Installing Operating Systems

The unattended operating system installation function helps you install the Microsoft Windows and RedHat Linux operating systems. UCS-SCU has integrated device drivers including RAID drivers to seamlessly install operating systems on supported RAID logical arrays without additional load driver steps or devices such as the USB.

UCS-SCU supports operating system installation only on virtual disks, and solid state disk (SSD) in AHCI mode. Installation on physical disks is not supported. All UCS-SCU supported operating systems are organized into three groups: Windows, Linux and RHEL.

> **Note**
> Before you begin the operating system installation, be sure that you have disabled the Watchdog Timer. If this feature is enabled and the value is set for a time duration that is less than the time needed to install the OS, the operating system installation process is interrupted. This Watchdog Timer feature automatically reboots or powers off the server after the specified time duration.

You can use the following two options to install the operating system:

- ESXi Install, page 7-1—Use the ESXi Install option to install the operating system with the customized settings.
- Quick Install, page 7-4—Use the Quick Install option to install the operating system with the default settings.
- Custom Install, page 7-6—Use the Custom Install option to modify the default settings prior to installing the operating system.

ESXi Install

The ESXi Install option allows you to install the operating system and customize the default settings.

Step 1 To enter the unattended operating system installation function area, click **OS Install** in the left navigation pane.

The OS Install page appears.

Step 2 Click the **ESXi** radio button and choose an ESXi version from the Operating System drop-down list.

The Edition drop-down list appears.

Step 3 Click **Next**.

The OS Install page of the selected ESXi version appears.

Basic Configuration

To configure the basic configuration settings, follow these steps:

Step 1 In the **Basic Configuration** area, do the following:

  a. In the **Root Password** field, enter the root password.

  b. In the **Confirm Root Password** field, reenter the root password.

  c. From the **Media Type** drop-down list, choose the disk on which you want install OS. This can be one of the following:

> ✎
>
> **Note** A disk that is detected during SCU boot is listed under **Media Type**.

- **Local Disk**—Refers to the local HDD available on the target server.
- **SAN Disk**—Following SAN disks are supported for ESXi installation:
    - **Remote Disk**—Refers to the SAN based FC or FCoE disk allocated on the target server.
    - **iSCSI Disk**—This refers to SAN based iSCSI disks configured on the target server. If you choose this option, then review and update the following parameters:

Table 7-1   iSCSI parameters

Parameter	Description
iSCSI Target Address field	Supports IPv4 address only.
Interface Name drop-down list	Lists the interfaces that have iSCSI enabled.
	You must choose the interface with which the iSCSI Target can be reached. As a pre-requisite the selected interface's option ROM must be pre-configured with iSCSI details.
Initiator IP address field	Enter Initiator IP Address.
	This IP address is bound to the selected Interface and used for iSCSI operations
Subnet Mask field	Subnet mask for the Initiator IP.
Gateway IP field	Gateway IP address.

Parameter	Description
IQN Name field	Allows you to enter the initiator IQN name. Required if ACL mandates connection with a specific IQN Name. **Note** If the value is left blank an auto-generated IQN name would be used. **Note** IQN Name might be required depending on vendor target configuration.
CHAP Username field	Required if the target ACL enables CHAP and mandates access via CHAP credentials.
CHAP Password field	Required if the target ACL enables CHAP and mandates access via CHAP credentials.

Note iSCSI Disk is always listed under **Media Type**. If you choose iSCSI disk for OS installation, then you are required to enter the required input fields to discover the iSCSI target. To discover the iSCSI target, click **Get Disks** button.

Note When configuring iSCSI parameters in Cisco IMC, configure values for primary target only and leave the secondary target values blank. If you configure secondary target then ESXi installation will fail.

Note Installation of ESXi on iSCSI software targets are not supported through SCU.

d. From the **Select Disk** drop-down list, select the disk on which the OS will be installed.

Network Settings

The Network Settings allows you to enter the network configuration settings for the onboard network adapters that are detected by the operating system during installation. These settings do not affect the network settings for the Cisco IMC. We recommend that you set different IP addresses for the operating system and Cisco IMC. The network interface column lists each network adapter detected by the UCS-SCU. Your operating system may have a different name for the interface after you install the operating system.

Note Only one of the active network should be configured, and this network interface will be ESXi management network.

To configure the network settings, follow these steps:

Cisco UCS Server Configuration Utility, Release 4.0(2)

Step 1   Click **Network Settings** to open the corresponding window.

The Network Settings window displays the link status of available network interfaces and the corresponding IP address, subnet mask, gateway, DNS, link status, vendor, type, and MAC address.

Step 2   To edit the Network Settings, do the following:

a. Select a network interface and click **Edit.**

The Network Settings dialog box is displayed.

b. In the **Network Settings** dialog box, do the following:

• Select IP Address from DHCP server or Static IP Address. If you select Static IP Address, do the following:

– In the **IP Address** field, enter the IPv4 address.

– In the **Subnet Mask** field, enter the subnet IPv4 address.

– In the **Gateway** field, enter the gateway IPv4 address.

– In the **DNS** field, enter the DNS IPv4 address.

Click **OK**.

Other OS Install

Quick Install

The Quick Install option allows you to quickly install the operating system with the default parameters. You can view the OS Install page with the default parameters depending on the target operating system. The Quick Install method does not require any user input and is a one-click operating system installation method.

To perform the quick installation of the OS, follow these steps:

Step 1   To enter the unattended operating system installation function area, click **OS Install** in the left navigation pane.

The OS Install page appears.

Step 2   Click any one of the operating system radio buttons.

Step 3   From the Operating System drop-down list, select the version of the operating system.

Step 4   (For Windows) From the Edition drop-down list, select the edition of the operating system.

The Default Settings area and the Quick Install and Custom Install buttons appear.

Table 7-2 shows the default parameters that are displayed in the Default Settings area for the Windows OS.

Table 7-2   Default Parameters (for Windows)

Parameter	Default Value
Time Zone	Central American Standard Time
Name	admin

Table 7-2   Default Parameters (for Windows)

Parameter	Default Value
Organization	Organization
Computer Name	Computer
Network	DHCP
Work Group Name	WORKGROUP
Drivers	All drivers will be installed from the SCU boot media
Firewall	Disabled
RDP	Disabled
Disk Details	
Disk Name	LSI
Disk Size	Minimum 40 GB
Partition Details	
Drive Letter	C
File System	NTFS
Size (MB)	Depends on logical disks

Table 7-3 shows the default parameters that are displayed in the Default Settings area for the Red Hat Enterprise Linux OS.

Table 7-3   Default Parameters (for Red Hat Enterprise Linux)

Parameter	Default Value
Time Zone	America/New_York
Name	root
Default Password	password
Network	DHCP
Drivers	All drivers will be installed from the SCU boot media
Disk Details	
Disk Name	LSI
Disk Size	Depends on logical disks
Partition Details	
Drive Letter	
File System	ext3
Size (MB)	Depends on logical disks
Drive Letter	
File System	linux-swap
Size (MB)	2048

Table 7-4 shows the default parameters that are displayed in the Default Settings area for the SUSE Linux Enterprise Server (SLES) OS.

Table 7-4   Default Parameters (for SLES)

Parameter	Default Value
Time Zone	America/New_York
Name	root
Default Password	password
Network	DHCP
Drivers	All drivers will be installed from the SCU boot media
Disk Details	
Disk Name	LSI0-Logical Vol-2
Disk Size	Depends on logical disks
Partition Details	
Drive Letter	/
File System	ext3
Size (MB)	Depends on logical disks
Drive Letter	swap
File System	linux-swap
Size (MB)	Minimum 2048

Step 5   Click **Quick Install** to complete the installation.

A progress bar is displayed that indicates the tasks being performed and the percentage of completion.

Note   Be sure that logical disks are created before you install the operating system. If logical disks are not available, the following occurs:

- The disk details are not displayed under Default Settings area
- The Quick Install and Custom Install buttons are not displayed
- The following warning message is displayed:

```
OS Installation cannot be done as no logical disks found in the system. Please use RAID
Configuration to create logical disks.
```

Custom Install

The Custom Install option allows you to customize the default settings.

Note If no parameters are modified, the custom installation performs with the default parameters. Table 7-2 and Table 7-3 displays the default parameters for the Windows and Red Hat Enterprise Linux operating systems and downloads the drivers from the SCU boot media.

This section covers the custom installation procedures for the following operating systems:

Windows Server Operating System Installation

For unattended Windows Server operating system installation, follow these steps:

Step 1 To enter the unattended operating system installation function area, click **OS Install** in the left navigation pane. The OS Install page appears.

Step 2 Click the **Windows** radio button and choose an operating system from the Operating System drop-down list.

The Edition drop-down list appears.

Step 3 From the Edition drop-down list, choose an edition.

The Default Settings area and the Quick Install and Custom Install buttons appear.

Note The Windows Server 2008 R2 option in the drop-down list is the same for both Windows Server 2008 R2 and Windows Server 2008 R2 SP1. Depending on the installation CD used (Win2k8 R2 or Win2k8R2 SP1), the corresponding Windows OS version gets installed.

Step 4 Click **Custom Install**.

A progress bar displays indicating the tasks being performed and the percentage of completion. A new OS Install page appears with the following list of collapsible windows:

- Personalization—To set the personalization settings, go to Personalization, page 7-8.
- Installation Partitions—To set the installation partition settings, go to Installation Partitions, page 7-8.
- Network Settings—To set the network settings, go to Network Settings, page 7-9.
- Installation Drivers—To set the driver settings, go to Installation Drivers, page 7-10.

Step 5 Click **Install**.

A progress bar is displayed that indicates the tasks being performed and the percentage of completion. An OS Install dialog box appears which prompts you to remove the UCS-SCU media and insert the required operating system CD.

Step 6 Insert the operating system CD and click **Ok**.

The system reboots and installation of the operating system begins.

Personalization

To configure the personalization settings, follow these steps:

Step 1   Click **Personalization** to open the corresponding window.

Step 2   In the Personalization window, do the following:

a. From the Time Zone drop-down list, choose a time zone.

b. In the Name field, enter a name for the administrator. The maximum limit is 20 characters.

c. In the Organization field, enter a name of the organization of the administrator. The maximum limit is 15 characters.

d. Select one of the License Information radio buttons and enter the 25 character product key if license needs to be activated.

e. In the Computer Name field, enter the name of the server. The maximum limit is 15 characters.

f. In the Description field, enter the description of the server. The maximum limit is 25 characters

Installation Partitions

To configure the installation partition settings, follow these steps:

Step 1   Click **Installation Partitions** to open the corresponding window.

Step 2   In the Installation Partitions window, do the following:

a. From the Select Disk drop-down list, choose a disk to create a logical partition.

b. Click a disk name to view the corresponding partition details.

The disk entry expands and displays the partition name, drive letter, file system, and the space used in MB.

c. To edit a partition, do the following:

• Choose a partition to edit and click **Edit**.

The Edit Partition dialog box is displayed.

• In the Edit Partition dialog box, do the following:

   – From the Drive Letter drop-down list, choose a drive.

   – In the Size text field, enter the partition size.

✎
Note   The size cannot be more than the available disk space.

   – From the File system drop-down list, choose a file system.

   – Click **OK** to save your changes.

d. To create a new partition, do the following:

• Choose a free space and click **New**.

A Create Partition dialog box is displayed.

• In the Create Partition dialog box, do the following:

     – From the Driver Letter drop-down list, choose a drive.

     – In the Size field, edit the disk size.

> **Note** The size cannot be more than the available disk space.

     – From the File System drop-down list, choose a file system.

     – Click **Ok**.

  e. To remove a partition, do the following:

- Choose the partition to delete and click **Delete**.

    The OS Install dialog box is displayed.

- Click **Yes** to delete the partition.

> **Note** In the Red Hat Enterprise Linux, the Root and Swap partitions are necessary. If you do not specify their sizes during the partition process, the UCS-SCU generates an alert message and suggests an alternate partition solution. Accept it if you are not familiar with Linux partitions.

Network Settings

The Network Settings allows you to enter the network configuration settings for the onboard network adapters that are detected by the operating system during installation. These settings do not affect the network settings for the Cisco IMC. We recommend that you set different IP addresses for the operating system and Cisco IMC. The network interface column lists each network adapter detected by the UCS-SCU. Your operating system may have a different name for the interface after you install the operating system.

To configure the network settings, follow these steps:

Step 1 Click **Network Settings** to open the corresponding window.

The Network Settings window displays the link status of available network interfaces and the corresponding IP address, subnet mask, gateway, DNS, link status, vendor, type, and MAC address.

Step 2 In the Network Settings window, do the following:

  a. In the Work Group or Network Domain area, choose one of the following options:

- Select **No network** or **No domain** radio button when a network or domain does not need to be added. Enter a workgroup name in the Work Group Name field. The maximum limit is 20 characters.

- Select the **Join this Domain** radio button and do the following:

    – In the Domain Name text field, enter the name of the domain. The maximum limit is 20 characters.

    – In the Domain Username, enter the user name of the domain. The maximum limit is 20 characters.

    – In the Domain password, enter the password of the domain.The maximum limit is 20 characters.

  b. Select or deselect the **Enable Remote Access (RDP)** radio button for remote access settings.

  c. Select or deselect the **Disable Firewall** radio button for firewall settings.

d. In the DNS Suffix/Domain field, specify the DNS suffix of the domain.The maximum limit is 25 characters.

e. In DNS Suffix Search Order 1 field, enter a DNS suffix search order. The maximum limit is 25 characters.

f. In the DNS Suffix Search Order 2 field, enter another DNS suffix search order. The maximum limit is 25 characters.

g. In the Proxy Address field, enter the IP address or name of the proxy server. The maximum limit is 30 characters.

h. In the Port field, enter the port number of the proxy server. The maximum limit is 5 characters.

i. Edit the Network Settings by doing the following:

- Select a network interface and click **Edit.**

  The Network Settings dialog box displays.

- Select IP Address from DHCP server or Static IP Address. If you select Static IP Address, do the following:

  – In the IP Address field, enter the IPv4 address.

  – In the Subnet Mask field, enter the subnet IPv4 address.

  – In the Gateway field, enter the gateway IPv4 address.

  – In the DNS field, enter the DNS IPv4 address.

  – Click **OK**.

Installation Drivers

UCS-SCU displays all available drivers downloaded from the driver source. Deselect the drivers that you do not want to install. If you want to install an operating system on a RAID volume, select the driver for the appropriate RAID controller.

To configure the installation driver settings, follow these steps:

Step 1 Click **Installation Drivers** to open the corresponding window.

Step 2 Select the drivers that you want to install from the Choose Drivers to Install table.

If drivers are not available in the Choose Drivers to Install table, download the drivers using the Installation Drivers toolbar. To download the drivers, choose one of the following options:

- Downloading from Cisco.com, page 7-10
- Downloading from SCU Boot media, page 7-11
- Downloading from Network Share, page 7-11
- Downloading from USB, page 7-12

Downloading from Cisco.com

To download the most recent drivers from the Cisco support website, follow these steps:

Step 1   Click **From Cisco.com** in the toolbar.

> ✎
> **Note**   Ensure that the server is only connected to one network during the download.

If your network is not configured or if user credentials are not entered, the Network Configuration dialog box is displayed. If your network is configured or if user credentials are entered, the Select Device Packages dialog box is displayed. If you need to configure your network, go to Step 2. If you do not need to configure your network, go to Step 3.

Step 2   In the Network Configuration dialog box, do the following:

  a.   Enter the IP addresses to configure the network. For more information about configuring network, go to the "Configuring a Network" section on page 3-4

  b.   In the User Name field, enter the cisco.com username. The maximum limit is 45 characters.

  c.   In the Password field, enter the cisco.com password. The maximum limit is 45 characters.

Step 3   In the Select Device Packages dialog box, select the required driver package and click **OK**.

A progress message is displayed and the list of drivers are populated in the Choose Drivers to Install table.

Downloading from SCU Boot media

To directly use the driver packages that are stored in the Tools and Drivers CD, follow this step:

Step 1   Click **From SCU Boot media** in the toolbar.

A progress message is displayed and the list of drivers are populated in the Choose Drivers to Install table.

> ✎
> **Note**   UCS-SCU selects this option as default.

Downloading from Network Share

To download a driver package stored on a network share folder, follow these steps:

Step 1   Click **From Network Share** in the toolbar.

If your network is not configured or if user credentials are not entered, the Network Configuration dialog box is displayed. If your network is configured or if user credentials are entered, the Network Location dialog box is displayed. If you need to configure your network, go to Step 2. If you do not need to configure your network, go to Step 3.

Step 2   In the Network Configuration dialog box, enter the IP addresses to configure the network. For more information about configuring the network, go to the "Configuring a Network" section on page 3-4

Step 3   In the Network Location dialog box that is displayed, do the following:

  a.   In the User Name field, enter the login name to the network location.

b. In the Password field, enter the password to the network location.

c. In the Network Location field, enter the path name of the zip folder which contains the drivers.

d. Click **Connect**.

A file dialog box is displayed that lists the zip folders containing drivers.

e. Select a zip file.

f. Click **Open**.

The selected zip file appears as a package name in the Network Location dialog box.

g. Click **Ok**.

A progress message is displayed and the list of drivers are populated in the Choose Drivers to Install table.

Downloading from USB

To download the drivers that are stored in your USB key or USB hard drive, follow these steps:

Step 1 Click **From USB** in the toolbar.

A file dialog box is displayed that lists the USB folders.

Step 2 Navigate to the zip file that contains the drivers.

Step 3 Click **Ok**.

A progress message is displayed and the list of drivers are populated in the Choose Drivers to Install table.

Linux Server Series Operating System Installation

For unattended Linux operating system installation, follow these steps:

Step 1 Enter the unattended operating system installation function area by clicking **OS Install** in the left navigation pane.

The OS Install page appears.

Step 2 Click the **RHEL** radio button and choose an operating system from the Operating System drop-down list.

The Default Settings area and the Quick Install and Custom Install buttons appear.

Step 3 Click **Custom Install**.

A progress bar is displayed that indicates the tasks being performed and the percentage of completion. A new OS Install page appears with the following list of collapsible windows:

- Basic Configuration—To set the personalization settings, go to Basic Configuration, page 7-13.

- Installation Partitions— To set the installation partition settings, go to Installation Partitions, page 7-8.

- Package Selection—To set the package selection settings, go to Package Selection, page 7-13.

- Network Settings—To set the network settings, go to Network Settings, page 7-13.

• Installation Drivers—To set the driver settings, go to Installation Drivers, page 7-10.

Step 4   Click **Install**.

A progress bar is displayed that indicates the tasks being performed and the percentage of completion. An OS Install dialog box appears.

Step 5   Click **Ok**.

Step 6   Remove the UCS-SCU media and insert the required operating system CD.

Basic Configuration

To configure the basic configuration settings, follow these steps:

Step 1   Click **Basic Configuration** to open the corresponding window.

Step 2   In the Basic Configuration window, do the following:

   a.   In the Root Password field, enter the root password.

   b.   In the Confirm Root Password field, reenter the root password.

   c.   From the Default Language drop-down list, choose a default language.

   d.   From the Keyboard drop-down list, choose the type of keyboard layout.

   e.   From the Time Zone drop-down list, choose the time zone.

   f.   In the Additional Languages list, select all languages that apply.

Package Selection

To configure the package selection settings, follow these steps:

Step 1   Click **Package Selection** to open the corresponding window.

Step 2   Select all check boxes that apply.

Network Settings

To configure the network settings, follow these steps:

Step 1   Click **Network Settings** to open the corresponding window.

The Network Settings window displays the link status of available network interfaces and the corresponding IP address, subnet mask, gateway, DNS, link status, vendor, type and MAC address.

Step 2   To edit the Network Settings, do the following:

   a.   Select a network interface and click **Edit.**

   The Network Settings dialog box is displayed.

   b.   In the Network Settings dialog box, do the following:

- Select IP Address from DHCP server or Static IP Address. If you select Static IP Address, do the following:
  - In the IP Address field, enter the IPv4 address.
  - In the Subnet Mask field, enter the subnet IPv4 address.
  - In the Gateway field, enter the gateway IPv4 address.
  - In the DNS field, enter the DNS IPv4 address.
- Click **OK**.

SUSE Linux Server Operating System Installation

To perform an unattended SLES operating system installation, follow these steps:

Step 1   To enter the unattended operating system installation function area, click **OS Install** in the left navigation pane.

The OS Install page appears.

Step 2   Click the **SLES** radio button and choose an operating system from the Operating System drop-down list.

The Default Settings area and the Quick Install and Custom Install buttons appear.

Step 3   Click **Custom Install**.

A progress bar is displayed that indicates the tasks being performed and the percentage of completion. A new OS Install page appears with the following list of collapsible windows:

- Basic Configuration—To set the personalization settings, go to Basic Configuration, page 7-13.
- Installation Partitions—To set the installation partition settings, go to Installation Partitions, page 7-8.
- Package Selection—To set the package selection settings, go to Package Selection, page 7-13.
- Network Settings—To set the network settings, go to Network Settings, page 7-13.
- Installation Drivers—To set the driver settings, go to Installation Drivers, page 7-10.

Step 4   Click **Install**.

A progress bar is displayed that indicates the tasks being performed and the percentage of completion. An OS Install dialog box appears.

Step 5   Click **Ok**.

Step 6   Remove the UCS-SCU media and insert the required operating system CD.

Basic Configuration

To configure the basic configuration settings, follow these steps:

Step 1   Click **Basic Configuration** to open the corresponding window.

Step 2   In the Basic Configuration window, do the following:

- In the Root Password field, enter the root password.

- In the Confirm Root Password, reenter the root password.
- From the Default Language drop-down list, choose a default language.
- From the Keyboard drop-down list, choose the type of keyboard layout.
- From the Time Zone drop-down list, choose the time zone.

Package Selection

To configure the package selection settings, follow these steps:

Step 1   Click **Package Selection** to open the corresponding window.

Step 2   Select all check boxes that apply.

Network Settings

To configure the network settings, follow these steps:

Step 1   Click **Network Settings** to open the corresponding window.

The Network Settings window displays the link status of available network interfaces and the corresponding IP address, subnet mask, gateway, DNS, link status, vendor, type, and MAC address.

Step 2   To edit the Network Settings, do the following:

a.   Select a network interface and click **Edit.**

The Network Settings dialog box displays.

b.   In the Network Settings dialog box, do the following:

- Select IP Address from DHCP server or Static IP Address. If you select Static IP Address, do the following:
    - In the IP Address field, enter the IPv4 address
    - In the Subnet Mask field, enter the subnet IPv4 address.
    - In the Gateway field, enter the gateway IPv4 address.
    - In the DNS field, enter the DNS IPv4 address.

- Click **OK**.