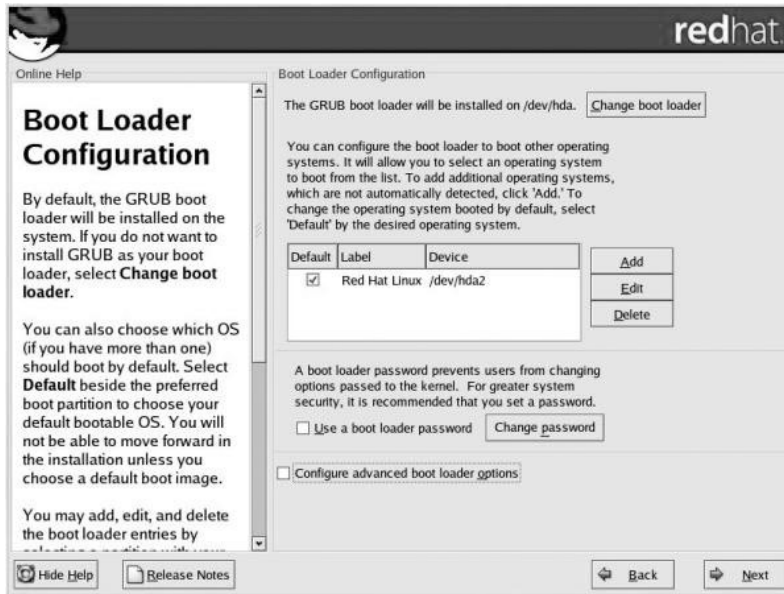
8   Click *Next*.

The Network Configuration screen appears, listing the network devices on your system and providing options for IP addressing and DNS settings. Figure 6 shows an example.

Figure 6. Network Configuration screen

> **NOTE**   Automatic configuration of devices on a SkyPilot network requires a provisioning server with a static IP address.

9   Deselect the option for setting a hostname automatically via DHCP, and then make the appropriate selections and data entries for your network, including a static IP address for the server and a hostname of your choice. For optimal network connectivity, also include gateway and DNS addresses in the *Miscellaneous Settings* area of the screen. Click *Next* to continue.

The Firewall Configuration screen appears.

Figure 7. Firewall Configuration screen
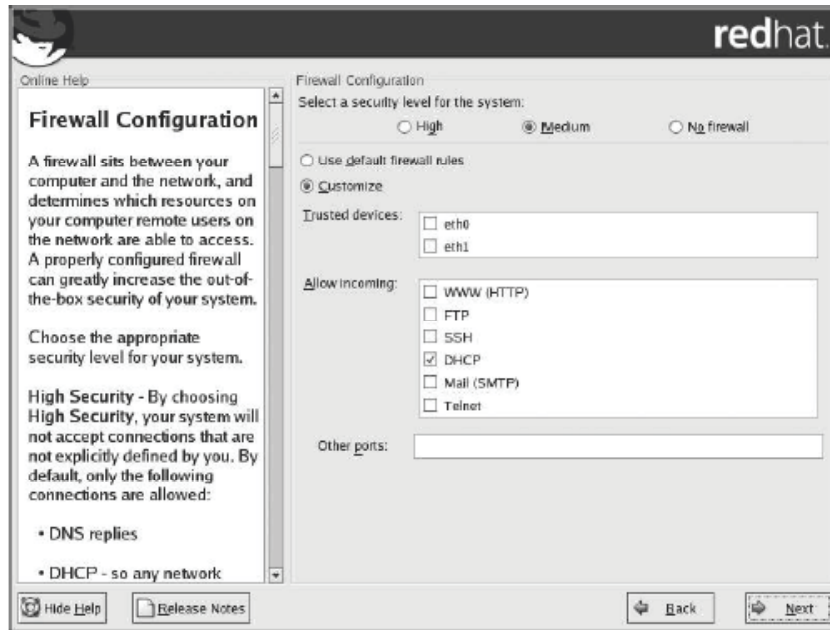
As the default, Red Hat Linux 9.0 uses a medium-level security scheme that includes a firewall. To ensure that the SkyPilot wireless network operates properly, install the operating system *without* firewall protection.

NOTE If security issues demand that you include a firewall, you can still use the provisioning server by configuring the firewall to allow incoming data traffic on the ports used by SkyPilot devices and remote clients; see Appendix A, "Configuring a Firewall for SkyPilot Operations." (In that case, simply click *Next* as your next step.)

10 Select the *No firewall* option and click *Next*.

The Additional Language Support screen appears.

11 Follow the prompts to select additional languages, set a time zone, specify a root password, and configure authentication, until the Package Group Selection screen appears.

Figure 8. Package Group Selection screen
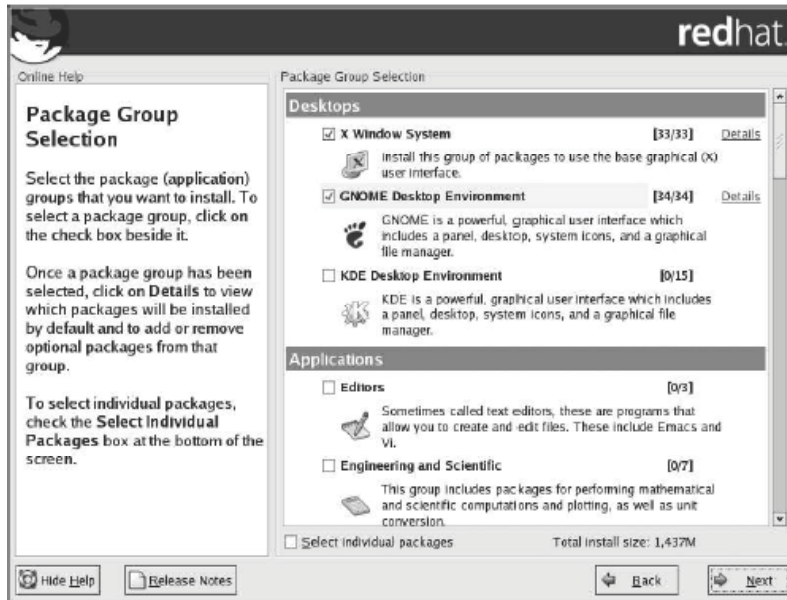
You'll use this screen to choose package groups for exclusion or inclusion.

12 Click checkboxes to select or deselect packages for your SkyPilot software installation (see Table 2). Click *Next* to continue.

Table 2 provides a checklist of Linux packages you *must* select or deselect as indicated for SkyPilot. For packages not listed in this table, you're free to include or exclude each, depending on your requirements.

Table 2. Red Hat Linux 9.0 package options for SkyPilot

Include (box checked)	Exclude (box unchecked)
Desktop packages	*Desktop packages*
☑ X Window System ☑ GNOME *or* KDE	No requirement
Application packages	*Application packages*
☑ Editors ☑ Graphical Internet	No requirement
Server packages	*Server packages (leave unchecked)*
☑ Server Configuration Tool	☐ Web server (Apache) ☐ SQL database server and clients ☐ FTP server ☐ Network servers (including DHCP and Telnet)
Developer packages	*Developer packages*
☑ Development Tools	No requirement
System packages	*System packages*
☑ Administrative Tools ☑ System Tools	No requirement
Miscellaneous packages	*Miscellaneous packages*
No requirement	☐ Everything ☐ Minimal

> **NOTE**   Be careful not to check the *Everything* box at the bottom of the
> package group list. Checking this box automatically includes every
> package option in the installation.

13   When the About to Install screen appears, click *Next* to instruct the
installer to begin copying package files to the server's hard disk.

When package installation is complete, the installer presents the first of a series
of screens on which you choose system options and identify hardware
components.

14   Follow the prompts to make installation selections that correspond to
your system setup.

Finally, the installer prompts you to prepare the system for reboot. Remember to
remove any installation media (diskette in the diskette drive or CD in the CD-
ROM drive) if they haven't been ejected.

15   Click *Reboot* to reboot the server under Red Hat Linux 9.0.

When you boot Red Hat Linux 9.0 for the first time, the system prompts you for
additional information, including a user profile and the type of display.

What's next?

With your server running a customized version of Red Hat Linux 9.0, you can now
install the SkyPilot EMS software that you use to provision and manage SkyPilot
devices.

For instructions on installing the EMS software, see *Installing SkyPilot EMS Software*,
provided on the *SkyPilot Network Software* CD.

Configuring a Firewall for SkyPilot Operations

For optimal SkyPilot operations, you should install Red Hat Linux 9.0 without a firewall. However, if security concerns or other issues force you to use a firewall, you must configure the firewall to allow incoming data traffic on ports that SkyPilot clients and devices use for server communications (see Table 3).

NOTE Each port you open reduces the overall security provided by the firewall.

Table 3. Ports to open when using automatic provisioning with a firewall

To do this:	Open these ports:
Allow EMS clients to connect to the EMS server	1098 (JBoss RMI port) 1099 (JBoss RMI port) 4444 (JBoss RMI object port) 3306 (MySQL DB port)
Allow SkyProvision to configure SkyPilot devices outside the firewall	8000 (HTTP port) 21&22 (FTP port) 67 (DHCP server)
Allow SkyControl to monitor SkyPilot devices outside the firewall	61 (SNMP Read) 161 (SNMP Traps)