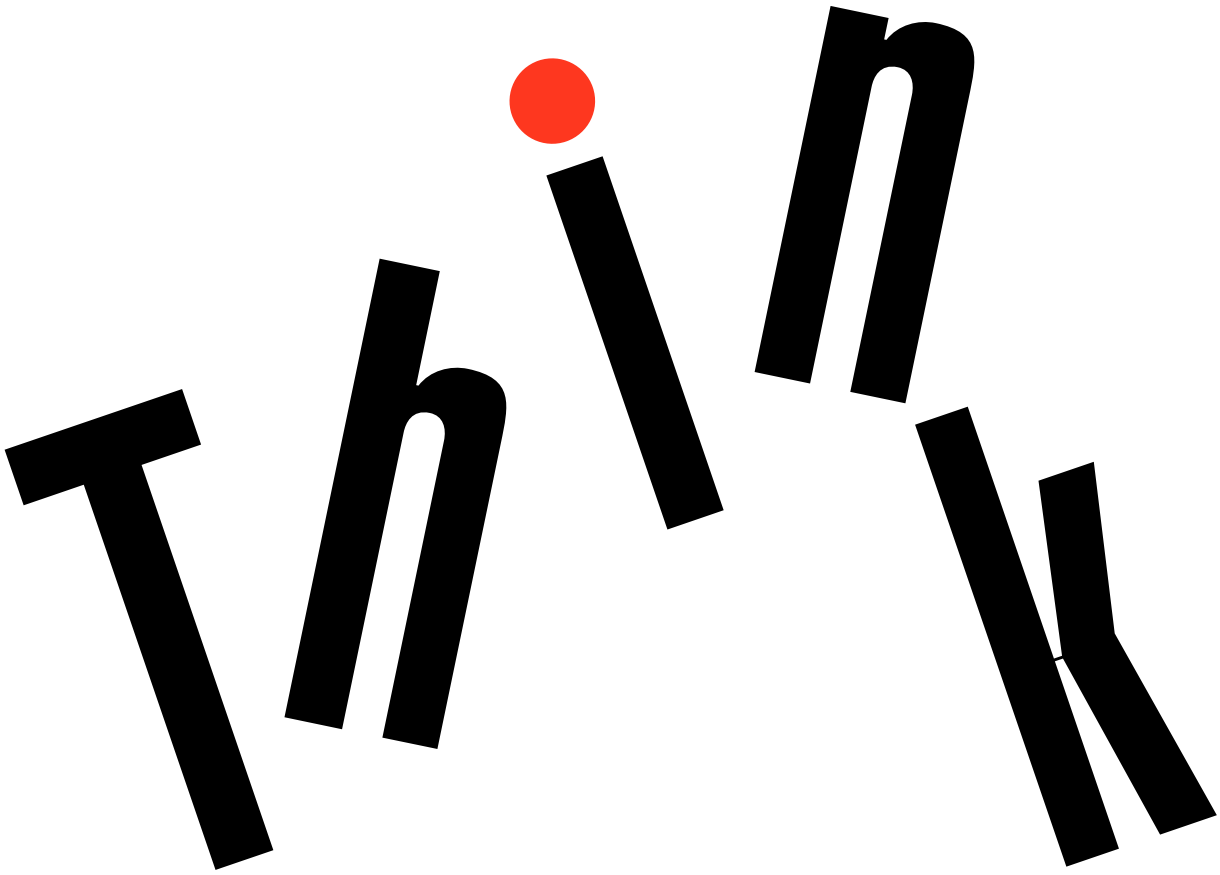
Lenovo

ThinkServer®

ThinkServer RS140
Operating System Installation Guide



Note: Before using this information and the product it supports, be sure to read and understand the *Read Me First* and *Safety, Warranty, and Support Information* that came with your product.

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Chapter 1. Introduction

This guide provides instructions on how to install an operating system on the Lenovo® ThinkServer® RS140 servers.

The supported operating systems vary by the configuration on your server. The following table provides a list on the supported operating system of your server.

Supported operating systems	AHCI	SATA RAID	Add-On RAID
Microsoft® Windows Server® 2008 R2 Enterprise Edition with Service Pack 1 Microsoft Windows Server 2008 R2 Foundation Edition with Service Pack 1 Microsoft Windows Server 2008 R2 Standard Edition with Service Pack 1	Yes	Yes	Yes
Microsoft Windows® Small Business Server 2011 Essentials	Yes	Yes	Yes
Microsoft Windows Small Business Server 2011 Standard Edition	Yes	Yes	Yes
Microsoft Windows Small Business Server 2011 Premium Add-on	Yes	Yes	Yes
Microsoft Windows Server 2012 Datacenter Edition Microsoft Windows Server 2012 Foundation Edition Microsoft Windows Server 2012 Standard Edition	Yes	Yes	Yes
Microsoft Windows Server 2012 Essentials	Yes	Yes	Yes
Microsoft Windows Server 2012 R2 Datacenter Edition Microsoft Windows Server 2012 R2 Foundation Edition Microsoft Windows Server 2012 R2 Standard Edition	Yes	Yes	Yes
Microsoft Windows Server 2012 R2 Essentials	Yes	Yes	Yes
Microsoft Windows Server 2016 Datacenter Edition Microsoft Windows Server 2016 Standard Edition	Yes	Yes	Yes
Microsoft Windows Server 2016 Essentials	Yes	Yes	Yes
Microsoft Windows Storage Server 2012 Standard Microsoft Windows Storage Server 2012 R2 Standard	Yes	Yes	Yes
Microsoft Windows Multipoint® Server 2012 Premium Edition Microsoft Windows Multipoint Server 2012 Standard Edition	Yes	Yes	Yes
Microsoft Windows 7 Ultimate SP1	Yes	Yes	Yes
Microsoft Windows 7 Professional SP1	Yes	Yes	Yes
Microsoft Windows 8	Yes	Yes	Yes
Microsoft Windows 8.1	Yes	Yes	Yes
Hyper-V® Server 2012 R2	Yes	No	Yes

Supported operating systems	AHCI	SATA RAID	Add-On RAID
Hyper-V Server 2016	Yes	No	Yes
SUSE Linux® Enterprise Server 11 with Service Pack 3	Yes	Yes	Yes
SUSE Linux Enterprise Server 11 with Service Pack 4	Yes	Yes	Yes
SUSE Linux Enterprise Server 12.1	Yes	Yes	Yes
SUSE Linux Enterprise Server 12.2	Yes	Yes	Yes
SUSE Linux Enterprise Server 12.3	Yes	Yes	Yes
Red Hat® Enterprise Linux® 5.0	Yes	Yes	Yes
Red Hat® Enterprise Linux 6.5	Yes	Yes	Yes
Red Hat Enterprise Linux 6.7	Yes	Yes	Yes
Red Hat Enterprise Linux 6.8	Yes	Yes	Yes
Red Hat Enterprise Linux 6.9	Yes	Yes	Yes
Red Hat Enterprise Linux AS 7	Yes	Yes	Yes
Red Hat Enterprise Linux 7.1	Yes	Yes	Yes
Red Hat Enterprise Linux 7.2	Yes	Yes	Yes
Red Hat Enterprise Linux 7.3	Yes	Yes	Yes
Red Hat Enterprise Linux 7.4	Yes	Yes	Yes
VMware® ESXi 5.1 Update 1	Yes	No	Yes
VMware ESXi 5.1 Update 2	Yes	No	Yes
VMware ESXi 5.5	Yes	No	Yes
VMware ESXi 5.5 Update 1	Yes	No	Yes
VMware ESXi 5.5 Update 2	Yes	No	Yes
VMware ESXi 5.5 Update 3b	Yes	No	Yes
VMware ESXi 6.0 Update 3	Yes	No	Yes
VMware ESXi 6.5	Yes	No	Yes
VMware ESXi 6.5 Update 1	Yes	No	Yes

Notes:

- Windows 7, Windows 2008 R2, Windows 2008 R2 with Service Pack 1, and Windows SBS 2011 operating system do not support PMC8885e card.
- Windows 7, Windows 2008 R2, and Windows 2008 R2 with Service Pack 1 operating system do not support NVS315.
- Red Hat Enterprise Linux 7 operating system does not support Sunix PCI/PCIe Parallel/Serial card.
- On the Windows 8.1 operating system, the Intel NIC driver upgrade tool 19.1 or later version does not support Ethernet card I350-T2, and I350-T4.

Chapter 2. Before installing an operating system

Before installing an operating system, do the following:

- Copy the driver for onboard SATA software Redundant Array of Independent Disks (RAID) or an installed RAID card from the *ThinkServer® EasyStartup* DVD that comes with your server to a Universal Serial Bus (USB) storage device. You also can download the driver from the Lenovo Web site. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at: http://www.lenovo.com/drivers
- Set the optical drive that you want to use as the first startup device. Depending on the server model, an external optical drive might be required.

  Note: If you want to install an operating system in Unified Extensible Firmware Interface (UEFI) mode, set the UEFI drive as the first startup device.

Chapter 3. Installing an operating system in legacy mode

This chapter provides information about installing operating systems in legacy mode.

Before installing an operating system in legacy mode

Before installing an operating system in legacy mode, do the following:

1. Perform the operations in Chapter 2 “Before installing an operating system” on page 3.
2. Start the Setup Utility program.
3. On the **Boot Manager** menu, select **Miscellaneous Boot Settings** and press Enter.
4. On the **Storage OpROM policy** menu, select **Legacy only**.

Installing a Microsoft Windows 7 operating system

This topic provides instructions on how to install the following operating systems:

- Microsoft Windows 7 Professional Edition (x86 and x64) with Service Pack 1
- Microsoft Windows 7 Ultimate Edition (x86 and x64) with Service Pack 1

To install a Microsoft Windows 7 operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Connect the USB storage device that contains the driver for the onboard SATA software RAID (or installed RAID card if your server is installed with a RAID card) to your server. Then, start the server from the optical drive.
2. If the message `Press any key to boot from cd` is displayed, press any key. If the message `Windows Setup [EMS Enabled]` is displayed, press Enter. Wait several minutes for the system to load the files.
3. If the Windows 7 installation window is displayed, configure the language and other options as you need and then click **Next**.
4. If the Install now window is displayed, click **Install now**.
5. When the Load Driver window is displayed, browse to the folder where the driver is stored, and click **OK**. The “Select the driver to install” window is displayed
6. Select **Hide drivers that are not compatible with hardware on this computer**. Then, click **Next**.
7. Select the operating system that you want to install. Then, click **Next**.
8. Read the license terms and select **I accept the license terms**. Then, click **Next**.
9. If the “Which type of installation do you want?” window is displayed, select the type of installation as you need. The following steps are based on the scenario that **Custom (Advanced)** is selected in this step.
10. In the “Where do you want to install Windows?” window, click **Drive options (advanced)**.
11. Select the hard disk drive on which you want to install the operating system, and then click **New**.
12. Type the amount of space (in MB), and then click **Apply**.
13. When the Install Windows dialog box is displayed, click **OK → Next**. The installation begins.

    Note: Your server will restart several times during the installation.
14. Type your user name and password when prompted.

    Note: The password must consist of uppercase letters, lowercase letters, and digits.

15. If the “Type your Windows product key” window is displayed, type your product key, deselect **Automatically activate Windows when I am online**, and then click **Next**. The product key information is available on the Microsoft Certificate of Authenticity label or product packaging.
16. If the “Help protect your computer and improve Windows automatically” window is displayed, click **Ask me later**.
17. When the “Review your time and date settings” window is displayed, click **Next**.
18. Follow the instructions on the screen to log in to the operating system.

Installing a Microsoft Windows 8 operating system

This topic provides instructions on how to install the following operating systems:

- Microsoft Windows 8 (x86 and x64)
- Microsoft Windows 8 Professional Edition (x86 and x64)

To install a Microsoft Windows 8 operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. If the message `Press any key to boot from cd` is displayed, press any key. If the message `Windows Setup [EMS Enabled]` is displayed, press Enter. Wait several minutes for the system to load the files.
3. When the Windows 8 installation window is displayed, configure the language and other options as you need and then click **Next**.
4. Click **Install now**.
5. When the “Enter the product key to activate Windows” window is displayed, type your product key and then click **Next**. The product key information is available on the Microsoft Certificate of Authenticity label or product packaging.
6. Read the license terms and select **I accept the license terms**. Then, click **Next**.
7. Select the type of installation as you need. The following steps are based on the scenario that **Custom: Install Windows only (Advanced)** is selected in this step.
8. In the “Where do you want to install Windows?” window, click **Load drivers**.
9. Copy the folder that contains the driver to your USB storage device and connect the USB storage device to your server.
10. Click **Browse...** to locate the driver you want to install. Then click **OK**.
11. In the Select the driver to install window, select **Hide drivers that aren’t compatible with this computer’s hardware**.
12. Select the drivers you need and click **Next**.
13. In the “Where do you want to install Windows?” window, click **Driver options (advanced)**.
14. Select the hard disk drive on which you want to install the operating system, and then click **New**.
15. Type the amount of space (in MB), and then click **Apply**.
16. When the Windows Setup dialog box is displayed, click **OK**.
17. Ensure that the drive partition is correct, and then click **Next**. The installation begins.

    Note: Your server will restart several times during the installation.
18. In the Personalize window, personalize your server as you need and click **Next**.
19. When the Settings window is displayed, configure the settings as you need.
20. When the “Sign in to your PC” window is displayed, follow the instructions on the screen to configure the settings. Then, click **Finish** to log in to the operating system.

Installing a Microsoft Windows 8.1 operating system

To install a Microsoft Windows 8.1 operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. If the message `Press any key to boot from cd` is displayed, press any key. If the message `Windows Setup [EMS Enabled]` is displayed, press Enter. Wait several minutes for the system to load the files.
3. When the Windows 8 installation window is displayed, configure the language and other options as you need and then click **Next**.
4. Click **Install now**.
5. When the “Enter the product key to activate Windows” window is displayed, type your product key and then click **Next**. The product key information is available on the Microsoft Certificate of Authenticity label or product packaging.
6. Read the license terms and select **I accept the license terms**. Then, click **Next**.
7. Select the type of installation as you need. The following steps are based on the scenario that **Custom: Install Windows only (Advanced)** is selected in this step.
8. In the “Where do you want to install Windows?” window, click **New**.
9. Type the amount of space (in MB), and then click **Apply**.
10. When the Windows Setup dialog box is displayed, click **OK**.
11. Ensure that the drive partition is correct, and then click **Next**. The installation begins.

    Note: Your server will restart several times during the installation.
12. In the Personalize window, personalize your server as you need and click **Next**.
13. When the Settings window is displayed, configure the settings as you need. The following steps are based on the scenario that **Use express settings** is selected in this step.
14. When the “Your account” window is displayed, follow the instructions on the screen to configure the settings. Then, click **Finish** to log in to the operating system.

Installing a Microsoft Windows Server 2008 R2 (x64) operating system with Service Pack 1

This topic provides instructions on how to install the following operating systems:

- Microsoft Windows Server 2008 R2 Datacenter Edition (x64) with Service Pack 1
- Microsoft Windows Server 2008 R2 Enterprise Edition (x64) with Service Pack 1
- Microsoft Windows Server 2008 R2 Foundation Edition (x64) with Service Pack 1
- Microsoft Windows Server 2008 R2 Standard Edition (x64) with Service Pack 1

To install a Microsoft Windows Server 2008 R2 (x64) operating system with Service Pack 1, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. If the message `Press any key to boot from cd or dvd...` is displayed, press any key. If the message `Windows Setup [EMS Enabled]` is displayed, press Enter. Wait several minutes for the system to load the files.
3. When the “Enter your language and other preferences...” window is displayed, configure the language and other options as you need and then click **Next**.
4. Click **Install now**.

5. Select the operating system that you want to install. Then, click **Next**.

   Note: If you are installing the Windows Server 2008 R2 Foundation Edition (x64) with Service Pack 1, skip this step.
6. Read the license terms and select **I accept the license terms**. Then, click **Next**.
7. Select the type of installation as you need. The following steps are based on the scenario that **Custom: (Advanced)** is selected in this step.
8. In the “Where do you want to install Windows?” window, click **Load driver**.
9. Connect the USB storage device that contains the driver to your server.
10. Browse to the folder where the driver is stored, and click **OK**. The “Select the driver to be installed” window is displayed.
11. Select **Hide drivers that aren’t compatible with this computer’s hardware**, and then select the driver that you want to install on your server. Click **Next**.
12. In the “Where do you want to install Windows?” window, click **Drive options (advanced)**.
13. Select the hard disk drive on which you want to install the operating system, and then click **New**.
14. Type the amount of space (in MB), and then click **Apply**. The Install Windows window is displayed.
15. Click **OK**.
16. Select the drive partition on which you want to install the operating system, and then click **Next**. The installation begins.

    Note: Your server will restart several times during the installation.
17. Change your password when prompted.

    Note: The password must consist of uppercase letters, lowercase letters, and digits.
18. Follow the instructions on the screen to log in to the operating system.

Installing a Microsoft Windows Server 2012 operating system

This topic provides instructions on how to install the following operating systems:

- Microsoft Windows Server 2012 Datacenter Edition
- Microsoft Windows Server 2012 Foundation Edition
- Microsoft Windows Server 2012 Standard Edition

To install a Microsoft Windows Server 2012 operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. If the message `Press any key to boot from CD` is displayed, press any key. If the message `Windows Setup [EMS Enabled]` is displayed, press Enter. Wait several minutes for the system to load the files.
3. When the “Windows Server 2012...” window is displayed, configure the language and other options as you need, and then click **Next**.
4. Click **Install now**.
5. Type your product key and then click **Next**. The product key information is available on the Microsoft Certificate of Authenticity label or product packaging.
6. Select the Windows operating system edition that you want to install. Then, click **Next**. The following steps are based on the scenario that **Windows Server 2012 Standard (Server with a GUI)** is selected in this step.

Note: If you are installing the Windows Server 2012 Foundation Edition, skip this step.

7. Read the license terms and select **I accept the license terms**. Click **Next**.
8. Select the type of installation as you need. The following steps are based on the scenario that **Custom: Install Windows only (Advanced)** is selected in this step.
9. When the “Where do you want to install Windows?” window is displayed, connect the USB storage device that contains the driver to your server. Then, click **Load driver**.
10. Browse to the folder where the driver is stored, and click **OK**. The “Select the driver to install” windows is displayed.
11. Select **Hide drivers that aren’t compatible with this computer’s hardware**, and then select the driver that you want to install on your server. Click **Next**.
12. In the “Where do you want to install Windows?” window, click **Drive options (advanced)**. Then, click **New**.
13. Type the amount of space (in MB), and then click **Apply**. The Windows Setup window is displayed.
14. Click **OK**.
15. Ensure that the drive partition is correct, and then click **Next**. The installation begins.

    Note: Your server will restart several times during the installation.
16. When the Settings window is displayed, set an administrator password and click **Finish**. Then, follow the instructions on the screen to log in to the operating system.

    Note: The password must consist of uppercase letters, lowercase letters, and digits.

Installing the Microsoft Windows Server 2012 Essentials operating system

This topic provides instructions on how to install the Windows Server 2012 Essentials operating system and the device drivers.

Note: Before installing this operating system, connect your server to the network.

To install the Windows Server 2012 Essentials operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. If the message `Press any key to boot from CD or DVD...` is displayed, press any key. If the message `Windows Setup [EMS Enabled]` is displayed, press Enter. Wait several minutes for the system to load the files.
3. When the Windows Server 2012... window is displayed, configure the language and other options as you need, and then click **Next**.
4. Click **Install now**.
5. Type your product key and then click **Next**. The product key information is available on the Microsoft Certificate of Authenticity label or product packaging.
6. Read the license terms and select **I accept the license terms**. Then, click **Next**.
7. Select the type of installation as you need. The following steps are based on the scenario that **Custom: Install Windows only (Advanced)** is selected in this step.
8. In the “Where do you want to install Windows?” window, click **Load driver**. The Load driver window is displayed.
9. Connect the USB storage device that contains the driver to your server, and then browse to the folder where the driver is stored. Click **OK**. The “Select the driver to install” window is displayed.

10. Select **Hide drivers that aren't compatible with this computer's hardware**, and select the driver that you want to install on your server. Then, click **Next**.
11. In the "Where do you want to install Windows?" window, click **Drive options (advanced)**. Then, click **New**.
12. Type the amount of space (in MB), and then click **Apply**. The Windows Setup window is displayed.
13. Click **OK**.
14. Ensure that the drive partition is correct, and then click **Next**. The installation begins.

    Note: Your server will restart several times during the installation.
15. If the driver for Ethernet card is not identified, do the following:
    a. When the message `Errors occurred during installation` is displayed, connect the USB storage device that contains the driver for the Ethernet card to your server.
    b. Press Shift+F10, input the command `devmgmt.msc`, and then press Enter. The Device Manager window is displayed.
    c. Click **other devices**, and then right-click **Ethernet Controller**.
    d. Click **Update Driver Software... → Browse my computer for driver software**.
    e. Browse to the folder where the driver is stored, and then click **Next**.
    f. In the "Update Driver Software-Intel... Connection" window, click **Close**. Go back to the command window and close it.
    g. In the "Errors occurred during installation" window, click **Restart** to restart your server.
16. Configure the date and time, and then click **Next**.
17. Choose the type of installation as you need. The following steps are based on the scenario that **Clean install** is selected.
18. Personalize the server by typing the user name and then click **Next**.
19. In the" Provide your administrator information (account 1 of 2)" window, type your user name and password, and then click **Next**.

    Note: The password must contain at least eight characters, and consist of uppercase letters, lowercase letters, and digits.
20. In the "Provide your administrator information (account 2 of 2)" window, type your user name and password, and then click **Next**.
21. In the "Keep your server up-to-date automatically" window, configure the settings as you need. Your server will restart several times.
22. When the "Your server is now ready to be used" window is displayed, click **Close**. The installation is completed.

Installing a Microsoft Windows Server 2012 R2 operating system

This topic provides instructions on how to install the following operating systems:

- Microsoft Windows Server 2012 R2 Datacenter Edition
- Microsoft Windows Server 2012 R2 Foundation Edition
- Microsoft Windows Server 2012 R2 Standard Edition

To install a Microsoft Windows Server 2012 R2 operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.

2. If the message `Press any key to boot from cd` is displayed, press any key. If the message `Windows Setup [EMS Enabled]` is displayed, press Enter. Wait several minutes for the system to load the files.
3. When the Windows Server 2012 R2 window is displayed, configure the language and other options as you need, and then click **Next**.
4. Click **Install now**.
5. If prompted, type your product key and then click **Next**. The product key information is available on the Microsoft Certificate of Authenticity label or product packaging.
6. Select the Windows operating system edition that you want to install. Then, click **Next**.

   Note: If you are installing the Windows Server 2012 R2 Foundation operating system, skip this step.
7. Read the license terms and select **I accept the license terms**. Click **Next**.
8. Select the type of installation as you need. The following steps are based on the scenario that **Custom: Install Windows only (Advanced)** is selected in this step.

   Note: If you do not need to configure RAID on your server, go to step 10.
9. If you want to install the driver for the onboard SATA software RAID or installed RAID card, do the following:
   a. In the “Where do you want to install Windows?” window, click **Load driver**.
   b. Connect the USB storage device that contains the driver to your server, and then browse to the folder where the driver is stored.
   c. Click **OK**. The “Select the driver to install” windows is displayed.
   d. Select **Hide drivers that aren’t compatible with this computer’s hardware**, and then select the driver that you want to install on your server. Click **Next**.
10. In the “Where do you want to install Windows?” window, click **Drive options (advanced)**. Then, click **New**.
11. Type the amount of space (in MB), and then click **Apply**. The Windows Setup window is displayed.
12. Click **OK**.
13. Ensure that the drive partition is correct, and then click **Next**. The installation begins.

    Note: Your server will restart several times during the installation.
14. When the Settings window is displayed, set an administrator password and click **Finish**. Then, follow the instructions on the screen to log in to the operating system.

    Note: The password must consist of uppercase letters, lowercase letters, and digits.

Installing the Microsoft Windows Server 2012 R2 Essentials operating system

This topic provides instructions on how to install the Microsoft Windows Server 2012 R2 Essentials operating system.

To install the Microsoft Windows Server 2012 R2 Essentials operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. If the message `Press any key to boot from cd` is displayed, press any key. If the message `Windows Setup [EMS Enabled]` is displayed, press Enter. Wait several minutes for the system to load the files.
3. When the Windows Server 2012 R2 window is displayed, configure the language and other options as you need, and then click **Next**.

4. Click **Install now**.
5. Type your product key and then click **Next**. The product key information is available on the Microsoft Certificate of Authenticity label or product packaging.
6. Read the license terms and select **I accept the license terms**. Then, click **Next**.
7. Select the type of installation as you need. The following steps are based on the scenario that **Custom: Install Windows only (Advanced)** is selected in this step.

   Note: If you do not need to configure RAID on your server, go to step 9.
8. If you want to install the driver for the onboard SATA software RAID or installed RAID card, do the following:
   a. In the "Where do you want to install Windows?" window, click **Load driver**.
   b. Connect the USB storage device that contains the driver to your server, and then browse to the folder where the driver is stored.
   c. Click **OK**. The "Select the driver to install" windows is displayed.
   d. Select **Hide drivers that aren't compatible with this computer's hardware**, and then select the driver that you want to install on your server. Click **Next**.
9. In the "Where do you want to install Windows?" window, click **Drive options (advanced)**. Then, click **New**.
10. Type the amount of space (in MB), and then click **Apply**. The Windows Setup window is displayed.
11. Click **OK**.
12. Ensure that the drive partition is correct, and then click **Next**. The installation begins.

    Note: Your server will restart several times during the installation.
13. When the Settings window is displayed, set an administrator password and click **Finish**. Then, follow the instructions on the screen to log in to the operating system.

    Note: The password must consist of uppercase letters, lowercase letters, and digits.
14. In the "Configure Windows Server Essentials" window, click **Next**.
15. Set your date and time. Then, click **Next**.
16. Configure the company information as you need. Click **Next**.
17. In the "Create a network administrator account" window, set your user name and password. Then, click **Next**.
18. In the Update settings window, select the update method as you need. The following steps are based on the scenario that **Do not check to updates** is selected in this step.
19. Click **Configure**. When the "Updating and preparing your server" window is displayed, wait several minutes. Your server will restart several times.
20. When the Configuration completed window is displayed, click **Close**. The installation is completed.

Installing the Microsoft Windows Server 2016 operating system

This topic provides instructions on how to install the following operating systems:

- Microsoft Windows Server 2016 Datacenter Edition
- Microsoft Windows Server 2016 Standard Edition

To install a Microsoft Windows Server 2016 operating system, do the following:

1. Download the required driver from the Lenovo Web site to a USB storage device, and connect the USB storage device to your server. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at:
   http://www.lenovo.com/drivers
2. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
3. If the message `Press any key to boot from CD` is displayed, press any key. If the message `Windows Setup [EMS Enabled]` is displayed, press Enter. Wait several minutes for the system to load the files.
4. When the “Windows Server 2016...” window is displayed, configure the language and other options as you need, and then click **Next**.
5. Click **Install now**.
6. Type your product key and then click **Next**. The product key information is available on the Microsoft Certificate of Authenticity label or product packaging.
7. Select the Windows operating system edition that you want to install. Then, click **Next**. The following steps are based on the scenario that **Windows Server 2016 Standard (Server with a GUI)** is selected in this step.
8. Read the applicable notices and license terms and select **I accept the license terms**. Click **Next**.
9. Select the type of installation as you need. The following steps are based on the scenario that **Custom: Install Windows only (Advanced)** is selected in this step.
10. In the “Where do you want to install Windows?” window, choose the storage device to install the operating system, and click **Drive options (advanced)**. Then, click **New**.
11. Type the amount of space (in MB), and then click **Apply**.
12. In the Windows Setup window, click **OK**.
13. Ensure that the drive partition is correct, and then click **Next**. The installation begins.

    Note: Your server will restart several times during the installation.
14. In Settings window, type your password and click **Finish**.
15. Follow the instructions on the screen to log in to the operating system when prompted.

Installing the Microsoft Windows Server 2016 Essentials operating system

This topic provides instructions on how to install the Windows Server 2016 Essentials operating system and the device drivers.

To install the Windows Server 2016 Essentials operating system, do the following:

1. Download the required driver from the Lenovo Web site to a USB storage device, and connect the USB storage device to your server. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at:
   http://www.lenovo.com/drivers
2. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
3. If the message `Press any key to boot from CD or DVD...` is displayed, press any key. If the message `Windows Setup [EMS Enabled]` is displayed, press Enter. Wait several minutes for the system to load the files.
4. When the “Windows Server 2016...” window is displayed, configure the language and other options as you need, and then click **Next**.
5. Click **Install now**.

6. Type your product key and then click **Next**. The product key information is available on the Microsoft Certificate of Authenticity label or product packaging.
7. Read the applicable notices and license terms and select **I accept the license terms**. Then, click **Next**.
8. Select the type of installation as you need. The following steps are based on the scenario that **Custom: Install Windows only (Advanced)** is selected in this step.
9. In the “Where do you want to install Windows?” window, choose the storage device to install the operating system, and click **Drive options (advanced)**. Then, click **New**.
10. Type the amount of space (in MB), and then click **Apply**. The Windows Setup window is displayed.
11. Click **OK**.
12. Ensure that the drive partition is correct, and then click **Next**. The installation begins.

    Note: Your server will restart several times during the installation.
13. When the “Settings” window is displayed, type your password and click **Finish**. Then, follow the instructions on the screen to log in to the operating system.

Installing the Microsoft Windows Storage Server 2012 Standard operating system

To install the Microsoft Windows Storage Server 2012 Standard operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. When the message `Press any key to boot from CD or DVD` is displayed, press any key. If the message `Windows Setup [EMS Enabled]` is displayed, press Enter. Wait several minutes for the system to load the files.
3. When the Windows Server 2012 window is displayed, configure the language and other options as you need, and then click **Next**.
4. Click **Install now**.

   Note: Type your product key if prompted and then click **Next**. The product key information is available on the Microsoft Certificate of Authenticity label or product packaging.
5. Select the operating system you want to install and click **Next**. The following steps are based on the scenario that **Windows Storage Server 2012 Standard Evaluation** is selected in this step.
6. Read the license terms and select **I accept the license terms**. Click **Next**.
7. In the “Which type of installation do you want?” window, select the type of installation as you need. Then, click **Next**. The following steps are based on the scenario that **Custom: Install Windows only (advanced)** is selected in this step.
8. In the “Where do you want to install Windows?” window, connect the USB storage device that contains the driver to your server and click **Load Driver**.
9. Click **Browse** to locate the required driver and then click **OK**.
10. In the “Select the driver to be installed” window, select **Hide drivers that are not compatible with hardware on this computer**, select the driver that you want to install, and then click **Next** to install the driver.
11. In the “Where do you want to install Windows?” window, click **Drive 0 Unallocated Space**. Then, click **New**.
12. Type the amount of space (in MB), and then click **Apply**.
13. In the Windows Setup window, click **OK**.
14. Ensure that the drive partition is correct, and then click **Next**. The installation begins.

Note: The server restarts several times during the installation.

15. When the Settings window is displayed, set an administrator password and click **Finish**. When prompted, follow the instructions on the screen to log in to the operating system.

Installing the Microsoft Windows Storage Server 2012 R2 Standard operating system

To install the Microsoft Windows Storage Server 2012 R2 Standard operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. When the message `Press any key to boot from CD or DVD` is displayed, press any key. If the message `Windows Setup [EMS Enabled]` is displayed, press Enter. Wait several minutes for the system to load the files.
3. When the Windows Server 2012 R2 window is displayed, configure the language and other options as you need, and then click **Next**.
4. Click **Install now**.

   Note: Type your product key if prompted and then click **Next**. The product key information is available on the Microsoft Certificate of Authenticity label or product packaging.
5. Read the license terms and select **I accept the license terms**. Click **Next**.
6. In the “Which type of installation do you want?” window, select the type of installation as you need. Then, click **Next**. The following steps are based on the scenario that **Custom: Install the newer version of Storage server only (advanced)** is selected in this step.
7. In the “Where do you want to install Windows?” window, depending on the SATA configuration on your server, do one of the following:
   - If your SATA configuration is set as **RAID** (both **onboard SATA software RAID** and **RAID card**): do the following:
     a. Connect the USB storage device that contains the driver to your server and click **Load Driver**.
     b. Click **Browse** to locate the required driver and then click **OK**.
     c. In the “Select the driver to be installed” window, select **Hide drivers that are not compatible with hardware on this computer**, select the driver that you want to install, and then click **Next** to install the driver.
   - If your SATA configuration is set as **IDE**: go to step 8.
   - If your SATA configuration is set as **AHCI**: go to step 8. Be sure to install the AHCI driver after the operating system installation is completed.
8. In the “Where do you want to install Storage Server?” window, click **Drive 0 Unallocated Space**. Then, click **New**.
9. Type the amount of space (in MB), and then click **Apply**.
10. In the Windows Storage Server Setup window, click **OK**.
11. Ensure that the drive partition is correct, and then click **Next**. The installation begins.

    Note: The server restarts several times during the installation.
12. When the Settings window is displayed, set an administrator password and click **Finish**. When prompted, follow the instructions on the screen to log in to the operating system.

Installing the Microsoft Windows Small Business Server 2011 Essentials

This topic provides instructions on how to install the Microsoft Windows Small Business Server 2011 Essentials.

Note: Before installing this operating system, connect your server to the network.

To install the Microsoft Windows Small Business Server 2011 Essentials, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Connect the USB storage device that contains the driver for the onboard SATA software RAID (or installed RAID card if your server is installed with a RAID card) to your server. Then, start the server from the optical drive.
2. If the message `Press any key to boot from cd` is displayed, press any key. If the message `Windows Setup [EMS Enabled]` is displayed, press Enter. Wait several minutes for the system to load the files.
3. In the Installing Windows window, select **New Installation**.

   Note: If your server has an operating system installed, there will be another option **Repair an Existing Installation**. The following steps are based on the scenario that **New Installation** is selected in this step.
4. Click **Load drivers** and browse to the folder where the driver is stored. Click **OK** to load the driver.
5. Select **I understand that if I click Install, all files and folders on your primary hard drive will be deleted**. Then, click **Install** to start the operating system installation. The Install Windows window is displayed. Wait for a moment.

   Note: Disk partition cannot be performed. If the disk capacity is 2T, all the 2T capacity is used for installing the operating system.
6. If the “Errors occurred during installation” window is displayed, connect the USB storage device that contains the driver for the Ethernet card to your server.
7. Press Shift+F10, input the command `devmgmt.msc`, and then press Enter. The Device Manager window is displayed.
8. Click **other devices**, right-click **Ethernet Controller**, and then click **Update Driver Software → Browse my computer for driver software**.
9. Browse to the folder where the driver is stored and click **OK**. Then, click **Next** to load the driver.
10. After the driver is loaded, click **Close**. Go back to the command window and close it.
11. In the “Errors occurred during installation” window, click **Restart** to restart your server.
12. When the “Windows Small Business Server 2011” window is displayed, configure the language and other options as you need, and then click **Next**.
13. In the “Verify the date and time settings” window, configure the date and time. Then, click **Next**.
14. Read the license terms and select **I accept the license**. Then, click **Next**.

    Note: If prompted, deselect **Automatically activate Windows**.
15. If prompted, type your product key and then click **Next**.
16. Personalize the server by typing the user name, and then click **Next**.
17. In the “Provide your administrator information (account 1 of 2)” window, type your user name and password. Then, click **Next**.

    Note: The password must contain at least eight characters, and consist of uppercase letters, lowercase letters, and digits.

18. In the “Provide your administrator information (account 2 of 2)” window, type your user name and password, and then click **Next**.
19. In the “Keep your server up-to-date automatically” window, configure the settings as you need. Your server will restart several times.
20. When the “Your server is now ready to use” window is displayed, click **Close** to complete the installation.

Installing the Microsoft Windows Small Business Server 2011 Standard operating system

This topic provides instructions on how to install the Microsoft Windows Small Business Server 2011 Standard operating system.

Note: Before you install this operating system, connect your server to the network.

To install the Microsoft Windows Small Business Server 2011 Standard operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. If the message `Press any key to boot from cd or DVD` is displayed, press any key. If the message `Windows Setup [EMS Enabled]` is displayed, press Enter. Wait several minutes for the system to load the files.
3. In the Installing Windows window, select the language and other options. Then, click **Next**.
4. Click **Install now**.
5. Read the license terms, select **I accept the license terms**, and click **Next**.
6. Select the type of installation as you need. The following steps are based on the scenario that **Custom (advanced)** is selected in this step.
7. When the “Where do you want to install Windows” window is displayed, connect the USB storage device that contains the driver to your server, and click **Load Driver**.
8. Browse to the folder where the driver is stored, and click **OK**. The “Select the driver to be installed” window is displayed.
9. Select the driver you want to install and click **Next**.
10. In the “Where do you want to install Windows” window, click **Drive options(advanced)**.
11. Select the hard disk drive on which you want to install the operating system and click **New**.
12. Type the amount of space (in MB), and then click **Apply**.
13. Ensure that the drive partition is correct and click **Next**. The installation begins.

    Notes:

    - The drive partition must be greater than 80 GB. It is recommended that the drive partition is greater than 120 GB.
    - Your server will restart several times during the installation.
14. In the Continue Installation window, select **Clean Install**. Then, click **Next**.
15. Click **Open Date and Time to verify the clock and time zone settings** to set your date and time, and click **OK**. Then, click **Next**.

    Note: If the server can identify the Ethernet card, go to Step 23.
16. When “A network adapter was not found” window is displayed, connect the USB storage device that contains the driver for the Ethernet card to your server.

17. Press Shift+F10, input the command `devmgmt.msc`, and press Enter. The Device Manager window is displayed.
18. Click **other devices**, and then right-click **Ethernet Controller**.
19. Click **Update Driver Software... → Browse my computer for driver software**.
20. Browse to the folder where the driver is stored, and then click **Next**.
21. In the Update Driver Software-Intel... Connection window, click **Close**. Go back to the command window and close it.
22. In the “A network adapter was not found” window, click **Back** to return to the “Verify the clock and time zone settings” window. Then, click **Next**.
23. In the “Server network configuration” window, configure the network settings as you need. Then, click **Next**.
24. In the Get important updates window, select the update method depending on your need. The following steps are based on the scenario that **Do not get the most recent installation updates** is selected in this step.
25. In the Connecting your server window, configure the company information and click **Next**.
26. Personalize the server and network information depending on your need. Then, click **Next**.
27. In the “Add a network administrator account” window, set your user name and password. Then, click **Next**.

    Note: The password must contain at least eight characters, and consist of uppercase letters, lowercase letters, and digits.
28. Click **Next**. The server will restart.
29. When the “Expanding and installing files” window is displayed, the server will install files automatically. Your server will restart several times.
30. When the “Installation finished” (or “Successful installation” in UEFI mode) window is displayed, the installation is completed.

Installing the Microsoft Windows Small Business Server 2011 Premium Add-on operating system

This topic provides instructions on how to install the Microsoft Windows Small Business Server 2011 Premium Add-on operating system.

To install the Microsoft Windows Small Business Server 2011 Premium Add-on operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. If the message `Press any key to boot from CD or DVD` is displayed, press any key. If the message `Windows Setup [EMS Enabled]` is displayed, press Enter. Wait several minutes for the server to load the files.
3. In the Installing Windows window, select the language and other options. Then, click **Next**.
4. Click **Install now**.
5. Select the operating system you want to install and click **Next**.
6. Read the license terms and select **I accept the license terms**. Then, click **Next**.
7. Select the type of installation as you need. The following steps are based on the scenario that **Custom (Advanced)** is selected in this step.
8. In the “Where do you want to install Windows?” window, connect the USB storage device that contains the driver to your server, and click **Load Driver**.

9. Browse to the folder where the driver is stored and click **OK**. The “Select the driver to be installed” window is displayed.
10. Select the driver that you want to install on your server, and click **Next**.
11. In the “Where do you want to install Windows?” window, click **Drive options (advanced)**.
12. Select the hard disk drive on which you want to install the operating system, and then click **New**.
13. Type the amount of space (in MB), and then click **Apply**.
14. When the Install Windows dialog box is displayed, click **OK**.
15. Ensure that the drive partition is correct, and then click **Next**. The installation begins.

    Note: Your server will restart several times during the installation.
16. Change your password when prompted.

    Note: The password must consist of uppercase letters, lowercase letters, and digits.
17. Follow the instructions on the screen to log in to the operating system.

Installing the Microsoft Hyper-V Server 2012 R2 operating system

To install the Microsoft Hyper-V Server 2012 R2 operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. If the message `Press any key to boot from cd or dvd...` is displayed, press any key. If the message `Windows Setup [EMS Enabled]` is displayed, press Enter. Wait several minutes for the system to load the files.
3. When the “Microsoft Hyper-V Server 2012 R2” window is displayed, configure the language and other options as you need, and then click **Next**.
4. Click **Install now**.
5. Read the license terms and select **I accept the license terms**. Click **Next**.
6. Select the type of installation as you need. The following steps are based on the scenario that **Custom: Install the newer version of Hyper-V Server only (Advanced)** is selected in this step.

    Note: If you do not need to configure RAID on your server, go to step 8.
7. If you want to install the driver for the onboard SATA software RAID or installed RAID card, do the following:
    a. In the “Where do you want to install Windows?” window, click **Load driver**.
    b. Connect the USB storage device that contains the driver to your server, and then browse to the folder where the driver is stored.
    c. Click **OK**. The “Select the driver to install” windows is displayed.
    d. Select **Hide drivers that aren’t compatible with this computer’s hardware**, and then select the driver that you want to install on your server. Click **Next**.
8. In the “Where do you want to install Hyper–V Server?” window, click **New**.
9. Type the amount of space (in MB), and then click **Apply**.
10. In the “Microsoft Hyper-V Server Setup” window, click **OK**.
11. Ensure that the drive partition is correct, and then click **Next**. The installation begins.

    Note: Your server will restart several times during the installation.
12. When the Administrator window is displayed, click **OK** and set an administrator password.

13. Press Enter. When the message `Your password has been changed` is displayed, click **OK** to log in to the operating system.

Installing the Microsoft Hyper-V Server 2016 operating system

This topic provides instructions on how to install the Hyper-V Server 2016 operating system.

To install the Microsoft Hyper-V Server 2016 operating system, do the following:

1. Download the required driver from the Lenovo Web site to a USB storage device, and connect the USB storage device to your server. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at:
   http://www.lenovo.com/drivers
2. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
3. If the message `Press any key to boot from cd or dvd...` is displayed, press any key. If the message `Windows Setup [EMS Enabled]` is displayed, press Enter. Wait several minutes for the system to load the files.
4. When the “Microsoft Hyper-V Server 2016” window is displayed, configure the language and other options as you need, and then click **Next**.
5. Click **Install now**.
6. Read the applicable notices and license terms and select **I accept the license terms**. Click **Next**.
7. Select the type of installation as you need. The following steps are based on the scenario that **Custom: Install the newer version of Hyper-V Server only (Advanced)** is selected in this step.
8. In the “Where do you want to install Windows?” window, choose the storage device to install the operating system, and then click **New**.
9. Type the amount of space (in MB), and then click **Apply**.
10. In the “Microsoft Hyper-V Server Setup” window, click **OK**.
11. Ensure that the drive partition is correct, and then click **Next**. The installation begins.

    Note: Your server will restart several times during the installation.
12. When the Administrator window is displayed, click **OK** and set an administrator password.
13. Press Enter. When the message `Your password has been changed` is displayed, click **OK** to log in to the operating system.

Installing the Red Hat Enterprise Linux AS 6.5 operating system

Note: The maximum system memory that the Red Hat Enterprise Linux AS 6.5 (x86) operating system can support is 16 GB.

To install the Red Hat Enterprise Linux AS 6.5 (x64 or x86) operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. When the welcome window is displayed, select the option as you need. The following steps are based on the scenario that **Install or upgrade an existing system** (or **Red Hat Enterprise Linux 6.5** in UEFI mode) is selected in this step. Then, press Enter.
3. In the Disc Found window, select **Skip**, and then press Enter.

   Note: If prompted, click **Yes**.
4. If the “Unsupported Hardware Detected” window is displayed, click **OK**.

5. In the RED HAT installation window, click **Next**.
6. Select the language as you need and click **Next**.
7. Select the appropriate keyboard layout for the system and click **Next**.
8. Select the type of devices for the installation and then click **Next**. The following steps are based on the scenario that **Basic Storage Devices** is selected in this step.

   Notes:

   - If a warning message is displayed, click **Yes, discard any data**.
   - If the message “At least one existing installation has been detected on your system. What would you like to do ? ” is displayed, select the option as you need and click **Next**. The following steps are based on the scenario that **Fresh installation** is selected.
9. Type a name for your server. Then, click **Next**.
10. Specify your time zone by selecting the nearest city in your time zone. Then, click **Next**.
11. Personalize the server by typing the root password for the root user account. Then, click **Next**.

    Note: If a message prompts you that the password is weak, click **Use Anyway**.
12. Select the type of installation as you need, and then click **Next**. The following steps are based on the scenario that **Create Custom Layout** is selected in this step.

    Note: If the “Below are the storage devices” window is displayed, move the RAID or hard disk drives from the **Data Storage Devices** list to the **Install Target Devices** list. Select the RAID or hard disk drives and then click **Next**.
13. In the “Please Select A Device” window, do one of the following to create a partition and then click **Next**.

    - Manually create a root partition (/)

      To create a root partition, do the following:

      a. Click **Create**. The Create Storage window is displayed.
      b. Select **Standard Partition** and then click **Create**.
      c. In the Add Partition window, select the forward slash **(/)** from the **Mount Point** drop-down list box.
      d. Select **ext4** from the **File System Type** drop-down list box.
      e. In the Allowable Drives window, select the hard disk drive on which you want to install the operating system.
      f. Type the amount of space (in MB) of the new partition and then click **OK**.
    - Manually create a boot partition (/boot)

      To create a boot partition, do the following:

      a. Click **Create**. The Create Storage window is displayed.
      b. Select **Standard Partition** and then click **Create**.
      c. In the Add Partition window, select **/boot** (or **/boot/efi** in UEFI mode) from the **Mount Point** drop-down list box.
      d. Select **ext4** (or **EFI System Partition** in UEFI mode) from the **File System Type** drop-down list box.
      e. In the Allowable Drives window, select the hard disk drive on which you want to install the operating system.
      f. Type the amount of space (in MB) of the new partition and then click **OK**.
    - Manually create a swap partition

      To create a swap partition, do the following:

a. Click **Create**. The Create Storage window is displayed.
b. Select **Standard Partition** and then click **Create**.
c. In the Add Partition window, select **swap** from the **File System Type** drop-down list box.
d. In the Allowable Drives window, select the hard disk drive on which you want to install the operating system.
e. Type the amount of space (in MB) of the new partition and then click **OK**.

14. If the Format Warnings window is displayed, click **Format** to format the hard disk drive.
15. In the "Writing storage configuration to disk" window, click **Write changes to disk**.
16. In the "Boot loader operating system list" window, click **Next**.
17. The default installation is a basic server installation. You can customize your server by selecting a different set of software from the software list or adding additional repositories that you want to use for the software installation. Select **Customize now** or **Customize later**. Then, click **Next**. The installation process begins.

    Notes:

    - If you select **Customize now**, you can select software installation packages of your choice. Then, click **Next**.
    - When installing the operating system in UEFI mode, do not select the package named **tboot-1.7.4-1.el6.x86_64 - Perfomrms a verified launch using Intel TXT**.
    - If a warning message is displayed, configure the settings as you need. The following steps are based on the scenario that **Continue** is selected in this step.

18. After the installation is completed, click **Reboot** to restart your server.
19. The installation continues after the server restarts. In the Welcome window, click **Forward**.
20. Click **Yes, I agree to the License Agreement** and then click **Forward**.
21. In the Set Up Software Updates window, configure the settings as you need, and then click **Forward**.
22. In the Finish Updates Setup window, click **Forward**.
23. Set your user name and password and then click **Forward**.
24. Set your time and date and then click **Forward**.
25. In the Kdump window, configure the settings as you need. The following steps are based on the scenario that **Enable kdump** is selected in this step. Then click **Finish** to complete the installation.

    Note: When prompted to restart the server, click **Yes → OK**.

26. Follow the instructions on the screen to log in to the operating system.

Installing the Red Hat Enterprise Linux 6.7 operating system

This topic provides instructions on how to install the following operating systems:

- RedHat Enterprise Linux 6.7 (x86)
- RedHat Enterprise Linux 6.7 (x64)

To install the Red Hat Enterprise Linux 6.7 operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. In the "RedHat Enterprise Linux 6.7 Welcome" window, select **Install or upgrade an existing system** in multiple options and press Enter.

Note: In UEFI mode, in the Press any key to... window, press any key to start installing Red Hat Enterprise Linux 6.7. In the GNU GRUB version 0.97 window, choose the option you need and press Enter.

3. When the Disk Found window is displayed, select **Skip** and then press Enter.
4. In the RED HAT window, click **Next**.
5. Select the language that you want to use during the installation process and click **Next**.
6. Select the appropriate keyboard layout for the system and click **Next**.
7. Select the type of devices that are involved in the installation, and then click **Next**.

   Note: If the Storage Device Warning window is displayed, click **Yes, discard any data**. If the message displays as "At least one existing installation has been detected on your system. What would you like to do?", select the option as you desired and then click **Next**.
8. Type a name for your server. Then, click **Next**.
9. Specify your time zone by selecting the nearest city in your time zone. Then, click **Next**.
10. Personalize the server by typing the root password for the root user account. Then, click **Next**.

    Note: If a message prompts you that the password is weak, click **Use Anyway**.
11. In the Which type of the installation would you like window, select your desired option and click **Next**. The following steps are based on the scenario that **Create Custom Layout** is selected in this step. If the Below are the storage devices window is displayed, move the RAID or hard disk in the Data Storage Devices list to the Install Target Devices list in the right, and then click **Next**.
12. In the Please Select A Device window, do one of the following to create a partition and then click **Next**.
    - Manually create a root partition (*/*)

      To create a root partition, do the following:
      a. Click **Create**. The Create Storage window is displayed.
      b. Select **Standard Partition** and then click **Create**.
      c. In the Add Partition window, select the forward slash **(/)** from the **Mount Point** drop-down list box.
      d. Select **Ext4** from the **File System Type** drop-down list box.
      e. In the Allowable Drives window, select the hard disk drive on which you want to install the operating system.
      f. Type the amount of space (in MB) in the New Partitions Size window and then click **OK**.
    - Manually create a boot partition (**/boot** in legacy mode) or (**/boot/efi** in UEFI mode)

      To create a boot partition, do the following:
      a. Click **Create**. The Create Storage window is displayed.
      b. Select **Standard Partition** and then click **Create**.
      c. In the Add Partition window, select **/boot/** (or select **(/boot/efi)** in UEFI mode) from the **Mount Point** drop-down list box.
      d. Select **Ex4** (or **EFI System Partition** in UEFI mode) from the **File System Type** drop-down list box.
      e. In the Allowable Drives window, select the hard disk drive on which you want to install the operating system.
      f. Type the amount of space (in MB) in the New Partitions Size window and then click **OK**.
    - Manually create a swap partition

      To create a swap partition, do the following:
      a. Click **Create**. The Create Storage window is displayed.

b. Select **Standard Partition** and then click **Create**.

c. In the Add Partition window, select **swap** from the **File System Type** drop-down list box.

d. In the Allowable Drives window, select the hard disk drive on which you want to install the operating system.

e. Type the amount of space (in MB) in the New Partitions Size window and then click **OK**.

Go back to the Partitioner window, the created root partition, boot partition, and swap partition are displayed. Click **Next**. The drive partition is finished.

13. In the Format Warnings window, click **Format** to format the hard disk drive.
14. In the "Writing storage configuration to disk" window, click **Write changes to disk**.
15. In the "Boot loader operating system list" window, click **Next**.
16. The default installation is a basic server installation. You can customize your server by selecting a different set of software from the software list or adding additional repositories that you want to use for the software installation. Select **Customize now**. Then click **Next**. The installation process begins.

    Notes:

    - When a warning window is displayed, select the option of your choice and then continue with the installation.
    - If you install the operating system in the UEFI mode, ensure that the check box **tboot-1.7.4-1.el6. X86_64 - Performs a verified launch using Intel TXT** is cleared.
17. After the installation is completed, click **Reboot** to restart your server.
18. The installation continues after the server restarts. In the Welcome window, click **Forward**.
19. In the License Information window, select **Yes, I agree to the License Agreement**, and then click **Forward**.
20. In the Set Up Software Updates window, configure the settings you need, and then click **Forward**. If the "Are you sure?" window is displayed, click **Register Later**.
21. In the Finish Updates Setup window, click **Forward**.
22. Set your user name and password and then click **Forward**.
23. Set your time and date and then click **Forward**.
24. In the Kdump window, select **Enable kdump** if you want to enable kdump, and then click **Finish** to complete the installation.

    Note: When prompted to restart the server, click **Yes**.
25. Follow the instructions on the screen to log in to the operating system.

Installing the Red Hat Enterprise Linux 6.8 operating system

This topic provides instructions on how to install the following operating systems:

- RedHat Enterprise Linux 6.8 (x86)
- RedHat Enterprise Linux 6.8 (x64)

To install the Red Hat Enterprise Linux 6.8 operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. In the Disk Found window, click **Skip**.

Note: If the operating system is installed on the SAN card through iSCSI, the Networking Device window is displayed. Select the desired **Ethernet device**, and then click **OK**. In the Configure TCP/IP window, select the option according to the network environment. The following steps are based on the scenario that **Enable Ipv4 support->Dynamic IP configuration (DHCP)** is selected.

3. In the RED HAT window, click **Next**.
4. Select the language that you want to use during the installation process and click **Next**.
5. Select the appropriate keyboard layout for the system and click **Next**.
6. Select the type of devices that are involved in the installation, and then click **Next**.

   Note: If the Storage Device Warning window is displayed, click **Yes, discard any data**. If the message displays as "At least one existing installation has been detected on your system. What would you like to do?", select the option as you desired and then click **Next**.
7. Type a name for your server. Then click **Next**.
8. Specify your time zone by selecting the nearest city in your time zone. Then click **Next**.
9. Personalize the server by typing the root password for the root user account. Then click **Next**.

   Note: If a message prompts you that the password is weak, click **Use Anyway**.
10. In the "Which type of the installation would you like?" window, select your desired option. The following steps are based on the scenario that **Create Custom Layout** is selected in this step and click **Next**.
11. In the Please Select A Device window, do one of the following to create a partition and then click **Next**.
    - Manually create a root partition (/)

      To create a root partition, do the following:
      a. Click **Create**. The Create Storage window is displayed.
      b. Select **Standard Partition** and then click **Create**.
      c. In the Add Partition window, select the forward slash **(/)** from the **Mount Point** drop-down list box.
      d. Select **ext4** from the **File System Type** drop-down list box.
      e. In the Allowable Drives window, select the hard disk drive on which you want to install the operating system.
      f. Type the amount of space (in MB) in the New Partitions Size window and then click **OK**.
    - Manually create a boot partition (**/boot** in legacy mode) or (**/boot/efi** in UEFI mode)

      To create a boot partition, do the following:
      a. Click **Create**. The Create Storage window is displayed.
      b. Select **Standard Partition** and then click **Create**.
      c. In the Add Partition window, select **/boot/efi** (or select **/boot** in legacy mode) from the **Mount Point** drop-down list box.
      d. Select **EFI System Partition** (or select **ext4** in legacy mode) from the **File System Type** drop-down list box.
      e. In the Allowable Drives window, select the storage device on which you want to install the operating system.
      f. Type the amount of space (in MB) in the New Partitions Size window and then click **OK**.
    - Manually create a swap partition

      To create a swap partition, do the following:
      a. Click **Create**. The Create Storage window is displayed.
      b. Select **Standard Partition** and then click **Create**.

c. In the Add Partition window, select **swap** from the **File System Type** drop-down list box.

d. In the Allowable Drives window, select the hard disk drive on which you want to install the operating system.

e. Type the amount of space (in MB) in the New Partitions Size window and then click **OK**.

Go back to the Partitioner window, the created root partition, boot partition, and swap partition are displayed. Click **Next**. The drive partition is finished.

12. In the Format Warnings window, click **Format** to format the hard disk drive.
13. In the “Writing storage configuration to disk” window, click **Write changes to disk**.
14. In the “Boot loader operating system list” window, click **Next**.
15. The default installation is a basic server installation. You can customize your server by selecting a different set of software from the software list or adding additional repositories that you want to use for the software installation. Select **Customize now**. Then, click **Next**. The installation process begins.

    Note: When a warning window is displayed, select the option of your choice and then continue with the installation.
16. After the installation is completed, click **Reboot** to restart your server.
17. The installation continues after the server restarts. In the Welcome window, click **Forward**.
18. In the License Information window, select **Yes, I agree to the License Agreement**, and then click **Forward**.
19. In the Set Up Software Updates window, configure the settings you need, and then click **Forward**. If “Are you sure?” window is displayed, click **Register later**.
20. In the Finish Updates Setup window, click **Forward**.
21. Set your user name and password and then click **Forward**.
22. Set your time and date and then click **Forward**.
23. In the Kdump window, select **Enable kdump** if you want to enable kdump, and then click **Finish** to complete the installation.

    Note: When prompted to restart the server, click **Continue** or **Yes**.
24. Follow the instructions on the screen to log in to the operating system.

Installing the Red Hat Enterprise Linux 6.9 operating system

This topic provides instructions on how to install the following operating systems:

- RedHat Enterprise Linux 6.9 (x86)
- RedHat Enterprise Linux 6.9 (x64)

To install the Red Hat Enterprise Linux 6.9 operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. The Welcome to Red Hat Enterprise Linux 6.9! window is displayed. Click **Install system with basic video driver** and press Enter.
3. In the Disk Found window, click **Skip** and press Enter.

   Note: If the operating system is installed on the SAN card through iSCSI, the Networking Device window is displayed. Select the desired **Ethernet device**, and then click **OK**. In the Configure TCP/IP window, select the option according to the network environment. The following steps are based on the scenario that **Enable Ipv4 support->Dynamic IP configuration (DHCP)** is selected.

4. In the RED HAT window, click **Next**.
5. Select the language that you want to use during the installation process and click **Next**.
6. Select the appropriate keyboard layout for the system and click **Next**.
7. Select the type of devices that are involved in the installation, and then click **Next**.

   Note: If the Storage Device Warning window is displayed, click **Yes, discard any data**. If the message displays as "At least one existing installation has been detected on your system. What would you like to do?", select the option as you desired and then click **Next**.
8. Type a name for your server. Then click **Next**.
9. Specify your time zone by selecting the nearest city in your time zone. Then click **Next**.
10. Personalize the server by typing the root password for the root user account. Then click **Next**.

    Note: If a message prompts you that the password is weak, click **Use Anyway**.
11. In the "Which type of the installation would you like?" window, select your desired option. The following steps are based on the scenario that **Create Custom Layout** is selected in this step and click **Next**.
12. In the Please Select A Device window, do one of the following to create a partition and then click **Next**.
    - Manually create a root partition (*/*)

      To create a root partition, do the following:
      a. Click **Create**. The Create Storage window is displayed.
      b. Select **Standard Partition** and then click **Create**.
      c. In the Add Partition window, select the forward slash **(/)** from the **Mount Point** drop-down list box.
      d. Select **Ext4** from the **File System Type** drop-down list box.
      e. In the Allowable Drives window, select the hard disk drive on which you want to install the operating system.
      f. Type the amount of space (in MB) in the New Partitions Size window and then click **OK**.
    - Manually create a boot partition (**/boot** in legacy mode) or (**/boot/efi** in UEFI mode)

      To create a boot partition, do the following:
      a. Click **Create**. The Create Storage window is displayed.
      b. Select **Standard Partition** and then click **Create**.
      c. In the Add Partition window, select **/boot** (or select **/boot/efi** in UEFI mode) from the **Mount Point** drop-down list box.
      d. Select **Ext4** (or select **EFI System Partition** in UEFI mode) from the **File System Type** drop-down list box.
      e. In the Allowable Drives window, select the storage device on which you want to install the operating system.
      f. Type the amount of space (in MB) in the New Partitions Size window and then click **OK**.
    - Manually create a swap partition

      To create a swap partition, do the following:
      a. Click **Create**. The Create Storage window is displayed.
      b. Select **Standard Partition** and then click **Create**.
      c. In the Add Partition window, select **Swap** from the **File System Type** drop-down list box.
      d. In the Allowable Drives window, select the hard disk drive on which you want to install the operating system.
      e. Type the amount of space (in MB) in the New Partitions Size window and then click **OK**.

Go back to the Partitioner window, the created root partition, boot partition, and swap partition are displayed. Click **Next**. The drive partition is finished.

13. In the Format Warnings window, click **Format** to format the hard disk drive.
14. In the “Writing storage configuration to disk” window, click **Write changes to disk**.
15. In the “Boot loader operating system list” window, click **Next**.
16. The default installation is a basic server installation. You can customize your server by selecting a different set of software from the software list or adding additional repositories that you want to use for the software installation. Select **Customize now**. Then, click **Next**. The installation process begins.

    Notes:

    - If a warning window is displayed, select the option of your choice and then continue with the installation.
    - If you install the operating system in the UEFI mode, ensure that the `tboot-1.7.4-1.el6.x86_64 - Performs a verified launch using Intel TXT` package is not selected.
17. After the installation is completed, click **Reboot** to restart your server.

Installing the Red Hat Enterprise Linux 7 operating system

This topic provides instructions on installing the Red Hat Enterprise Linux 7 (x64) operating system

To install the Red Hat Enterprise Linux 7 (x64) operating system, do the following:

1. Download the drivers from the Lenovo Web site. Unzip the drivers if necessary. Then, copy the drivers to a USB storage device or burn the drivers to a disc.
2. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
3. Select **Install Red Hat Enterprise Linux 7.0** and press Enter.
4. Select the language that you want to use during the installation process and click **Continue**.
5. Configure the date, time, language, and keyboard layout for the system.
6. In the INSTALLATION SUMMARY window, click **SOFTWARE SELECTION**, and then select the software that you want to install.

   Note: The following steps are based on the scenario that you select **Server with GUI**, select all of the options on the right pane, and click **Done**.
7. In the INSTALLATION SUMMARY window, click **INSTALLATION DESTINATION**.
8. Select the drive partition on which you want to install the operating system. Then, click **Done**. If you want to create a partition manually, do the following:
   a. Select **I will configure partitioning** and then click **Done**.
   b. In the Manual Partitionning window, select **Standard Partition**. Then, do one of the following to create a partition and click **Done**.
      - Manually create a root partition (/)

        To create a root partition, do the following:
        1) In the Manual Partitionning window, click **+** in the bottom left corner.
        2) In the ADD A NEW MOUNT POINT window, select the forward slash **(/)** from the **Mount Point** drop-down list box.
        3) Type the amount of space (in MB) in the Desired Capacity field and then click **Add mount point**.

- Manually create a boot partition (/boot)

  To create a boot partition, do the following:

  1) In the Manual Partitionning window, click **+** in the bottom left corner.
  2) In the ADD A NEW MOUNT POINT window, select **/boot** (or **/boot/efi** in the UEFI mode) from the **Mount Point** drop-down list box.
  3) Type the amount of space (in MB) in the Desired Capacity field and then click **Add mount point**.

- Manually create a swap partition

  To create a swap partition, do the following:

  1) In the Manual Partitionning window, click **+** in the bottom left corner.
  2) In the ADD A NEW MOUNT POINT window, select **swap** from the **Mount Point** drop-down list box.
  3) Type the amount of space (in MB) in the Desired Capacity field and then click **Add mount point**.

c. In the SUMMARY OF CHANGES window, select **Accept Changes**.

9. In the INSTALLATION SUMMARY window, click **Begin Installation**. The installation process begins.
10. In the CONFIGURATION window, click **ROOT PASSWORD** to set the root password. Then, click **Reboot**.
11. In the INITIAL SETUP window, click **LICENSE INFORMATION**.
12. In the LICENSE INFORMATION window, select **I accept the license agreement** and click **Done**.
13. In the INITIAL SETUP window, click **Finish Configuration**.
14. In the Kdump window, click **Forward**.
15. In the “Subscription Management Registration” window, select **No, I prefer to register at a later time** and click **Finish**.
16. Configure the language and click **Next → Next**.
17. Set your user name and the password (if needed) and click **Next**.
18. Select the location as you need and click **Next**.
19. Select **Start using Red Hat Enterprise Linux Server** to log in to the operating system.

    Note: The local account is used by default when logging in to the operating system for the first time. Log out and then log in to Root.

Installing the Red Hat Enterprise Linux 7.1 operating system

This topic provides instructions on installing the Red Hat Enterprise Linux 7.1 (x64) operating system.

To install the Red Hat Enterprise Linux 7.1 (x64) operating system, do the following:

1. Download the drivers from the Lenovo Web site at http://www.lenovo.com/drivers. Unzip the drivers if necessary. Then, copy the drivers to a USB storage device or burn the drivers to a disc.
2. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
3. Select **Install Red Hat Enterprise Linux 7.1** and press Enter.
4. Select the language that you want to use during the installation process and click **Continue**.
5. Configure the date, time, language, and keyboard layout for the system.

6. In the INSTALLATION SUMMARY window, click **SOFTWARE SELECTION**, and then select the software that you want to install.

   Note: The following steps are based on the scenario that you select **Server with GUI**, select all of the options on the right pane, and click **Done**.

7. In the INSTALLATION SUMMARY window, click **INSTALLATION DESTINATION**.
8. Select the drive partition on which you want to install the operating system. Then, click **Done**. If you want to create a partition manually, do the following:
   a. Select **I will configure partitioning** and then click **Done**.
   b. In the Manual Partitioning window, select a partitioning scheme (select **Standard Partition** in the UEFI mode). Then, do one of the following to create a partition and click **Done**.
      - Manually create a root partition (/)

        To create a root partition, do the following:

        1) In the Manual Partitioning window, click **+** in the bottom left corner.
        2) In the ADD A NEW MOUNT POINT window, select the forward slash **(/)** from the **Mount Point** drop-down list box.
        3) Type the amount of space (in MB) in the Desired Capacity field and then click **Add mount point**.

      - Manually create a boot partition (/boot)

        To create a boot partition, do the following:

        1) In the Manual Partitioning window, click **+** in the bottom left corner.
        2) In the ADD A NEW MOUNT POINT window, select **/boot** (or **/boot/efi** in the UEFI mode) from the **Mount Point** drop-down list box.
        3) Type the amount of space (in MB) in the Desired Capacity field and then click **Add mount point**.

      - Manually create a swap partition

        To create a swap partition, do the following:

        1) In the Manual Partitioning window, click **+** in the bottom left corner.
        2) In the ADD A NEW MOUNT POINT window, select **swap** from the **Mount Point** drop-down list box.
        3) Type the amount of space (in MB) in the Desired Capacity field and then click **Add mount point**.

   c. In the SUMMARY OF CHANGES window, select **Accept Changes**.
9. In the INSTALLATION SUMMARY window, click **Begin Installation**. The installation process begins.
10. In the CONFIGURATION window, click **ROOT PASSWORD** to set the root password. Then, click **Reboot**.
11. In the INITIAL SETUP window, click **LICENSE INFORMATION**.
12. In the LICENSE INFORMATION window, select **I accept the license agreement** and click **Done**.
13. In the INITIAL SETUP window, click **Finish Configuration**.
14. In the Kdump window, click **Forward**.
15. In the “Subscription Management Registration” window, select **No, I prefer to register at a later time** and click **Finish**.
16. Configure the language and click **Next → Next**.
17. Set your user name and the password (if needed) and click **Next**.

18. Select the location as you need and click **Next**.
19. Select **Start using Red Hat Enterprise Linux Server** to log in to the operating system.

    Note: The local account is used by default when logging in to the operating system for the first time. Log out and then log in to Root.

Installing the Red Hat Enterprise Linux 7.2 operating system

This topic provides instructions on installing the Red Hat Enterprise Linux 7.2 (x64) operating system.

To install the Red Hat Enterprise Linux 7.2 operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. In the Welcome window, select **Install RedHat Enterprise Linux 7.2** and press Enter.
3. When “What language would you like to ...” is displayed, select a required language (for example, English) and click **Continue**.
4. In the Installation Summary window, set **Date&Time**, **Language Support**, **Keyboard**, **Security Policy**, and **Installation Source**. The following steps are based on the scenario that the default settings are used in this step.
5. In the Installation Summary window, click **Software Selection** and select software packages to be installed. The following steps are based on the scenario that **Server with GUI** is selected and all items in the right pane are selected. Then click **Done**.
6. In the Installation Summary window, click **Installation Destination**.
7. In the Installation Destination window, select a hard disk drive from **Local Standard Disks** for installing the operating system, and click **Done**.

   Notes: If you want to create a drive partition, select **I will configure partitioning** and click **Done**. In the **Manual Partitionining** window, do one of the following to create a required drive partition:

   - Manually create a root partition (/)
     a. In the **Manual Partitioning** window, click **+** in the bottom left corner.
     b. In the Add a New Mount Point window, select forward slash (**/**) from the **Mount Point** drop-down list.
     c. Type the amount of space (for example, 80 GB) in the **Desired Capacity** field.
     d. Click **Add mount point**.
   - Manually create a boot partition (/boot in legacy mode or /boot/efi in UEFI mode)
     a. In the **Manual Partitioning** window, click **+** in the bottom left corner.
     b. In the Add a New Mount Point window, select **/boot** (or **/boot/efi** in UEFI mode) from the **Mount Point** drop-down list.
     c. Type the amount of space (for example, 2 GB) in the **Desired Capacity** field.
     d. Click **Add mount point**.
   - Manually create a swap partition
     a. In the **Manual Partitioning** window, click **+** in the bottom left corner.
     b. In the Add a New Mount Point window, select **swap** from the **Mount Point** drop-down list.
     c. Type the amount of space (for example, 2 GB) in the **Desired Capacity** field.
     d. Click **Add mount point**.

Verify that the created drive partition is correct and click **Done**. In the Summary of Changes window, click **Accept Changes**.

8. In the Installation Summary window, click **Begin Installation** to start installing the operating system.
9. In the Configuration window, click **Root Password** to set the root password.
10. When file copying is completed, click **Reboot**.
11. In the Initial Setup window, click **License Information**.
12. Select **I accept the license agreement** and click **Done**.
13. In the Initial Setup window, click **Finish Configuration**.
14. In the Welcome window, select a required language (for example, English) and click **Next**.
15. In the Typing window, select a specific language type (for example, English US) and click **Next**.
16. In the Time Zone window, set the time zone and click **Next**.
17. In the About You window, set the user name and click **Next**.
18. In the Password window, set the password and click **Next**.

    Note: The password is optional. Click **Next** if you do not want to set a password.
19. In the Ready to Go window, click **Start using Red Hat Enterprise Linux Server**.

    Note: By default, the local account is used to log in to the operating system for the first time. Log out and use the root account to log in to the operating system again.

Installing the Red Hat Enterprise Linux 7.3 operating system

This topic provides instructions on installing the Red Hat Enterprise Linux 7.3 (x64) operating system.

To install the Red Hat Enterprise Linux 7.3 operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device, and start the server from the optical drive.
2. In the Welcome window, select **Install RedHat Enterprise Linux 7.3** and press Enter.
3. When “What language would you like to ...” is displayed, select a required language (for example, English) and click **Continue**.
4. In the Installation Summary window, set **Date&Time**, **Language Support**, **Keyboard**, **Security Policy**, and **Installation Source**. The following steps are based on the scenario that the default settings are used in this step.
5. In the Installation Summary window, click **Software Selection** and select software packages to be installed. The following steps are based on the scenario that **Server with GUI** is selected and all items in the right pane are selected. Then click **Done**.
6. In the Installation Summary window, click **Installation Destination**.
7. In the Installation Destination window, select a storage device from **Local Standard Disks** for installing the operating system, and click **Done**.

   Notes: If you want to create a drive partition, select **I will configure partitioning** and click **Done**. In the Manual Partitioning window, do one of the following to create a required drive partition:

   - Manually create a root partition (/)
     a. In the Manual Partitioning window, click **+** in the bottom left corner.
     b. In the Add a New Mount Point window, select forward slash (**/**) from the **Mount Point** drop-down list.
     c. Type the amount of space (for example, 80 GB) in the **Desired Capacity** field.

d. Click **Add mount point**.
e. Change **Device Type** to **Standard Partition**.

- Manually create a boot partition (/boot)
  a. In the Manual Partitioning window, click **+** in the bottom left corner.
  b. In the Add a New Mount Point window, select **/boot** from the **Mount Point** drop-down list.
  c. Type the amount of space (for example, 2 GB) in the **Desired Capacity** field.
  d. Click **Add mount point**.
- Manually create a swap partition
  a. In the Manual Partitioning window, click **+** in the bottom left corner.
  b. In the Add a New Mount Point window, select **swap** from the **Mount Point** drop-down list.
  c. Type the amount of space (for example, 2 GB) in the **Desired Capacity** field.
  d. Click **Add mount point**.

Verify that the created drive partition is correct and click **Done**. In the Summary of Changes window, click **Accept Changes**.

8. In the Installation Summary window, click **Begin Installation** to start installing the operating system.
9. In the Configuration window, click **Root Password** to set the root password.
10. When file copying is completed, click **Reboot**.
11. In the Initial Setup window, click **License Information**.
12. Select **I accept the license agreement** and click **Done**.
13. In the Initial Setup window, click **Finish Configuration**.
14. In the Welcome window, select a required language (for example, English) and click **Next**.
15. In the Typing window, select a specific language type (for example, English US) and click **Next**.
16. In the Time Zone window, set the time zone and click **Next**.
17. In the Online Accounts window, select your desired online account.

    Note: Online Accounts is optional. Click **Skip** if you do not want to select an online account.
18. In the About You window, set the user name and click **Next**.
19. In the Password window, set the password and click **Next**.

    Note: The password is optional. Click **Next** if you do not want to set a password.
20. In the Ready to Go window, click **Start using Red Hat Enterprise Linux Server**.

    Note: By default, the local account is used to log in to the operating system for the first time. Log out and use the root account to log in to the operating system again.

Installing the Red Hat Enterprise Linux 7.4 operating system

This topic provides instructions on installing the Red Hat Enterprise Linux 7.4 (x64) operating system.

To install the Red Hat Enterprise Linux 7.4 operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device, and start the server from the optical drive.
2. In the Welcome window, select **Install RedHat Enterprise Linux 7.4** and press Enter.
3. When “What language would you like to ...” is displayed, select a required language (for example, English) and click **Continue**.

4. In the Installation Summary window, set **Date&Time**, **Language Support**, **Keyboard**, **Security Policy**, and **Installation Source**. The following steps are based on the scenario that the default settings are used in this step.
5. In the Installation Summary window, click **Software Selection** and select software packages to be installed. The following steps are based on the scenario that **Server with GUI** is selected and all items in the right pane are selected. Then click **Done**.
6. In the Installation Summary window, click **Installation Destination**.
7. In the Installation Destination window, select a storage device from **Local Standard Disks** for installing the operating system, and click **Done**.

   Notes: If you want to create a drive partition, select **I will configure partitioning** and click **Done**. In the Manual Partitioning window, do one of the following to create a required drive partition:

   - Manually create a root partition (/)
     a. In the Manual Partitioning window, click **+** in the bottom left corner.
     b. In the Add a New Mount Point window, select forward slash (**/**) from the **Mount Point** drop-down list.
     c. Type the amount of space (for example, 80 GB) in the **Desired Capacity** field.
     d. Click **Add mount point**.
     e. Change **Device Type** to **Standard Partition**.
   - Manually create a boot partition (**/boot** in legacy mode) or (**/boot/efi** in UEFI mode)
     a. In the Manual Partitioning window, click **+** in the bottom left corner.
     b. In the Add a New Mount Point window, select **/boot** (or select **/boot/efi** in UEFI mode) from the **Mount Point** drop-down list.
     c. Type the amount of space (for example, 2 GB) in the **Desired Capacity** field.
     d. Click **Add mount point**.
   - Manually create a swap partition
     a. In the Manual Partitioning window, click **+** in the bottom left corner.
     b. In the Add a New Mount Point window, select **Swap** from the **Mount Point** drop-down list.
     c. Type the amount of space (for example, 2 GB) in the **Desired Capacity** field.
     d. Click **Add mount point**.

   Verify that the created drive partition is correct and click **Done**. In the Summary of Changes window, click **Accept Changes**.
8. In the Installation Summary window, click **Begin Installation** to start installing the operating system.
9. During the installation, in the Configuration window, click **Root Password** to set the root password and then click **Done**.
10. When the installation is completed, in the Configuration window, click **Reboot**.
11. In the Initial Setup window, click **License Information**.
12. Select **I accept the license agreement** and click **Done**.
13. In the Initial Setup window, click **Finish Configuration**.
14. In the Welcome window, select a required language (for example, English) and click **Next**.
15. In the Typing window, select a specific language type (for example, English US) and click **Next**.
16. In the Privacy window, set the location services as you are desired and click **Next**.
17. In the Time Zone window, set the time zone and click **Next**.
18. In the Online Accounts window, select your desired online account.

Note: Online Accounts is optional. Click **Skip** if you do not want to select an online account.

19. In the About You window, set the user name and click **Next**.
20. In the Password window, set the password and click **Next**.

    Note: The password is optional. Click **Next** if you do not want to set a password.

21. In the Ready to Go window, click **Start using Red Hat Enterprise Linux Server**.

    Note: By default, the local account is used to log in to the operating system for the first time. Log out and use the root account to log in to the operating system again.

Installing the SUSE Linux Enterprise Server 11 (x64) operating system with Service Pack 3

To install the SUSE Linux Enterprise Server 11 (x64) operating system with Service Pack 3, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. Select **Installation** and press Enter.
3. Select your language and then select **I Agree to the license terms**. Click **Next**.

   Note: If prompted, click **Yes**.

4. In the Media Check window, click **Next**.
5. In the Installation Mode window, select **New Installation**, and click **Next**.
6. Configure your region and time zone, and then click **Next**.
7. In the Server Base Scenario window, select **Physical Machine (also for Fully Virtualized Guests)**, and then click **Next**.
8. When the Installation Settings window is displayed, create a drive partition as you need.
   - Manually create a root partition (/)

     To create a root partition, do the following:

     a. Click **Partitioning** and select **Custom Partitioning (for experts)**. Then, click **Next**.

     b. In the Expert Partitioner window, select **Hard Disks** in the **System View** area. Select the hard disk drive on which you want to install the operating system and then click **Add**.

     c. Select **Primary Partition**, and then click **Next**.

     d. Select **Custom Size** and type the amount of space (in MB or GB) in the **Size** field. Then, click **Next**.

     e. In the **Formatting Options** area, select **Ext3** from the **File system** drop-down list box.

     f. In the **Mount partition** area, select the forward slash **(/)** from the **Mount Point** drop-down list box.

     g. Click **Finish**.

   - Manually create a boot partition (/boot)

     To create a boot partition, do the following:

     a. In the Expert Partitioner window, select **Hard Disks** in the **System View** area. Select the hard disk drive on which you want to install the operating system and then click **Add**.

     b. Select **Primary Partition**, and then click **Next**.

     c. Select **Custom Size** and type the amount of space (in MB or GB) in the **Size** field. Then, click **Next**.

     d. In the **Formatting Options** area, select **Ext3** (or **FAT** in UEFI mode) from the **File system** drop-down list box.

e. In the **Mount partition** area, select **/boot** (or **/boot/efi** in UEFI mode) from the **Mount Point** drop-down list box.

f. Click **Finish**.

- Manually create a swap partition

  To create a swap partition, do the following:

  a. In the Expert Partitioner window, select **Hard Disks** in the **System View** area. Select the hard disk drive on which you want to install the operating system and then click **Add**.

  b. Select **Primary Partition**, and then click **Next**.

  c. Select **Custom Size** and type the amount of space (in MB or GB) in the **Size** field. Then, click **Next**.

  d. In the **Formatting Options** area, select **Swap** from the **File system** drop-down list box.

  e. In the **Mount partition** area, select **Swap** from the **Mount Point** drop-down list box.

  f. Click **Finish**.

9. In the Expert Partitioner window, ensure that the drive partition is correct, and click **Accept**.

   Note: If prompted, click **Yes**.

10. In the Installation Settings window, click **Software** to select your desired software programs, and then click **OK → Accept**.
11. Click **Install** to install the software programs that you have selected.

    Note: If prompted, configure the settings as you need and click **Install**.

12. The setup process continues after the server restarts. Set your root user password. Then, click **Next → Yes**.

    Note: The password must contain at least six characters, and consist of uppercase letters, lowercase letters, and digits.

13. Set your host name and domain name. Then, click **Next**.
14. Configure your network in the Network Configuration window. Then, click **Next**.
15. In the Test Internet Connection window, configure the setting as you need. Then, click **Next**.
16. In the “Network Services Configuration” window, click **Next**.

    Note: If the CA Management error occurs, select **Do Not Create CA and Certificate**, and click **Next → Yes**.

17. In the “User Authentication Method” window, configure the settings as you need. Then, click **Next**.
18. In the New LDAP User window, configure the settings as you need and click **Next → Yes**.
19. In the Release Notes window, click **Next**.
20. In the Hardware Configuration window, click **Next**.
21. In the Installation Completed window, click **Finish**.

    Note: If prompted, click **Continue**.

22. Follow the instructions on the screen to log in to the operating system.

Installing the SUSE Linux Enterprise Server 11 operating system with Service Pack 4

This topic provides instructions on how to install the following operating system:

- SUSE Linux Enterprise Server 11 SP4 (x86)
- SUSE Linux Enterprise Server 11 SP4 (x64)

To install the SUSE Linux Enterprise Server 11 operating system with Service Pack 4, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. In the SUSE Linux Enterprise Server window, select **Installation**.
3. In the Welcome window, select your language and keyboard layout and then select **I Agree to the License Terms**. Click **Next**.

   Note: If “you are running...” window is prompted, click **Yes**.
4. In the Media Check window, click **Next** to go ahead.
5. In the Installation Mode window, select **New Installation**, and then click **Next**.
6. Verify your region and time zone, and then click **Accept → Next**.
7. In the Server Base Scenario window, select **Physical Machine(Also for Fully Virtualized Guests)** and then click **Next**.
8. When the Installation Settings window is displayed, create a drive partition as you need.
   - Manually create a root partition (/)

     To create a root partition, do the following:

     a. Click **Partitioning** and select **Custom Partition (for experts)**. Click **Next**.
     b. In the Expert Partitioner window, select **Hard Disks**, and then click **Add**.
     c. In the New Partitions Size window, select **Custom Size**.
     d. Type the amount of space (in MB) in the **Custom Size** field and then click **Next**.
     e. In the **Format partition** area, select **Ex3** from the **File system** drop-down list box.
     f. In the **Mount partition** area, select the forward slash **(/)** from the **Mount Point** drop-down list box.
     g. Click **Finish**.
   - Manually create a boot partition (**/boot** in legacy mode) or (**/boot/efi** in UEFI mode)

     To create a boot partition, do the following:

     a. In the Expert Partitioner window, select **Hard Disks**, and then click **Add**.
     b. In the New Partition Type window, select **Primary Partition** and then click **Next**.
     c. In the New Partitions Size window, select **Custom Size**.
     d. Type the amount of space (in MB) in the **Custom Size** field and then click **Next**.
     e. In the **Formatting Options** area, select **Ex3** (or **FAT** in UEFI mode) from the **File System** drop-down list box.
     f. In the **Mount partition** area, select the forward dash **/boot** (or **/boot/efi** in UEFI mode) from the **Mount Point** drop-down list box.
     g. Click **Finish**.
   - Manually create a swap partition

     To create a swap partition, do the following:

     a. In the Expert Partitioner window, select **Hard Disks**, and then click **Add**.
     b. In the New Partitions Size window, select **Custom Size**.
     c. Type the amount of space (in MB) in the **Custom Size** field.
     d. In the **Formatting Options** area, select **Swap** from the **File system** drop-down list box.
     e. In the **Mount partition** area, select **Swap** from the **Mount Point** drop-down list box.
     f. Click **Finish**.

Go to the Expert Partitioner window, the created root partition, boot partition, and swap partition are displayed. Click **Accept**. The drive partition is finished.

9. In the Installation Settings window, click **Software** to select your desired software programs, and then click **OK**. If the YaST window is displayed, click **Accept**.
10. Click **Install** to install the software programs that you have selected.

    Notes:

    - If a Warning window is displayed, select the option you desired. the following steps are based on the scenario that **Ignore this conflict of ...** is selected. Do the following:
      a. Click **OK-TryAgain**.
      b. In the YaST window, click **Accept**.
      c. In the Installation Settings window, click **Install** to begin the installation.
    - If the YaST2 window is displayed, click **Install** to begin the installation.
11. When the installation process is completed, the server will restart automatically.
12. The setup process continues after the server restarts. Set your root user password. Then select **Next**. When the YaST2 window is displayed, click **Yes**.

    Note: The password is optional and must contain at least six characters and consist of upper case letters, lower case letters, and numbers.
13. Set your host name and domain name in the Hostname and Domain Name window. Then click **Next**.
14. Configure your network in the Network Configuration window. Then click **Next**.

    Note: If the Test Internet Connection window is displayed, configure the settings you need. Then click **Next**.
15. In the Network Services Configuration window, click **Next**.

    Note: If CA Management error occurs, select “Do Not Create CA and Certificate” and click **Next**. If Error window is displayed, click **Yes**.
16. In the User Authentication Method window, configure the settings you need. Then click **Next**.
17. In the New LDAP User window, configure the settings you need. Then click **Next → Yes**.
18. In the Release Notes window, click **Next**.
19. In the Hardware Configuration window, click **Next**.
20. In the Installation Completed window, click **Finish**.

    Note: If the YaST2 window is displayed, click **Continue**.
21. Follow the instructions on the screen to log in to the operating system.

Installing the SUSE Linux Enterprise Server 12.1 operating system

This topic provides instructions on installing the SUSE Linux Enterprise Server 12.1 operating system (x64).

To install the SUSE Linux Enterprise Server 12.1 operating system (x64), do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device, and start the server from the optical drive.
2. In the Language, Keyboard and License Agreement window, select your language and keyboard layout and then select **I Agree to the License Terms**. Click **Next**.
3. In the Network Settings window, configure the network settings and click **Next**.

4. In the Registration window, configure the information as prompted and click **Next**. The following steps are based on the scenario that **Skip Registration** is selected in this step.
5. In the Add On Product window, select add-ons to be installed and click **Next**. The following steps are based on the scenario that default options are selected in this step.
6. In the Suggested Partitioning window, use the suggested partitioning method and click **Next**. If you want to create a drive partition, do one of the following:
   - Manually create a root partition (/)
     a. Click **Create Partition Setup** and select **Custom Partitioning (for experts)**. Click **Next**.
     b. In the Expert Partitioner window, select **Hard Disks** from **System view**. Then select the disk (for example, **sda**) for installing the operating system and click **Add**.
     c. In the New Partition Type window, select **Primary Partition** (for legacy mode only).
     d. In the New Partitions Size window, select **Custom Size**.
     e. Type the amount of space (for example, 80 GB) in the **Custom Size** field and then click **Next**.
     f. Select **Operating System** from **Role**.
     g. In the **Formatting Options** area, select **BtrFS** from the **File system** drop-down list box.
     h. In the **Mount partition** area, select the forward slash **(/)** from the **Mount Point** drop-down list box.
     i. Click **Finish**.
   - Manually create a boot partition (/boot in legacy mode or /boot/efi in UEFI mode)
     a. In the Expert Partitioner window, select **Hard Disks** from **System view**. Then select the disk (for example, **sda**) for installing the operating system and click **Add**.
     b. In the New Partition Type window, select **Primary Partition** (for legacy mode only).
     c. In the New Partitions Size window, select **Custom Size**.
     d. Type the amount of space (for example, 2 GB) in the **Custom Size** field and then click **Next**.
     e. Select **Operating System** from **Role**.
     f. In the **Formatting Options** area, select **Ext4** (or **FAT** in UEFI mode) from the **File System** drop-down list box.
     g. In the **Mounting partition** area, select **/boot** (or **/boot/efi** in UEFI mode) from the **Mount Point** drop-down list box.
     h. Click **Finish**.
   - Manually create a swap partition
     a. In the Expert Partitioner window, select **Hard Disks** from **System view**. Then select the disk (for example, **sda**) for installing the operating system and click **Add**.
     b. In the New Partition Type window, select **Primary Partition** (for legacy mode only).
     c. In the New Partitions Size window, select **Custom Size**.
     d. Type the amount of space (for example, 2 GB) in the **Custom Size** field.
     e. Select **Swap** from **Role** and click **Next**.
     f. In the **Format partition** area, select **Swap** from the **File system** drop-down list box.
     g. In the **Mount partition** area, select **Swap** from the **Mount Point** drop-down list box.
     h. Click **Finish**.

     Go to the Expert Partitioner window. The created root partition, boot partition, or swap partition is displayed in the window. Ensure that the created partition is correct and click **Accept**. Then, click **Next**.
7. In the Clock and Time Zone window, set the time zone and time and click **Next**.

For example, set **Region** to **Asia** and set **TimeZone** to **Beijing**. Clear the **Hardware Clock Set to UTC** check box and set the time to local time. If “Do you want to continue with your selection (local time)?” is displayed, click **Continue**.

8. In the Create New User window, set a user name and password, and then click **Next**.

   Note: If the “Really use this password?” window is displayed, change the password according to your need or click **Yes** to keep the current password.

9. In the “Password for the System Administrator–root” window, set a root password and click **Next**.

   Note: If the “Really use this password?” window is displayed, change the password according to your need or click **Yes** to keep the current password.

10. In the Installation Settings window, click **Software** to select software applications to be installed.

    For example, if you want to install all software, do the following:

    a. Click **Software**.

    b. In the Software Selection and System Tasks window, right-click any software application and choose **All in This List-Install**.

    c. Click **OK → Install**. If the Confirm Installation window is displayed, click **Install**.

11. The system will restart after the installation is finished.

Installing the SUSE Linux Enterprise Server 12.2 operating system

This topic provides instructions on installing the SUSE Linux Enterprise Server 12.2 operating system (x64).

To install the SUSE Linux Enterprise Server 12.2 operating system (x64), do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device, and start the server from the optical drive.
2. Select **Installation** and configure the network settings. The following steps are based on the scenario that **No** is selected in this step.
3. Click **OK**. In the “Language, Keyboard and License Agreement” window, select your language and keyboard layout and then select **I Agree to the License Terms**. Click **Next**.
4. In the Network Settings window, configure the network settings and click **Next**. The following steps are based on the scenario that default options are selected in this step.
5. In the Registration window, configure the information as prompted and click **Next**. The following steps are based on the scenario that **Skip Registration** is selected in this step. Select **OK** in the Warning window.
6. In the Add On Product window, select add-ons to be installed and click **Next**. The following steps are based on the scenario that default options are selected in this step.
7. In the System Role window, select **Default System** and then select **Next**.
8. In the Suggested Partitioning window, use the suggested partitioning method and click **Next**. If you want to create a drive partition, do one of the following:

   - Manually create a root partition (/)

     a. Click **Create Partition Setup** and select **Custom Partitioning (for experts)**. Click **Next**.

     b. In the Expert Partitioner window, select **Hard Disks** from **System view**. Then select the disk (for example, **sda**) for installing the operating system and click **Add**. Select the default partition type, then click **Next**.

     c. In the New Partitions Size window, select **Custom Size**.

     d. Type the amount of space (for example, 80 GB) in the **Custom Size** field and then click **Next**.

e. Select **Operating System** from **Role**.

f. In the **Formatting Options** area, select **BtrFS** from the **File system** drop-down list box.

g. In the **Mount partition** area, select the forward slash **(/)** from the **Mount Point** drop-down list box.

h. Click **Finish**.

- Manually create a boot partition (/boot)

  a. In the Expert Partitioner window, select **Hard Disks** from **System view**. Then select the disk (for example, **sda**) for installing the operating system and click **Add**. Select the default partition type, then click **Next**.

  b. In the New Partitions Size window, select **Custom Size**.

  c. Type the amount of space (for example, 2 GB) in the **Custom Size** field and then click **Next**.

  d. Select **Operating System** from **Role**.

  e. In the **Formatting Options** area, select **Ext4** from the **File System** drop-down list box.

  f. In the **Mounting partition** area, select **/boot** from the **Mount Point** drop-down list box.

  g. Click **Finish**.

- Manually create a swap partition

  a. In the Expert Partitioner window, select **Hard Disks** from **System view**. Then select the disk (for example, **sda**) for installing the operating system and click **Add**. Select the default partition type, then click **Next**.

  b. In the New Partitions Size window, select **Custom Size**.

  c. Type the amount of space (for example, 2 GB) in the **Custom Size** field.

  d. Select **Swap** from **Role** and click **Next**.

  e. In the **Format partition** area, select **Swap** from the **File system** drop-down list box.

  f. In the **Mount partition** area, select **Swap** from the **Mount Point** drop-down list box.

  g. Click **Finish**.

  Go to the Expert Partitioner window. The created root partition, boot partition, or swap partition is displayed in the window. Ensure that the created partition is correct and click **Accept**. Then, click **Next**.

9. In the Clock and Time Zone window, set the time zone and time and click **Next**.

   For example, set **Region** to **Asia** and set **TimeZone** to **Beijing**. Clear the **Hardware Clock Set to UTC** check box and set the time to local time. If “Do you want to continue with your selection (local time)?” is displayed, click **Continue**.

10. In the Create New User window, set a user name and password, and then click **Next**.

    Note: If the “Really use this password?” window is displayed, change the password according to your need or click **Yes** to keep the current password.

11. In the “Password for the System Administrator–root” window, set a root password and click **Next**.

    Note: If the “Really use this password?” window is displayed, change the password according to your need or click **Yes** to keep the current password.

12. In the Installation Settings window, click **Software** to select software applications to be installed.

    For example, if you want to install all software, do the following:

    a. Click **Software**.

    b. In the Software Selection and System Tasks window, select any software application and then right-click. Choose **All in This List-Install**.

    c. Click **OK → Install**. If the Confirm Installation window is displayed, click **Install**.

Installing the SUSE Linux Enterprise Server 12.3 operating system

This topic provides instructions on installing the SUSE Linux Enterprise Server 12.3 operating system (x64).

To install the SUSE Linux Enterprise Server 12.3 operating system (x64), do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device, and start the server from the optical drive.
2. When the SUSE Welcome window is displayed, select **Installation** and press Enter.
3. In the “Language, Keyboard and License Agreement” window, select your language and keyboard layout and then select **I Agree to the License Terms**. Click **Next**.
4. In the Network Settings window, select the network card to be used and click **Next**. The following steps are based on the scenario that default options are selected in this step.
5. In the Registration window, configure the information as prompted and click **Next**. The following steps are based on the scenario that **Skip Registration** is selected in this step. When the “Really skip the registration now?” window is displayed, select **Yes**.

   Note: If the Warning window is displayed, click **OK**.
6. In the Add On Product window, select add-ons to be installed and click **Next**. The following steps are based on the scenario that default options are selected in this step.
7. In the System Role window, select **Default System** and then click **Next**.
8. In the Suggested Partitioning window, use the suggested partitioning method and click **Next**. If you want to create a drive partition, do one of the following:
   - Manually create a root partition (/)
     a. In the Suggested Partitioning window, click **Create Partition Setup** and select **Custom Partitioning (for experts)**. Click **Next**.
     b. In the Expert Partitioner window, select **Hard Disks** from **System view**. Then select the disk (for example, **sda**) for installing the operating system and click **Add**. In the New Partition Type window, select **Primary Partition** and click **Next**.
     c. In the New Partitions Size window, select **Custom Size**.
     d. Type the amount of space (for example, 80 GB) in the **Custom Size** field and then click **Next**.
     e. Select **Operating System** from **Role**.
     f. In the **Formatting Options** area, select **BtrFS** from the **File system** drop-down list box.
     g. In the **Mount partition** area, select the forward slash **(/)** from the **Mount Point** drop-down list box.
     h. Click **Finish**.
   - Manually create a boot partition (**/boot** in legacy mode) or (**/boot/efi** in UEFI mode)
     a. In the Expert Partitioner window, select **Hard Disks** from **System view**. Then select the disk (for example, **sda**) for installing the operating system and click **Add**. In the New Partition Type window, select **Primary Partition** and click **Next**.
     b. In the New Partitions Size window, select **Custom Size**.
     c. Type the amount of space (for example, 2 GB) in the **Custom Size** field and then click **Next**.
     d. Select **Operating System** from **Role**.
     e. In the **Formatting Options** area, select **FAT** (or select **Ext4** in UEFI mode) from the **File System** drop-down list box.
     f. In the **Mounting partition** area, select **/boot** (or select **/boot/efi** in UEFI mode) from the **Mount Point** drop-down list box.

g. Click **Finish**.

- Manually create a swap partition
  a. In the Expert Partitioner window, select **Hard Disks** from **System view**. Then select the disk (for example, **sda**) for installing the operating system and click **Add**. In the New Partition Type window, select **Primary Partition** and click **Next**.
  b. In the New Partitions Size window, select **Custom Size**.
  c. Type the amount of space (for example, 2 GB) in the **Custom Size** field and click **Next**.
  d. Select **Swap** from **Role** and click **Next**.
  e. In the **Format partition** area, select **Swap** from the **File system** drop-down list box.
  f. In the **Mount partition** area, select **Swap** from the **Mount Point** drop-down list box.
  g. Click **Finish**.

  Go to the Expert Partitioner window. The created swap partition and root partition are displayed in the window. Ensure that the created partitions are correct and click **Accept**.

  Note: If the “Really use this setup?” window is displayed, click **Yes**.

9. In the Clock and Time Zone window, set the time zone and time and click **Next**.

   For example, set **Region** to **Asia** and set **TimeZone** to **Beijing**. Clear the **Hardware Clock Set to UTC** check box and set the time to local time. If the “Do you want to continue with your selection (local time)?” window is displayed, click **Continue**.

10. In the Create New User window, set a user name and password, and then click **Next**.

    Note: If the “Really use this password?” window is displayed, change the password according to your need or click **Yes** to keep the current password.

11. In the “Password for the System Administrator–root” window, set a root password and click **Next**.

    Note: If the “Really use this password?” window is displayed, change the password according to your need or click **Yes** to keep the current password.

12. In the Installation Settings window, click **Software** to select software applications to be installed.

    For example, if you want to install all software, do the following:

    a. Click **Software**.
    b. In the Software Selection and System Tasks window, select any software application and then right-click. Choose **All in This List-Install**.
    c. Click **OK → Install**. If the Confirm Installation window is displayed, click **Install**.
    d. In the “System will reboot now” window, click **OK** or restart the server to finish.

Installing the VMware ESXi hypervisor

This topic provides instructions on how to install

- VMware ESXi 5.1 Update 1
- VMware ESXi 5.1 Update 2
- VMware ESXi 5.5
- VMware ESXi 5.5 Update 1
- VMware ESXi 5.5 Update 2
- VMware ESXi 5.5 Update 3b
- VMware ESXi 6.0 Update 3

- VMware ESXi 6.5
- VMware ESXi 6.5 Update 1

To install the VMware ESXi hypervisor , do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive. Wait several minutes for the system to load the files.
2. When the “Welcome to the VMware ESXi ... Installation” window is displayed, press Enter.
3. When the “End User License Agreement (EULA)” window is displayed, press F11.
4. When the “Select a Disk to Install or Upgrade” window is displayed, press Enter.
5. Select a keyboard layout as you need, and then press Enter.
6. Set the root password and then press Enter.

   Notes:

   - The password must contain at least seven characters.
   - If you are installing the VMware ESXi 5.1 P5 and you do not want to set the password, press Enter.
7. When the Confirm Install window is displayed, press F11. The installation process starts.
8. When the Installation Complete window is displayed, press Enter. The server restarts. The operating system is installed successfully.

Chapter 4. Installing an operating system in UEFI mode

This chapter provides information about installing operating systems in UEFI mode.

Before installing an operating system in UEFI mode

Before installing an operating system in UEFI mode, do the following:

1. Perform the operations in Chapter 2 “Before installing an operating system” on page 3.
2. Start the Setup Utility program.
3. On the **Boot Manager** menu, select **Miscellaneous Boot Settings** and press Enter.
4. On the **Storage OpROM policy** menu, select **UEFI only**.

Installing a Microsoft Windows 7 operating system

This topic provides instructions on how to install the following operating systems:

- Microsoft Windows 7 Professional Edition (x64) with Service Pack 1
- Microsoft Windows 7 Ultimate Edition (x64) with Service Pack 1

To install the Microsoft Windows 7 Professional Edition (x64) with Service Pack 1, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Connect the USB storage device that contains the driver for the onboard SATA software RAID or installed RAID card to your server. Then, start the server from the optical drive.
2. If the message `Press any key to boot from cd` is displayed, press any key. If the message `Windows Setup [EMS Enabled]` is displayed, press Enter. Wait several minutes for the system to load the files.
3. If the Windows 7 installation window is displayed, configure the language and other options as you need and then click **Next**.
4. If prompted, click **Install now**.
5. Read the license terms and select **I accept the license terms**. Then, click **Next**.
6. If prompted, select the type of installation as you need. The following steps are based on the scenario that **Custom (Advanced)** is selected in this step.
7. In the “Where do you want to install Windows?” window, click **Load Driver**.
8. When the Load Driver window is displayed, browse to the folder where the driver is stored, and click **OK**. The “Select the driver to install” window is displayed
9. Select **Hide drivers that are not compatible with hardware on this computer**. Then, click **Next**.
10. In the “Where do you want to install Windows?” window, click **Drive options (advanced)**.
11. Select the hard disk drive on which you want to install the operating system, and then click **New**.
12. Type the amount of space (in MB), and then click **Apply**.
13. When the Install Windows dialog box is displayed, click **OK → Next**. The installation begins.

    Note: Your server will restart several times during the installation.
14. Type your user name and password when prompted.

    Note: The password must consist of uppercase letters, lowercase letters, and digits.

15. If the “Type your Windows product key” window is displayed, type your product key, deselect **Automatically activate Windows when I am online**, and then click **Next**. The product key information is available on the Microsoft Certificate of Authenticity label or product packaging.
16. If the “Help protect your computer and improve Windows automatically” window is displayed, click **Ask me later**.
17. When the “Review your time and date settings” window is displayed, click **Next**.
18. Follow the instructions on the screen to log in to the operating system.

To install the Microsoft Windows 7 Ultimate Edition (x64) with Service Pack 1, see “Installing a Microsoft Windows 7 operating system” on page 5.

Installing a Microsoft Windows 8 or Windows 8.1 operating system

This topic provides instructions on how to install the following operating systems:

- Microsoft Windows 8 (x64)
- Microsoft Windows 8 Professional Edition (x64)

To install a Microsoft Windows 8 operating system, see “Installing a Microsoft Windows 8 operating system” on page 6.

Installing a Microsoft Windows 8.1 operating system

This topic provides instructions on how to install the Windows 8.1 operating system.

To install a Microsoft Windows 8.1 operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. If the message `Press any key to boot from cd` is displayed, press any key. If the message `Windows Setup [EMS Enabled]` is displayed, press Enter. Wait several minutes for the system to load the files.
3. When the Windows 8 installation window is displayed, configure the language and other options as you need and then click **Next**.
4. Click **Install now**.
5. When the “Enter the product key to activate Windows” window is displayed, type your product key and then click **Next**. The product key information is available on the Microsoft Certificate of Authenticity label or product packaging.
6. Read the license terms and select **I accept the license terms**. Then, click **Next**.
7. Select the type of installation as you need. The following steps are based on the scenario that **Custom: Install Windows only (Advanced)** is selected in this step.

   Note: If you do not need to configure RAID on your server, go to step 12.
8. In the “Where do you want to install Windows?” window, click **Load drivers**.
9. Copy the folder that contains the driver to your USB storage device and connect the USB storage device to your server.
10. Click **Browse...** to locate the driver you want to install. Then click **OK**.
11. In the Select the driver to install window, select **Hide drivers that aren’t compatible with this computer’s hardware**.
12. Select the drivers you need and click **Next**.
13. Select the hard disk drive on which you want to install the operating system, and then click **New**.

14. Type the amount of space (in MB), and then click **Apply**.
15. When the Windows Setup dialog box is displayed, click **OK**.
16. Ensure that the drive partition is correct, and then click **Next**. The installation begins.

    Note: Your server will restart several times during the installation.
17. In the Personalize window, personalize your server as you need and click **Next**.
18. When the Settings window is displayed, configure the settings as you need.
19. When the "Your account" window is displayed, follow the instructions on the screen to configure the settings. Then, click **Finish** to log in to the operating system.

Installing a Microsoft Windows Server 2008 R2 (x64) operating system with Service Pack 1

This topic provides instructions on how to install the following operating systems:

- Microsoft Windows Server 2008 R2 Datacenter Edition (x64) with Service Pack 1
- Microsoft Windows Server 2008 R2 Enterprise Edition (x64) with Service Pack 1
- Microsoft Windows Server 2008 R2 Foundation Edition (x64) with Service Pack 1
- Microsoft Windows Server 2008 R2 Standard Edition (x64) with Service Pack 1

To install a Microsoft Windows Server 2008 R2 (x64) operating system with Service Pack 1, see "Installing a Microsoft Windows Server 2008 R2 (x64) operating system with Service Pack 1" on page 7.

Installing a Microsoft Windows Server 2012 operating system

This topic provides instructions on how to install the following operating systems:

- Microsoft Windows Server 2012 Datacenter Edition
- Microsoft Windows Server 2012 Foundation Edition
- Microsoft Windows Server 2012 Standard Edition

To install a Microsoft Windows Server 2012 operating system, see "Installing a Microsoft Windows Server 2012 operating system" on page 8.

Installing the Microsoft Windows Server 2012 Essentials operating system

To install the Windows Server 2012 Essentials operating system, see "Installing the Microsoft Windows Server 2012 Essentials operating system" on page 9.

Installing a Microsoft Windows Server 2012 R2 operating system

This topic provides instructions on how to install the following operating systems:

- Microsoft Windows Server 2012 R2 Datacenter Edition
- Microsoft Windows Server 2012 R2 Foundation Edition
- Microsoft Windows Server 2012 R2 Standard Edition

To install a Microsoft Windows Server 2012 R2 operating system, see "Installing a Microsoft Windows Server 2012 R2 operating system" on page 10.

Installing the Microsoft Windows Server 2012 R2 Essentials operating system

To install the Windows Server 2012 R2 Essentials operating system, see “Installing the Microsoft Windows Server 2012 R2 Essentials operating system” on page 11.

Installing the Microsoft Windows Server 2016 operating system

This topic provides instructions on how to install the following operating systems:

- Microsoft Windows Server 2016 Datacenter Edition
- Microsoft Windows Server 2016 Standard Edition

To install a Microsoft Windows Server 2016 operating system, see “Installing the Microsoft Windows Server 2016 operating system” on page 12.

Installing the Microsoft Windows Server 2016 Essentials operating system

To install the Microsoft Windows Server 2016 Essentials operating system, see “Installing the Microsoft Windows Server 2016 Essentials operating system” on page 13.

Installing the Microsoft Windows Storage Server 2012 Standard operating system

To install the Microsoft Windows Storage Server 2012 Standard operating system, see “Installing the Microsoft Windows Storage Server 2012 Standard operating system” on page 14.

Installing the Microsoft Windows Storage Server 2012 R2 Standard operating system

To install the Microsoft Windows Storage Server 2012 R2 Standard operating system, see “Installing the Microsoft Windows Storage Server 2012 R2 Standard operating system” on page 15.

Installing the Microsoft Windows Small Business Server 2011 Essentials

To install the Microsoft Windows Small Business Server 2011 Essentials, see “Installing the Microsoft Windows Small Business Server 2011 Essentials ” on page 16.

Installing the Microsoft Windows Small Business Server 2011 Standard operating system

To install the Microsoft Windows Small Business Server 2011 Standard operating system, see “Installing the Microsoft Windows Small Business Server 2011 Standard operating system” on page 17.

Installing the Microsoft Windows Small Business Server 2011 Premium Add-on operating system

To install the Microsoft Windows Small Business Server 2011 Premium Add-on operating system, see “Installing the Microsoft Windows Small Business Server 2011 Premium Add-on operating system” on page 18.

Installing the Microsoft Hyper-V Server 2012 R2 operating system

To install the Microsoft Hyper-V Server 2012 R2 operating system, see “Installing the Microsoft Hyper-V Server 2012 R2 operating system” on page 19.

Installing the Microsoft Hyper-V Server 2016 operating system

To install the Microsoft Hyper-V Server 2016 operating system, see “Installing the Microsoft Hyper-V Server 2016 operating system” on page 20.

Note: The driver for onboard USB 3.0 connectors is installed during the operating system installation.

Installing the Red Hat Enterprise Linux AS 6.5 operating system

To install the Red Hat Enterprise Linux AS 6.5 (x64) operating system, see “Installing the Red Hat Enterprise Linux AS 6.5 operating system” on page 20.

Installing the Red Hat Enterprise Linux 6.7 (x64) operating system

To install the Red Hat Enterprise Linux 6.7 (x64) operating system, see “Installing the Red Hat Enterprise Linux 6.7 operating system” on page 22.

Installing the Red Hat Enterprise Linux 6.8 operating system

To install the Red Hat Enterprise Linux 6.8 (x64) operating system, see “Installing the Red Hat Enterprise Linux 6.8 operating system” on page 24.

Installing the Red Hat Enterprise Linux 6.9 operating system

To install the Red Hat Enterprise Linux 6.9 operating system, see “Installing the Red Hat Enterprise Linux 6.9 operating system” on page 26.

Installing the Red Hat Enterprise Linux 7 operating system

To install the Red Hat Enterprise Linux 7 (x64) operating system, refer to “Installing the Red Hat Enterprise Linux 7 operating system” on page 28.

Installing the Red Hat Enterprise Linux 7.1 operating system

To install the Red Hat Enterprise Linux 7.1 (x64) operating system, refer to “Installing the Red Hat Enterprise Linux 7.1 operating system” on page 29.

Installing the Red Hat Enterprise Linux 7.2 operating system

To install the Red Hat Enterprise Linux 7.2 (x64) operating system, refer to “Installing the Red Hat Enterprise Linux 7.2 operating system” on page 31.

Installing the Red Hat Enterprise Linux 7.3 operating system

This topic provides instructions on installing the Red Hat Enterprise Linux 7.3 (x64) operating system.

To install the Red Hat Enterprise Linux 7.3 operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device, and start the server from the optical drive.
2. In the Welcome window, select **Install RedHat Enterprise Linux 7.3** and press Enter.
3. When “What language would you like to ...” is displayed, select a required language (for example, English) and click **Continue**.
4. In the Installation Summary window, set **Date&Time**, **Language Support**, **Keyboard**, **Security Policy**, and **Installation Source**. The following steps are based on the scenario that the default settings are used in this step.
5. In the Installation Summary window, click **Software Selection** and select software packages to be installed. The following steps are based on the scenario that **Server with GUI** is selected and all items in the right pane are selected. Then click **Done**.
6. In the Installation Summary window, click **Installation Destination**.
7. In the Installation Destination window, select a storage device from **Local Standard Disks** for installing the operating system, and click **Done**.

   Notes: If you want to create a drive partition, select **I will configure partitioning** and click **Done**. In the Manual Partitioning window, do one of the following to create a required drive partition:

   - Manually create a root partition (/)
     a. In the Manual Partitioning window, click **+** in the bottom left corner.
     b. In the Add a New Mount Point window, select forward slash (**/**) from the **Mount Point** drop-down list.
     c. Type the amount of space (for example, 80 GB) in the **Desired Capacity** field.
     d. Click **Add mount point**.
     e. Change **Device Type** to **Standard Partition**.
   - Manually create a boot partition (/boot/efi)
     a. In the Manual Partitioning window, click **+** in the bottom left corner.
     b. In the Add a New Mount Point window, select **/boot/efi** from the **Mount Point** drop-down list.
     c. Type the amount of space (for example, 2 GB) in the **Desired Capacity** field.
     d. Click **Add mount point**.
   - Manually create a swap partition
     a. In the Manual Partitioning window, click **+** in the bottom left corner.
     b. In the Add a New Mount Point window, select **swap** from the **Mount Point** drop-down list.
     c. Type the amount of space (for example, 2 GB) in the **Desired Capacity** field.
     d. Click **Add mount point**.

Verify that the created drive partition is correct and click **Done**. In the Summary of Changes window, click **Accept Changes**.

8. In the Installation Summary window, click **Begin Installation** to start installing the operating system.
9. In the Configuration window, click **Root Password** to set the root password.
10. When file copying is completed, click **Reboot**.
11. In the Initial Setup window, click **License Information**.
12. Select **I accept the license agreement** and click **Done**.
13. In the Initial Setup window, click **Finish Configuration**.
14. In the Welcome window, select a required language (for example, English) and click **Next**.
15. In the Typing window, select a specific language type (for example, English US) and click **Next**.
16. In the Time Zone window, set the time zone and click **Next**.
17. In the Online Accounts window, select your desired online account.

    Note: Online Accounts is optional. Click **Skip** if you do not want to select an online account.
18. In the About You window, set the user name and click **Next**.
19. In the Password window, set the password and click **Next**.

    Note: The password is optional. Click **Next** if you do not want to set a password.
20. In the Ready to Go window, click **Start using Red Hat Enterprise Linux Server**.

    Note: By default, the local account is used to log in to the operating system for the first time. Log out and use the root account to log in to the operating system again.

Installing the Red Hat Enterprise Linux 7.4 operating system

To install the Red Hat Enterprise Linux 7.4 (x64) operating system, see “Installing the Red Hat Enterprise Linux 7.4 operating system” on page 33.

Installing the SUSE Linux Enterprise Server 11 (x64) operating system with Service Pack 3

To install the SUSE Linux Enterprise Server 11 (x64) operating system with Service Pack 3, see “Installing the SUSE Linux Enterprise Server 11 (x64) operating system with Service Pack 3” on page 35.

Installing the SUSE Linux Enterprise Server 11 (x64) operating system with Service Pack 4

To install the SUSE Linux Enterprise Server 11 (x64) operating system with Service Pack 4, see “Installing the SUSE Linux Enterprise Server 11 (x64) operating system with Service Pack 4” on page 51.

Installing the SUSE Linux Enterprise Server 12.1 operating system

To install the SUSE Linux Enterprise Server 12.1 (x64) operating system, see “Installing the SUSE Linux Enterprise Server 12.1 operating system” on page 38.

Installing the SUSE Linux Enterprise Server 12.2 operating system

This topic provides instructions on installing the SUSE Linux Enterprise Server 12.2 operating system (x64).

To install the SUSE Linux Enterprise Server 12.2 operating system (x64), do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device, and start the server from the optical drive.
2. Select **Installation** and configure the network settings. The following steps are based on the scenario that **No** is selected in this step.
3. Click **OK**. In the “Language, Keyboard and License Agreement” window, select your language and keyboard layout and then select **I Agree to the License Terms**. Click **Next**.
4. In the Network Settings window, configure the network settings and click **Next**. The following steps are based on the scenario that default options are selected in this step.
5. In the Registration window, configure the information as prompted and click **Next**. The following steps are based on the scenario that **Skip Registration** is selected in this step. Select **OK** in the Warning window.
6. In the Add On Product window, select add-ons to be installed and click **Next**. The following steps are based on the scenario that default options are selected in this step.
7. In the System Role window, select **Default System** and then select **Next**.
8. In the Suggested Partitioning window, use the suggested partitioning method and click **Next**. If you want to create a drive partition, do one of the following:
   - Manually create a root partition (/)
     a. Click **Create Partition Setup** and select **Custom Partitioning (for experts)**. Click **Next**.
     b. In the Expert Partitioner window, select **Hard Disks** from **System view**. Then select the disk (for example, **sda**) for installing the operating system and click **Add**. Select the default partition type, then click **Next**.
     c. In the New Partitions Size window, select **Custom Size**.
     d. Type the amount of space (for example, 80 GB) in the **Custom Size** field and then click **Next**.
     e. Select **Operating System** from **Role**.
     f. In the **Formatting Options** area, select **BtrFS** from the **File system** drop-down list box.
     g. In the **Mount partition** area, select the forward slash **(/)** from the **Mount Point** drop-down list box.
     h. Click **Finish**.
   - Manually create a boot partition (/boot/efi)
     a. In the Expert Partitioner window, select **Hard Disks** from **System view**. Then select the disk (for example, **sda**) for installing the operating system and click **Add**. Select the default partition type, then click **Next**.
     b. In the New Partitions Size window, select **Custom Size**.
     c. Type the amount of space (for example, 2 GB) in the **Custom Size** field and then click **Next**.
     d. Select **Operating System** from **Role**.
     e. In the **Formatting Options** area, select **FAT** from the **File System** drop-down list box.
     f. In the **Mounting partition** area, select **/boot/efi** from the **Mount Point** drop-down list box.
     g. Click **Finish**.
   - Manually create a swap partition
     a. In the Expert Partitioner window, select **Hard Disks** from **System view**. Then select the disk (for example, **sda**) for installing the operating system and click **Add**. Select the default partition type, then click **Next**.
     b. In the New Partitions Size window, select **Custom Size**.
     c. Type the amount of space (for example, 2 GB) in the **Custom Size** field.

d. Select **Swap** from **Role** and click **Next**.

e. In the **Format partition** area, select **Swap** from the **File system** drop-down list box.

f. In the **Mount partition** area, select **Swap** from the **Mount Point** drop-down list box.

g. Click **Finish**.

Go to the Expert Partitioner window. The created root partition, boot partition, or swap partition is displayed in the window. Ensure that the created partition is correct and click **Accept**. Then, click **Next**.

9. In the Clock and Time Zone window, set the time zone and time and click **Next**.

   For example, set **Region** to **Asia** and set **TimeZone** to **Beijing**. Clear the **Hardware Clock Set to UTC** check box and set the time to local time. If "Do you want to continue with your selection (local time)?" is displayed, click **Continue**.

10. In the Create New User window, set a user name and password, and then click **Next**.

    Note: If the "Really use this password?" window is displayed, change the password according to your need or click **Yes** to keep the current password.

11. In the "Password for the System Administrator–root" window, set a root password and click **Next**.

    Note: If the "Really use this password?" window is displayed, change the password according to your need or click **Yes** to keep the current password.

12. In the Installation Settings window, click **Software** to select software applications to be installed.

    For example, if you want to install all software, do the following:

    a. Click **Software**.

    b. In the Software Selection and System Tasks window, select any software application and then right-click. Choose **All in This List-Install**.

    c. Click **OK → Install**. If the Confirm Installation window is displayed, click **Install**.

Installing the SUSE Linux Enterprise Server 12.3 operating system

To install the SUSE Linux Enterprise Server 12.3 operating system (x64), see "Installing the SUSE Linux Enterprise Server 12.3 operating system" on page 42.

Installing the VMware ESXi hypervisor

This topic provides instructions on how to install

- VMware ESXi 5.1 Update 1
- VMware ESXi 5.1 Update 2
- VMware ESXi 5.5
- VMware ESXi 5.5 Update 1
- VMware ESXi 5.5 Update 2
- VMware ESXi 5.5 Update 3b
- VMware ESXi 6.0 Update 3
- VMware ESXi 6.5
- VMware ESXi 6.5 Update 1

To install the VMware ESXi hypervisor, see "Installing the VMware ESXi hypervisor" on page 43.

Chapter 5. Installing drivers

This chapter provides information about installing drivers for different operating systems.

Note: Follow the instructions on the screen to restart your server.

Installing drivers for Windows operating systems

This topic provides instructions on installing the following drivers for Windows operating systems:

- Windows 7 operating system SP1
- Windows 8 operating system
- Windows 8.1 operating system

Installing the driver for the chipset

To install the driver for the chipset, do the following:

1. Download the driver for the chipset from the Lenovo Support Web site to your server. If the driver is a compressed file, unzip it to a folder. The most up-to-date device drivers for various server models are always available on the Lenovo Support Web site at:
   http://www.lenovo.com/drivers
2. Open the folder that contains the driver and double-click the Setup file. The “Welcome to the Setup Program” window is displayed.

   Note: If the User Account Control window is displayed, click **Yes**.
3. Click **Next**. The License Agreement window is displayed.
4. Click **Yes**. The Readme File Information window is displayed.
5. Click **Next**. The Setup Progress window is displayed.
6. Click **Next**. The Setup Is Complete window is displayed.
7. Select **Yes, I want to restart this computer now**. Then, click **Finish** to restart your server.

Installing the driver for Ethernet card

To install the driver for Ethernet card, do the following:

1. Download the driver for Ethernet card from the Lenovo Web site to your server. If the driver is a compressed file, extract the file first. The most up-to-date device drivers for various server models are always available for download on the Lenovo Web site at:
   http://www.lenovo.com/drivers
2. Open the driver folder and double-click the Autorun file. The Intel Network Connections window is displayed.

   Note: If the User Account Control window is displayed, click **Yes**.
3. Click **Install Drivers and Software**. The “Welcome to the install wizard for Intel” window is displayed.
4. Click **Next**. The License Agreement window is displayed.
5. Select **I accept the terms in the license agreement** and then click **Next**. The Setup Options window is displayed.
6. Click **Next**. The Ready to Install Program window is displayed.
7. Click **Install**. The Completing the Intel ...window is displayed.

8. Click **Finish** to restart your server.

Installing the driver for an onboard graphics card

To install the driver for onboard graphics card, do the following:

1. Download the driver for onboard graphics card from the Lenovo Web site to your server. If the driver is a compressed file, extract the file first. The most up-to-date device drivers for various server models are always available for download on the Lenovo Web site at: http://www.lenovo.com/drivers
2. Open the driver folder and double-click the Setup file. The “Welcome to the Setup Program” window is displayed.

   Note: If the User Account Control window is displayed, click **Yes**.
3. Click **Next**. The Welcome to the Setup Program window is displayed.
4. Click **Next**. The License Agreement window is displayed.
5. Click **Yes**. The Select Destination Location window is displayed.
6. Click **Next**. The Ready to Install window is displayed.
7. Click **Install**. The Completing the Intel ...window is displayed.
8. Select the default setting and click **Finish**. The “Welcome to the Setup Program” is displayed.
9. elect the default setting and click **Next**. The License Agreement window is displayed.
10. Click **Yes**. The Readme File Information window is displayed.
11. Click **Next**. The Setup Progress window is displayed.
12. Click **Next**.
13. The system is restarted to complete the installation.

Installing the driver for onboard USB 3.0 connectors

Note: Windows 8 and Windows 8.1 operating systems do not need to install the driver for USB 3.0 connector. The driver is installed during the operating system installation.

To install the driver for onboard USB 3.0 connectors, do the following:

1. Download the driver for onboard USB 3.0 connectors from the Lenovo Support Web site to your server. If the driver is a compressed file, unzip it to a folder. The most up-to-date device drivers for various server models are always available for download on the Lenovo Support Web site at: http://www.lenovo.com/drivers
2. Open the folder that contains the driver and double-click the Setup file. The “Welcome to the Setup Program” window is displayed.

   Note: If the User Account Control window is displayed, click **Yes**.
3. Click **Next**. The License Agreement window is displayed.
4. Click **Yes**. The Readme File Information window is displayed.
5. Click **Next**. The Setup Progress window is displayed.
6. Click **Next**. The Setup Is Complete window is displayed.
7. Select **Yes, I want to restart this computer now.** Then, click **Finish** to restart your server.

Installing the driver for PCI and PCI Express cards

To install the driver for Peripheral Component Interconnect (PCI) and PCI Express cards, do the following:

1. Download the driver for PCI and PCI Express cards from the Lenovo Web site to your server. If the driver is a compressed file, extract the file first. The most up-to-date device drivers for various server models are always available for download on the Lenovo Web site at: http://www.lenovo.com/drivers
2. Open the driver folder and double-click the Setup file. The Welcome to the ...window is displayed.

   Note: If the User Account Control window is displayed, click **Yes**.
3. Click **Next**. The License Agreement window is displayed.
4. Select **I accept agreement** and click **Next**. The Select Destination Location window is displayed.
5. Click **Next**. The Ready to Install window is displayed.
6. Click **Install**. The Completing the Intel window is displayed.
7. Select the default settings and click **Finish**. The Welcome to the setup Program window is displayed.
8. Select the default settings and click **Next**.
9. Select your desired setup language.
10. Click **Next**. The “Welcome to the InstallShied Wizard for SUNIX Multi-IO Controller” window is displayed.
11. Click **Next**. The “Ready to Install the Program” window is displayed.
12. Click **Install**. The “InstallShield Wizard Complete” window is displayed.
13. Click **Finish** to restart your server.

Installing drivers for a Microsoft Windows Server operating system

This topic provides instructions on installing drivers for Windows Server operating system.

Installing the driver for chipset

To install the driver for chipset, do the following:

1. Download the driver for the chipset from the Lenovo Web site. If the driver is a compressed file, unzip it to a folder. The most up-to-date device drivers for various server models are always available for download on the Lenovo Web site at: http://www.lenovo.com/drivers
2. Copy the folder that contains the driver to your USB storage device and connect the USB storage device to your server.
3. Open the folder that contains the driver and double-click the setup file. The “Intel® Chipset Device Software Welcome” window is displayed.
4. Click **Next**. The License Agreement window is displayed.
5. Click **Accept**. The Readme File Information window is displayed.
6. Click **Install**.
7. Click **Restart now**. The installation is completed.

Installing the driver for Ethernet card

To install the driver for Ethernet card, do the following:

1. Download the driver for the chipset from the Lenovo Web site. If the driver is a compressed file, unzip it to a folder. The most up-to-date device drivers for various server models are always available for download on the Lenovo Web site at: http://www.lenovo.com/drivers

2. Copy the folder that contains the driver to your USB storage device and connect the USB storage device to your server.
3. Open the folder that contains the driver and double-click the EXE file.
4. In the Intel Network Connections window, select **Install Drivers and Software**.
5. In the “Welcome to the install wizard for Intel® Network Connections” window, click **Next**.
6. When the License Agreement window is displayed, select **I accept the terms in the license agreement**, and then click **Next**.
7. When the Setup Options window is displayed, click **Next**.
8. When the message displays as “Ready to Install the Program”, click **Install**. The driver installation begins.
9. When the message displays as “Completing the Intel...”, click **Finish**. It is recommended to restart your server after the installation is completed.

Installing the driver for onboard graphics card

To install the driver for onboard graphics card, do the following:

1. Download the driver for onboard graphics card from the Lenovo Web site to your server. If the driver is a compressed file, extract the file first. The most up-to-date device drivers for various server models are always available for download on the Lenovo Web site at:
   http://www.lenovo.com/drivers
2. Open the driver folder and double-click the Setup file. The “Welcome to the Intel ...Setup Wizard” window is displayed.
3. Click **Next**. The License Agreement window is displayed.
4. Select **I accept agreement**. Click **Next**. The Select Destination Location window is displayed.
5. Click **Next**. The Ready to Install window is displayed.
6. Click **Install**. The Completing the Intel ...Setup Wizard window is displayed.
7. Select the default setting and click **Finish**. The “Welcome to the Setup Program” is displayed.
8. elect the default setting and click **Next**. The License Agreement window is displayed.
9. Click **Yes**. The Readme File Information window is displayed.
10. Click **Next**. The Setup Progress window is displayed.
11. Click **Next**. The Setup Is Complete window is displayed.
12. Select **Yes, I want to restart this computer now** and click **Finish**. The system is restarted to complete the installation.

Installing the driver for onboard USB 3.0 connectors

Notes: The following operating systems do not need to install the driver for USB 3.0 connector. The driver is installed during the operating system installation.

- Windows 2012 R2 x64
- Windows 2012 x64 (Including Storage Server 2012 and Multipoint Server 2012)

To install the driver for USB 3.0 connectors, do the following:

1. Download the driver for USB 3.0 connectors from the Lenovo Web site. If the driver is a compressed file, unzip it to a folder. The most up-to-date device drivers for various server models are always available for download on the Lenovo Web site at:
   http://www.lenovo.com/drivers

2. Copy the folder that contains the driver to your USB storage device and connect the USB storage device to your server.
3. Open the folder that contains the driver and double-click the Setup file. The “Welcome to the Setup Program” window is displayed.
4. Click **Next**. The License Agreement window is displayed.
5. Click **Yes**. The Readme File Information window is displayed.
6. Click **Next**. The Setup Progress window is displayed.
7. Click **Next**. The Setup Is Complete window is displayed.
8. Click **Finish**. The installation is completed. It is recommended to restart your computer.

   Note: If prompted, select “Yes, I want to restart this computer now.”. Click **Finish** to restart the computer.

Installing the driver for the Emulex HBA card

To install the driver for the Emulex HBA card, do the following:

1. Download the driver for the HBA card from the Lenovo Support Web site. If the driver is a compressed file, unzip it to a folder. The most up-to-date device drivers for various server models are always available for download on the Lenovo Support Web site at:
   http://www.lenovo.com/drivers
2. Copy the folder that contains the driver to a USB storage device and connect the USB storage device to your server.
3. Open the folder that contains the driver and double-click the Setup file. The Click Next to Continue window is displayed.
4. Click **Next**. The Installation options window is displayed.
5. Select the corresponding items depending on you need. Then, click **Install**. The Installation completed window is displayed.
6. Select the corresponding item depending on you need. The following steps are based on the scenario that **Start AutoPilot Installer** is selected in this step.
7. Click **Finish**. The EMULEX window is displayed.
8. Click **Next**. The Monitoring the Installation window is displayed.
9. When the installation is completed, click **Finish**.

Installing the driver for the ThinkServer Trusted Platform Module

To install the driver, do the following:

1. Download the driver from the Lenovo Web site. If the driver is a compressed file, unzip it to a folder. The most up-to-date device drivers for various server models are always available for download on the Lenovo Web site at:
   http://www.lenovo.com/drivers
2. Copy the folder that contains the driver to your USB storage device and connect the USB storage device to your server.
3. Open the folder that contains the driver and double-click the EXE file.
4. In the Choose Setup Language window, select **English (United States)**, and then click **OK**.
5. When the Setup status window opens, the driver installation begins.
6. When the InstallShield Wizard Complete window opens, click **Finish**. The installation is completed.

Installing the driver for PCI and PCI Express cards

To install the driver for Peripheral Component Interconnect (PCI) and PCI Express cards, do the following:To install the driver for Peripheral Component Interconnect (PCI) and PCI Express cards, do the following:

1. Download the driver for PCI and PCI Express cards from the Lenovo Web site to your server. If the driver is a compressed file, extract the file first. The most up-to-date device drivers for various server models are always available for download on the Lenovo Web site at: http://www.lenovo.com/drivers
2. Open the driver folder and double-click the Setup file. The Welcome the ...Setup Wizard window is displayed.
3. Click **Next**. The License Agreement window is displayed.
4. Select **I accept agreement** and click **Next**. The Select Destination Location window is displayed.
5. Click **Next**. The Ready to Install window is displayed.
6. Click **Install**. The Completing the ...Setup Wizard window is displayed.
7. Select the default settings and click **Finish**. The Choose Setup Language window is displayed.
8. Select your desired language and click **Next**. The Welcome to the ...Controller window is displayed.
9. Click **Next**. The “Ready to Install the Program” window is displayed.
10. Click **Install**. The “InstallShield Wizard Complete” window is displayed.
11. Click **Finish** to restart your server.

Installing the driver for Intel Management Engine Interface

To install the driver for Intel Management Engine Interface, do the following:

1. Download the driver for Intel Management Engine Interface from the Lenovo Web site to your server. If the driver is a compressed file, unzip it to a folder. The most up-to-date device drivers for various server models are always available for download on the Lenovo Web site at: http://www.lenovo.com/drivers
2. Copy the folder that contains the driver to your USB storage device and connect the USB storage device to your server.
3. Open the folder that contains the driver and double-click the Setup file. The “Inter(R) Management Engine Components Welcome” window is displayed.
4. Click **Next**. The License Agreement window is displayed.
5. Select **I accept the terms in the license agreement** and click **Next**. The Destination Folder window is displayed.
6. Choose your desired destination folder and click **Next**. The InstallShield Wizard Complete window is displayed.
7. Click **Finish**.

Installing the driver for the PMC 8885e card

To install the driver for the PMC 8885e card on a Windows operating system, do the following:

1. Download the corresponding driver from the Lenovo Web site. If the driver is a compressed file, unzip it to a folder. The most up-to-date device drivers for various server models are always available for download on the Lenovo Web site at: http://www.lenovo.com/drivers
2. Copy the folder that contains the driver to your USB storage device and connect the USB storage device to your server.

3. Open the Device Manager window. Right-click **RAID controller** and then select **Update Driver Software**.
4. In the Update Driver Software window, click **Browse my computer for driver software**.
5. In the “Browse for driver software on your computer” window, click **Browse...** to locate the driver you want to install.
6. Click **OK → Next**.
7. When the message “Windows has successfully updated your driver software” is displayed, click **Close**.

Installing drivers for Hyper-V operating systems

This topic provides instructions on installing the drivers for Hyper-V operating systems.

Installing the driver for the chipset

To install the driver for the chipset, do the following:

- For the file with the .exe extension:
  1. Download the driver from the Lenovo Web site. If the driver is a compressed file, unzip it to a folder. The most up-to-date device drivers for various server models are always available for download on the Lenovo Web site at:
     http://www.lenovo.com/drivers
  2. Copy the driver to a USB storage device and connect the USB storage device to your server.
  3. Open the folder that contains the driver and double-click the EXE file. The “Welcome to the Setup Program” window is displayed.
  4. Click **Next**. The License Agreement window is displayed.
  5. Click **Yes**. The Readme File Information window is displayed.
  6. Click **Next**. The Setup Progress window is displayed.
  7. Click **Next**. The Setup Is Complete window is displayed.
  8. Click **Finish**. The installation is completed. It is recommended to restart your computer after driver installation.

     Note: If prompted, select “Yes, I want to restart this computer now.”. Click **Finish** to restart the computer.
- For the file with the .inf extension:
  1. Download the driver for Microsoft Hyper V from the Lenovo Web site. The most up-to-date device drivers for various server models are always available for download on the Lenovo Web site at:
     http://www.lenovo.com/drivers
  2. Copy the driver for the chipset to a USB storage device. Connect the USB storage device to your server.
  3. Use the `Pnputil -i -a <driverinf>` command to install the driver, for example:
     ```
     e:
     cd Chipsetwindows
     cd Win7
     Pnputil -i -a *.inf
     ```

     Note: In the command lines, *e:* represents the drive letter of your USB storage device and *Chipsetwindows\Win7* represents the subdirectory where your driver is located.
  4. Restart your server after the installation is completed.

Installing the driver for an onboard graphics card

To install the driver for an onboard graphics card, do the following:

1. Download the driver from the Lenovo Web site. If the driver is a compressed file, unzip it to a folder. The most up-to-date device drivers for various server models are always available for download on the Lenovo Web site at:
   http://www.lenovo.com/drivers
2. Copy the driver to a USB storage device. Connect the USB storage device to your server.
3. Use the `Pnputil-i-a <driverinf>` command to install the driver, for example:
   ```
   e:
   cd VGA
   Pnputil -i -a *.inf
   ```

   Note: In the command lines, *e:* represents the drive letter of your USB storage device and *Video* represents the name of the folder where the driver is stored.
4. In the Windows Security window, click **Install**.
5. Restart your server after the installation is completed.

Installing the driver for an Ethernet card

To install the driver for an Ethernet card, do the following:

1. Download the driver for the Ethernet card from the Lenovo Web site to your server. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at:
   http://www.lenovo.com/drivers
2. Copy the driver for the Ethernet card to a USB storage device. Connect the USB storage device to your server.
3. Use the `Pnputil-i-a <driverinf>` command to install the driver, for example:
   ```
   e:
   cd / win2012_hyperv_NIC
   Pnputil -i -a *.inf
   ```

   Note: In the command lines, *e:* represents the drive letter of your USB storage device and *win2012_hyperv_NIC* represents the subdirectory where the driver is located.
4. Restart your server after the installation is completed.

Installing the driver for the Intel Management Engine Interface

To install the driver for the Intel Management Engine Interface, do the following:

1. Download the driver from the Lenovo Web site. The most up-to-date device drivers for various server models are always available for download on the Lenovo Web site at:
   http://www.lenovo.com/drivers
2. Copy the driver for the chipset to a USB storage device. Connect the USB storage device to your server.
3. Use the `Pnputil-i-a <driverinf>` command to install the driver, for example:
   ```
   e:
   cd Managment
   Pnputil -i -a *.inf
   ```

   Note: In the command lines, *e:* represents the drive letter of your USB storage device and *Managment* represents the subdirectory where your driver is located.
4. Restart your server after the installation is completed.

Installing the driver for the PMC 8885e card

To install the driver for the PMC 8885e card on a Hyper-V operating system, do the following:

1. Download the corresponding driver from the Lenovo Web site. If the driver is a compressed file, unzip it to a folder. The most up-to-date device drivers for various server models are always available for download on the Lenovo Web site at:
   http://www.lenovo.com/drivers
2. Copy the folder that contains the driver to your USB storage device and connect the USB storage device to your server.
3. Use the `Pnputil-i-a <driverinf>` command to install the driver, for example:
   ```
   e:
   cd Management
   Pnputil -i -a arcsas.inf
   ```

   Note: In the command lines, *e:* represents the drive letter of your USB storage device, *Management* represents the folder where your driver is located, and *arcsas.inf* represents the driver name. Use the corresponding file name on your server.
4. Restart your server after the installation is completed.

Installing the driver for an HBA card

This topic provides instructions on how to install the driver for an HBA card.

To install the driver for an HBA card, do the following:

- For the file with the .exe extension:
  1. Download the driver from the Lenovo Web site. If the driver is a compressed file, unzip it to a folder. The most up-to-date device drivers for various server models are always available for download on the Lenovo Web site at:
     http://www.lenovo.com/drivers
  2. Copy the driver to a USB storage device and connect the USB storage device to your server.
  3. Open the folder that contains the driver and double-click the EXE file. The Emulex window is displayed.
  4. In the Emulex window, click **Next**.
  5. In the Installation options window, click **Install**.
  6. In the Installation completed window, click **Finish**.
  7. Follow the instructions on the screen to type y and press Enter.
- For the file with the .inf extension:
  1. Download the driver from the Lenovo Web site. The most up-to-date device drivers for various server models are always available for download on the Lenovo Web site at:
     http://www.lenovo.com/drivers
  2. Copy the driver for the chipset to a USB storage device. Connect the USB storage device to your server.
  3. Use the `Pnputil-i-a <driverinf>` command to install the driver, for example:
     ```
     e:
     cd Managment
     Pnputil -i -a *.inf
     ```

     Note: In the command lines, *e:* represents the drive letter of your USB storage device and *Managment* represents the subdirectory where your driver is located.
  4. Restart your server after the installation is completed.

Installing drivers for the SUSE Linux Enterprise Server operating system

This topic provides instructions on installing drivers for the SUSE Linux Enterprise Server operating system.

Note: Your server comes with a chipset driver pre-installed. You do not need to install the chipset driver manually.

Installing the driver for an Ethernet card

Note: Before installing the driver for an Ethernet card, ensure that the kernel-source package and the corresponding compiler are installed on your server.

To install the driver for an Ethernet card, do the following:

1. Copy the Ethernet card driver from the *ThinkServer EasyStartup* DVD that comes with your server to your local drive.
2. If the driver is a compressed file, unzip it to a folder. Copy the folder to a USB storage device and connect the USB storage device to your server.
3. Log in to the operating system and copy the folder from the USB storage device to the `/tmp` directory on your server.
4. Use the following commands to install the driver:
   ```
   cd /tmp
   tar zxvf ixgbe-x.x.x.x.tar.gz
   cd igb -x.x.x.x /src
   make install
   ```

   Notes:

   - If the file extension is not .tar.gz, skip the second command.
   - In the command lines, *igb -x.x.x.x* represents the driver name. Use the corresponding file name and version number on your server.
5. Restart your server and click **Computer** on the bottom-left corner.
6. Click **YaST**.
7. In the YaST Control Center window, click **Network Devices → Network Settings**.
8. Choose an Ethernet card as you need and click **Edit**.
9. In the Network Card Setup window, select **Statically assigned IP Address** and configure the settings as you need. Then, click **Next**.
10. Configure other Ethernet cards if needed. Click **OK** to complete the Ethernet card configuration.

Installing the driver for the HBA card

This topic provides instructions on installing the driver for the HBA card.

To install the driver for the card, do the following:

1. Download the driver for the card from the Lenovo Web site. If the driver is a compressed file, unzip it to a folder. Then, copy the folder to your USB storage device and connect the USB storage device to your server.
2. Log in to the operating system and copy the folder from your USB storage device to the `/tmp` directory on your server.
3. Use the following commands to install the driver:
   ```
   cd /tmp
   cd /elx-lpfc-dd-sles11sp-10.2.185.0
   ```

```
./elx_lpfc_install.sh
```

Note: In the command lines, `elx-lpfc-dd-sles11sp-10.2.185.0` represents the name of the folder that contains the driver. `elx_lpfc_install.sh` represents the driver name. Use the corresponding file name on your server.

4. Restart your server.

Installing the driver for PMC 8885e card

The driver for the PMC 8885e card on a SUSE Linux Enterprise Server operating system is installed during the operating system installation. You do not have to install it manually.

Installing drivers for the Red Hat Enterprise Linux operating system

This topic provides information on installing drivers for the Red Hat Enterprise Linux operating system.

Installing the driver for an Ethernet card

Note: Before installing the driver for an Ethernet card, ensure that the kernel-source package and the corresponding compiler are installed on your server.

To install the driver for an Ethernet card, do the following:

1. Copy the Ethernet card driver from the *ThinkServer EasyStartup* DVD that comes with your server to your local drive.
2. If the driver is a compressed file, unzip it to a folder. Copy the folder to a USB storage device and connect the USB storage device to your server.
3. Log in to the operating system and copy the folder from the USB storage device to the `/tmp` directory on your server.
4. Use the following commands to install the driver:
   ```
   cd /tmp
   tar zxvf ixgbe-x.x.x.x.tar.gz
   cd igb -x.x.x.x /src
   make install
   ```

   Notes:

   - If the file extension is not .tar.gz, skip the second command.
   - In the command lines, *igb -x.x.x.x* represents the driver name. Use the corresponding file name and version number on your server.
5. Restart your server and click **Computer** on the bottom-left corner.
6. Click **YaST**.
7. In the YaST Control Center window, click **Network Devices → Network Settings**.
8. Choose an Ethernet card as you need and click **Edit**.
9. In the Network Card Setup window, select **Statically assigned IP Address** and configure the settings as you need. Then, click **Next**.
10. Configure other Ethernet cards if needed. Click **OK** to complete the Ethernet card configuration.

Installing the driver for the HBA card

This topic provides instructions on installing the driver for the HBA card.

To install the driver, do the following:

1. Download the driver for the card from the Lenovo Web site. If the driver is a compressed file, unzip it to a folder. Then, copy the folder to your USB storage device and connect the USB storage device to your server.
2. Log in to the operating system and copy the folder from your USB storage device to the `/tmp` directory on your server.
3. Use the following commands to install the driver:
   ```
   cd /tmp
   cd /elx-lpfc-dd-sles11sp-10.2.185.0
   ./elx_lpfc_install.sh
   ```

   Note: In the command lines, `elx-lpfc-dd-sles11sp-10.2.185.0` represents the name of the folder that contains the driver. `elx_lpfc_install.sh` represents the driver name. Use the corresponding file name on your server.
4. Restart your server.

Installing the driver for PMC 8885e card

The driver for the PMC 8885e card on a RedHat Enterprise Linux operating system is installed during the operating system installation. You do not have to install it manually.

Installing drivers for the VMware hypervisor

To install drivers for the VMware hypervisor, do the following:

1. Download the driver file from the Lenovo Support Web site. Ensure that the name of the driver file you download is offline-bundle.zip. The most up-to-date device drivers for various server models are always available on the Lenovo Support Web site at:
   http://www.lenovo.com/drivers
2. Log in to the ESXi host as an administrator using the vSphere Client. Do the following to connect the vSphere Client to the ESXi host:
   a. Press F2 to log in to the system.
   b. Select **Troubleshooting Options → ESXi Shell is Enabled**.
   c. Press Alt+F1 to enter the command line interface. Use the following command to disable the firewall:
      ```
      esxcli network firewall set --enabled false
      ```
      Use the following command to view the status of the firewall:
      ```
      esxcli network firewall get
      ```
   d. Select **Configure Management Network → Network Adapters** to configure the IP address. Ensure that the IP address of the vSphere Client and the IP adress of the ESXi host are within the same IP address range.
3. Upload the offline-bundle.zip file to the ESXi host using the Datastore Browser.
4. In the vSphere Client inventory, right-click the host and select **Enter Maintenance Mode**.
5. Log in to the ESXi host as a root user using SSH or iLO/DRAC.
6. Use the following command to install the drivers:
   ```
   esxcli software vib install –d /path/offline-bundle.zip
   ```
   Example:
   ```
   esxcli software vib install –d /vmfs/volumes/datastore/offline-bundle.zip
   ```

   Note: If you are prompted to verify the digital signature for the drivers, add `--no-sig-check` to the command.
   ```
   esxcli software vib install -v /vmfs/volumes/datastore/filename.vib --no-sig-check
   ```
7. Restart your server.

8. In the vSphere Client inventory, right-click the host and select **Exit Maintenance Mode**.

Appendix A. Trademarks

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