



Installation Guide for Cisco Business Edition 6000 H/M, Release 11.5

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Introduction

- [Who Should Use this Guide?](#), page 1
- [Server Installation Documents](#), page 2
- [Platform Model Options](#), page 2

Who Should Use this Guide?

This guide is intended to be used by Cisco partners who are planning to install a Cisco Business Edition 6000 H/M Unified Communications appliance. This guide contains the tasks that you must complete to install the software.

The following table outlines each of the ordering and deployment options that are available. Choose the option that matches your requirements.

Table 1: Installation Guide Usage for each Deployment Option

| Deployment Option | Use this guide? |
|-------------------|--|
| Config To Order | If you ordered your server via the Config To Order Portal (CTOP), your server arrives with core UC applications pre-installed. Use this guide to install and configure additional UC applications, if required. |
| Customized | Use this guide to customize your installation. |



Note

The Pre-configured option is not available for BE Series version 11.5 and later.

Server Installation Documents

The following diagram illustrates the documents that are available for Cisco Business Edition 6000 installation and how each fits into the setup process when in the setup process.

The following documents are available:

- *Quick Start Guide*—Use this guide to unpack the server and install it in a rack.
- *Installation Guide for Cisco Business Edition 6000*—Use this guide to install application software on the Business Edition server.
- *UC Applications Installation and Configuration Documents* — Click on the BE 6000 Version [here](#), and then click on the Component Documentation tab to access the relevant documents to install or configure other UC applications.

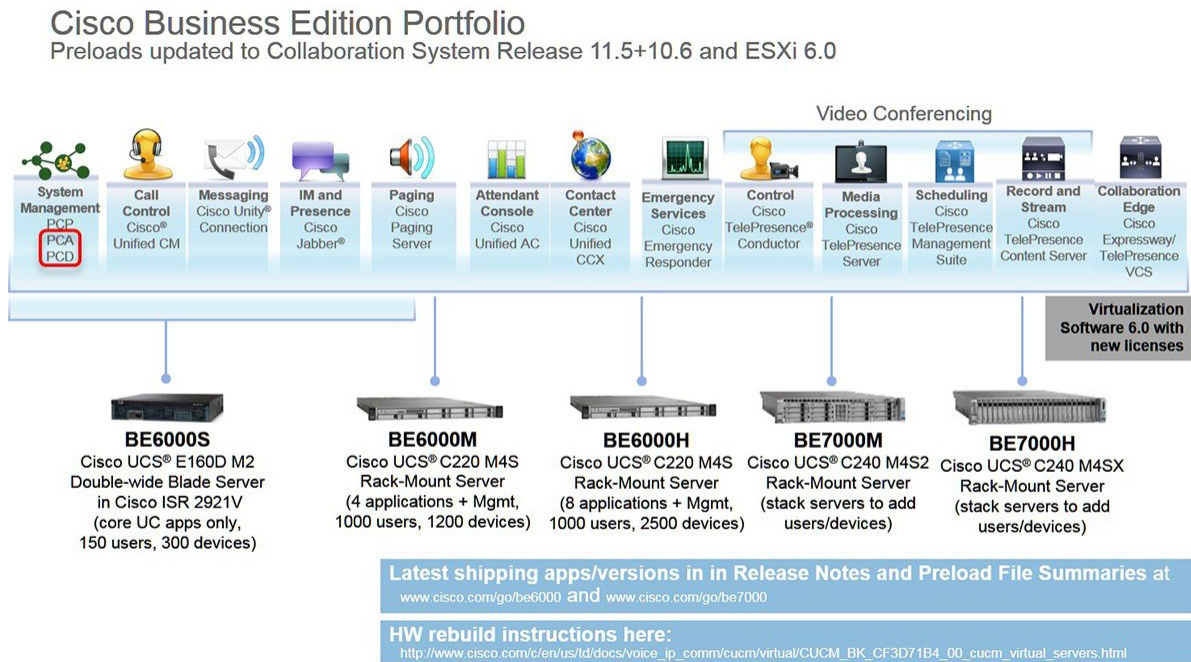
Platform Model Options

Cisco BE6000 platforms are built on virtualized Cisco Unified Computing System™ (Cisco UCS®) products, which are designed for performance and density over a wide range of company sizes and business workloads. There are three models:

- BE6000H: Supports nine collaboration application options in a single virtualized server platform; maximum capacity of 1000 users, 2500 devices, and 100 contact center agents. Ideal for medium-scale end-to-end collaboration deployments
- BE6000M: Supports five collaboration application options in a single virtualized server platform; maximum capacity of 1000 users, 1200 devices, and 100 contact center agents. Ideal for medium-scale end-to-end collaboration deployments.

- BE6000S: Supports five fixed collaboration applications on an integrated router/gateway/virtualized blade server platform; maximum capacity of 150 users and 300 devices. Ideal for small-scale "office in a box" collaboration deployments

Figure 1: Cisco Business Edition 6000 and 7000 Series



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CHAPTER 2

Pre-installation

- [Before You Begin, page 5](#)
- [Pre-installation Task Flow, page 5](#)

Before You Begin

Your Cisco Business Edition 6000 server should already be rack-mounted and connected to power and data networks. For instructions, refer to the *Quick Start Guide for Cisco Business Edition* that was packaged with your server. You can also download a copy at:

<http://www.cisco.com/c/en/us/support/unified-communications/business-edition-6000/products-installation-guides-list.html>

Pre-installation Task Flow

Review the following topics before you begin your installation.

Procedure

| | Command or Action | Purpose |
|---------------|---|---|
| Step 1 | Plan your UC Applications, on page 6 | Plan which UC applications you want to install. |
| Step 2 | Collect Required Network Information, on page 7 | Collect the required network details for your installation. You will need information such as IP addresses and DNS information when you install the software. |

Plan your UC Applications

Before you begin any installation, plan which UC applications you are going to install.

**Note**

If you are using the Config to Order Portal (CTOP) to order your server, you must plan and specify the UC applications before submitting the CTOP configuration.

For information on the UC applications that are available for installation, and on how to design your Business Edition collaboration deployment refer to the following sites:

- *Cisco Business Edition 6000 and Cisco Business Edition 7000 Co-residency Policy Requirements*—This document contains information on the Cisco virtualized applications that are available for installation on a Cisco Business Edition 6000 system and the conditions that you must meet to run those applications and any third-party applications on a Business Edition server.

<http://www.cisco.com/c/en/us/support/unified-communications/business-edition-6000/products-device-support-tables-list.html>

- *Unified Communications in a Virtualized Environment*—This wiki site contains information on Cisco's catalog of UC applications and provides information on how to design your deployment.

<http://www.cisco.com/go/uc-virtualized>

- *Preferred Architecture Guides for Midmarket*—Preferred Architecture documents and CVD guides offer prescriptive, end-to-end system solutions for Collaboration and Voice deployment. The design overviews provide a basic understanding of the products and their roles in the Preferred Architectures, including high-level best practices. The CVD guides provide more detailed design and deployment recommendations that help streamline the implementation of Preferred Architectures

<http://www.cisco.com/c/en/us/solutions/enterprise/design-zone-collaboration/index.html>

- *Midmarket Collaboration CVD Guides*—Midmarket CVDs provide detailed design and step-by-step deployment information for collaboration solutions built on the Cisco Business Edition 6000. These CVDs are based on the core recommendations of the Preferred Architectures, and in some cases, they offer additional solution designs as extensions or alternatives to the Preferred Architectures.

<http://www.cisco.com/c/en/us/solutions/enterprise/design-zone-collaboration/index.html>

Pre-deployed Applications

If you did not configure your server using the CTOP service, you will find the following applications pre-deployed on the server, ready for you to complete installation as required.

- Cisco Unified Communications Manager
- IM and Presence Service
- Cisco Unity Connection
- Cisco Prime Collaboration Provisioning
- Cisco Paging Server

You can follow the procedures in this guide to install additional applications.

Collect Required Network Information

Before you begin the installation, collect the following network information for your solution.

Table 2: Network Settings to Collect for New Installations

| Deployment | Collect the following information: |
|-----------------|--|
| Config To Order | Network settings are already configured for CTOP prepared servers. Proceed to the next step. |
| Customized | <p>Collect the following network settings for your installation:</p> <ul style="list-style-type: none"> • Subnet mask • Gateway IP Address • VMware Hypervisor ESXi IP address • Cisco Integrated Management Controller (CIMC) IP address • UC application IP addresses • DNS server IP address • UC application hostnames • (Optional) Domain name • NTP server IP address • Time zone • (Optional) SMTP server <p>Note For a validated network design, see the <i>Unified Communications Using Cisco BE6000</i> Cisco Validated Design (CVD) at http://www.cisco.com/c/en/us/solutions/enterprise/design-zone-collaboration/index.html.</p> |



Installation

- [Installation Overview, page 9](#)
- [Installation Task Flow, page 10](#)

Installation Overview

This chapter describes the tasks that you must perform to install software on your Business Edition 6000 server. It contains two main task flows that describe how to install software on the server.

For Customized deployments, use the tasks in this chapter to configure VMware and install application software on your server.

If your server was ordered via the Config To Order Portal, your server is already installed with VMware and UC applications. Complete only those tasks that are required to install your additional UC applications.

Preloaded File Types in the Datastore

In addition to pre-deployed virtual machines, Cisco Business Edition servers are shipped with selected Collaboration application software that is pre-loaded on the datastore. Following is a breakdown of the file types for application installs:

- **ISO Files**—An ISO file is a DVD image containing application install files (for example, `Bootable_UCSInstall_UCOS_11.0.1.20000-2.sgn.iso`). An ISO file is present for a UC application only if the OVA file for that application does not include the application software.
- **OVA Files**—Each UC application has an associated Open Virtualization Archive (OVA) file, which is used to package and deploy the virtual machine. There are two types of OVAs for Business Edition servers:
 - Some OVAs are templates that define the VM, but do not include any application software. For those applications, there is an associated ISO file in the datastore (for example, `cucm_11.5_vmv8_v1.0.ova` and associated ISO file `Bootable_UCSInstall_UCOS_11.0.5.10000-6.sgn.iso`). For the installation, you must deploy the OVA template and install the software using the associated ISO file.

- Other OVA files define the VM and include the application software (for example, `cpc-provisioning-11.2.0-523-small.ova`). For these applications, there is no ISO file. You can deploy the VM and install the software using the OVA file.

For information on which ISO and OVA files are pre-loaded in your server's datastore, refer to the preload summary for your server at <http://www.cisco.com/c/en/us/support/unified-communications/business-edition-6000/products-release-notes-list.html>.

**Note**

Cisco recommends that you archive the OVA-ISO directory locally. If a server fails, the replacement product will not include pre-loaded content.

Installation Task Flow

Perform the following tasks to install software on your Cisco Business Edition 6000 server.

Procedure

| | Command or Action | Purpose |
|---------------|--|--|
| Step 1 | Configure Cisco Integrated Management Controller, on page 11 | Configure CIMC for your Business Edition 6000 server. |
| Step 2 | Configure VMware vSphere Hypervisor, on page 13 | Configure the ESXi Virtualization Hypervisor host on the Business Edition 6000 server. |
| Step 3 | Delete VMs, on page 20 | Delete any pre-deployed VMs that you do not require. Note For servers ordered via the Config To Order Portal, you can skip this step. |
| Step 4 | Deploy Virtual Machine OVAs, on page 21 | Deploy virtual machine OVAs for each UC application that you want to install. |
| Step 5 | Customize VM for Cisco Unity Connection, on page 22 | If your Business Edition 6000 deployment includes Cisco Unity Connection, customize the Unity Connection VM. |
| Step 6 | Associate Application ISO Files to VM, on page 23 | For UC application installations that require an ISO file, mount the ISO file on the application VM. Note For a list of applications that use ISO installation files, see the Preload Summary for your server. |
| Step 7 | Install UC Applications Using Touchless Installation, on page 24 | Optional. Use touchless installation to install any of the following core UC applications: <ul style="list-style-type: none"> • Cisco Unified Communications Manager • IM and Presence Service • Cisco Unity Connection • Cisco Unified Contact Center Express |

| | Command or Action | Purpose |
|---------------|--|--|
| | | Note If you prefer, you can use manual installation for these applications. |
| Step 8 | Install UC Applications Manually, on page 28 | Use the manual interactive process to install any remaining UC applications. |

Configure Cisco Integrated Management Controller

Cisco Integrated Management Controller (CIMC) is the management interface for the Cisco UCS Server. CIMC runs within the server, allowing remote administration, configuration, and monitoring of the server via web or SSH command line access.

Complete the following tasks to configure CIMC on a Business Edition 6000 server for customized and pre-configured deployments.



Note

If you ordered your server via the Config To Order Portal, CIMC is already set up on your server. Skip to [Configure VMware vSphere Hypervisor, on page 13](#).

Procedure

| | Command or Action | Purpose |
|---------------|---|---|
| Step 1 | Power On and Initial CIMC Setup, on page 11 | Power on the server and configure basic CIMC IP addressing details. |
| Step 2 | Complete the CIMC Configuration, on page 13 | Configure DNS and NTP settings for the CIMC interface. |

Power On and Initial CIMC Setup

Use this procedure to power on the server and begin basic Cisco Integrated Management controller (CIMC) configuration.

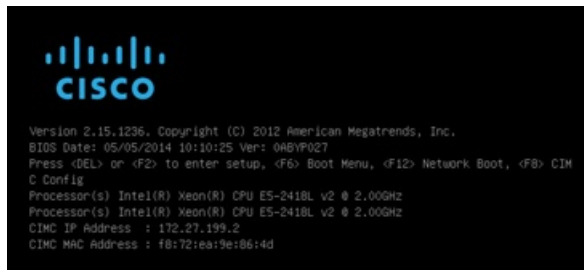
Before You Begin

Ensure that the BE6000 server has been rack-mounted, connected to a power supply, connected to the data network, and that a monitor and keyboard are connected to the server, as described in the *Quick Start Guide*.

Procedure

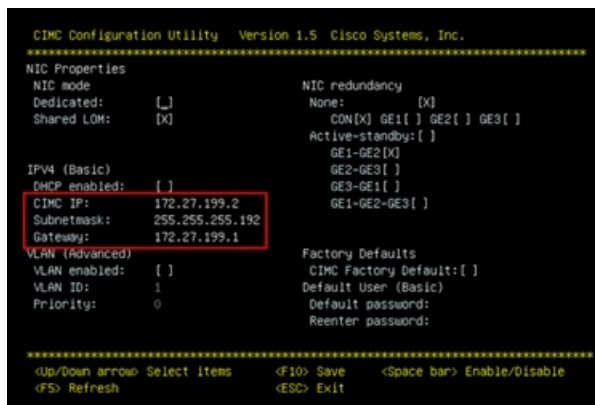
- Step 1** Verify that power is connected and that the power button LED is orange.
- Step 2** Push the server power button and verify that it changes to green
- Step 3** Watch the boot process on the monitor.
- Step 4** When the blue Cisco logo appears, press **F8** to enter the CIMC configuration dialog.

Figure 2: Press F8 at the CIMC Boot Screen



- Step 5** When prompted, enter the username `admin` and create a new password.
- Step 6** On the CIMC configuration screen, complete the following details:
 - CIMC IP address
 - Subnet mask
 - Gateway IP address

Figure 3: Enter the CIMC IP Address Details



- Step 7** When complete, press **F10** to save your changes and boot the system.

What to Do Next

[Complete the CIMC Configuration, on page 13](#)

Complete the CIMC Configuration

Use this procedure to configure DNS and NTP settings in the CIMC interface.

Procedure

-
- Step 1** In a web browser, enter the CIMC IP address and log in with the username `admin` and the password that you created in the previous task.
 - Step 2** From the left hand menu, select the **Admin** tab, and click **Network**.
 - Step 3** In the main screen, select the **Network Settings** tab.
 - Step 4** From **Common Properties**, change the **Hostname** setting to the CIMC hostname.
 - Step 5** From **IPv4 Properties**, change **Preferred DNS Server** to the IP address that you have specified for the DNS server.
 - Step 6** In the main screen, select the **NTP Settings** tab.
 - Step 7** Check the **Enable NTP** check box.
 - Step 8** In the **Server 1** field, enter the NTP server IP address.
 - Step 9** Select **Save Changes** from the bottom right hand corner of the page.
-

Configure VMware vSphere Hypervisor

Complete the following tasks to set up the VMware vSphere Hypervisor.

Procedure

| | Command or Action | Purpose |
|---------------|---|---|
| Step 1 | Customize VMware vSphere Hypervisor Remote Access, on page 13 | Customize your VMware vSphere Hypervisor to allow remote access using vSphere client. |
| Step 2 | Access and Configure VMware vSphere Hypervisor, on page 18 | Configure your VMware vSphere Hypervisor with NTP settings and fault tolerance. |

Customize VMware vSphere Hypervisor Remote Access

Follow this procedure to customize the Virtualization Hypervisor (VMware vSphere Hypervisor) to enable remote access from your PC using the vSphere client.



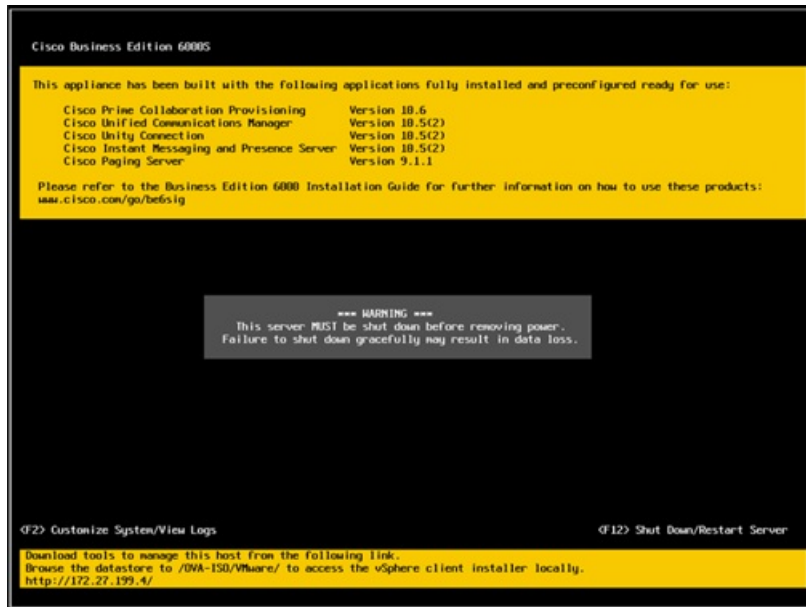
Note

For servers ordered via the Config To Order Portal, skip to [Step step 5](#).

Procedure

- Step 1** When the hypervisor boots, the ESXi Direct Console User Interface displays on the monitor as shown in the following figure

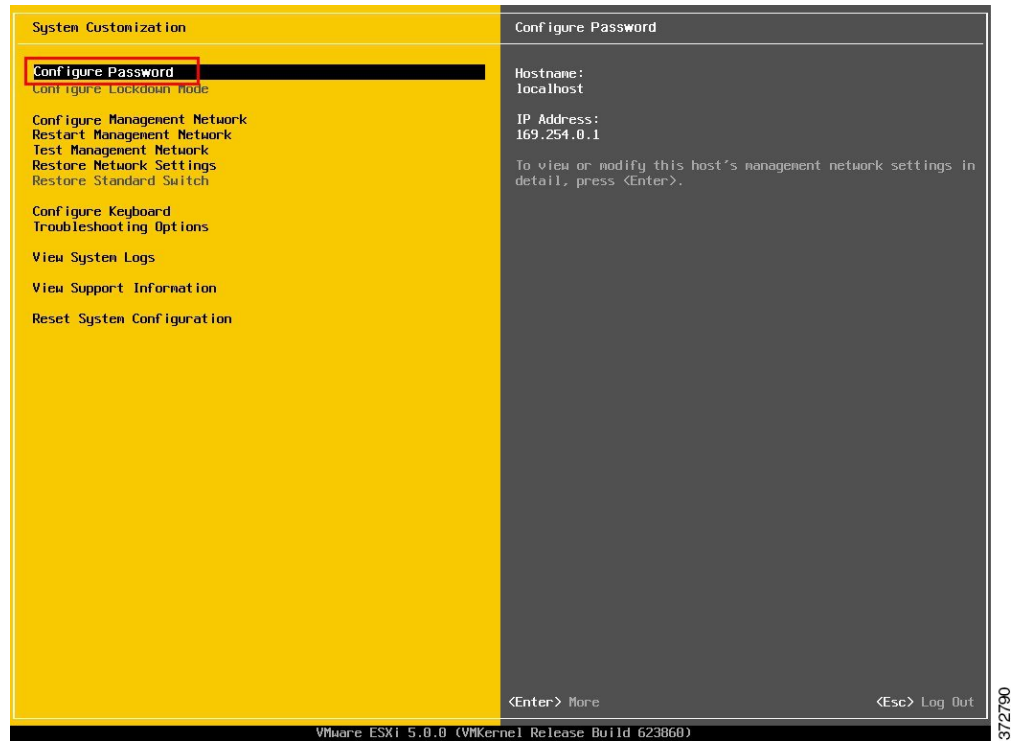
Figure 4: Console Screen After ESXi Loads



- Step 2** Press **F2** to enter the System Customization menu as shown in the following figure.

The default username is `root` and password is `password`.

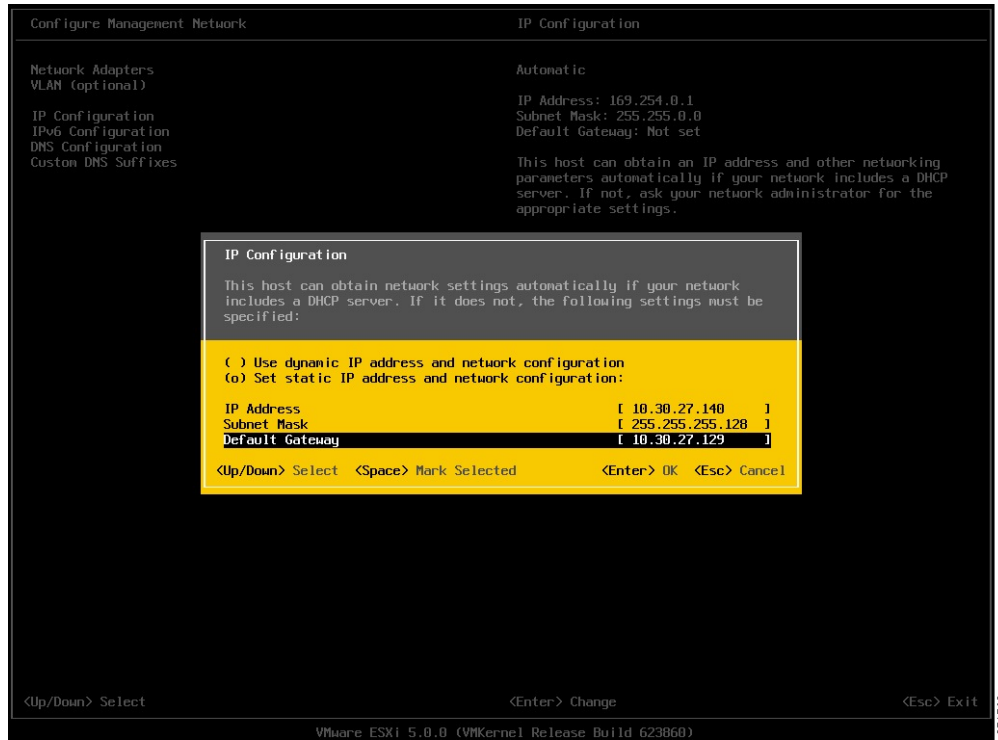
Figure 5: ESXi System Customization Menu



- Step 3** Choose **Configure Password** to change the password.
If your applications are pre-deployed, skip to [Step step 5](#).

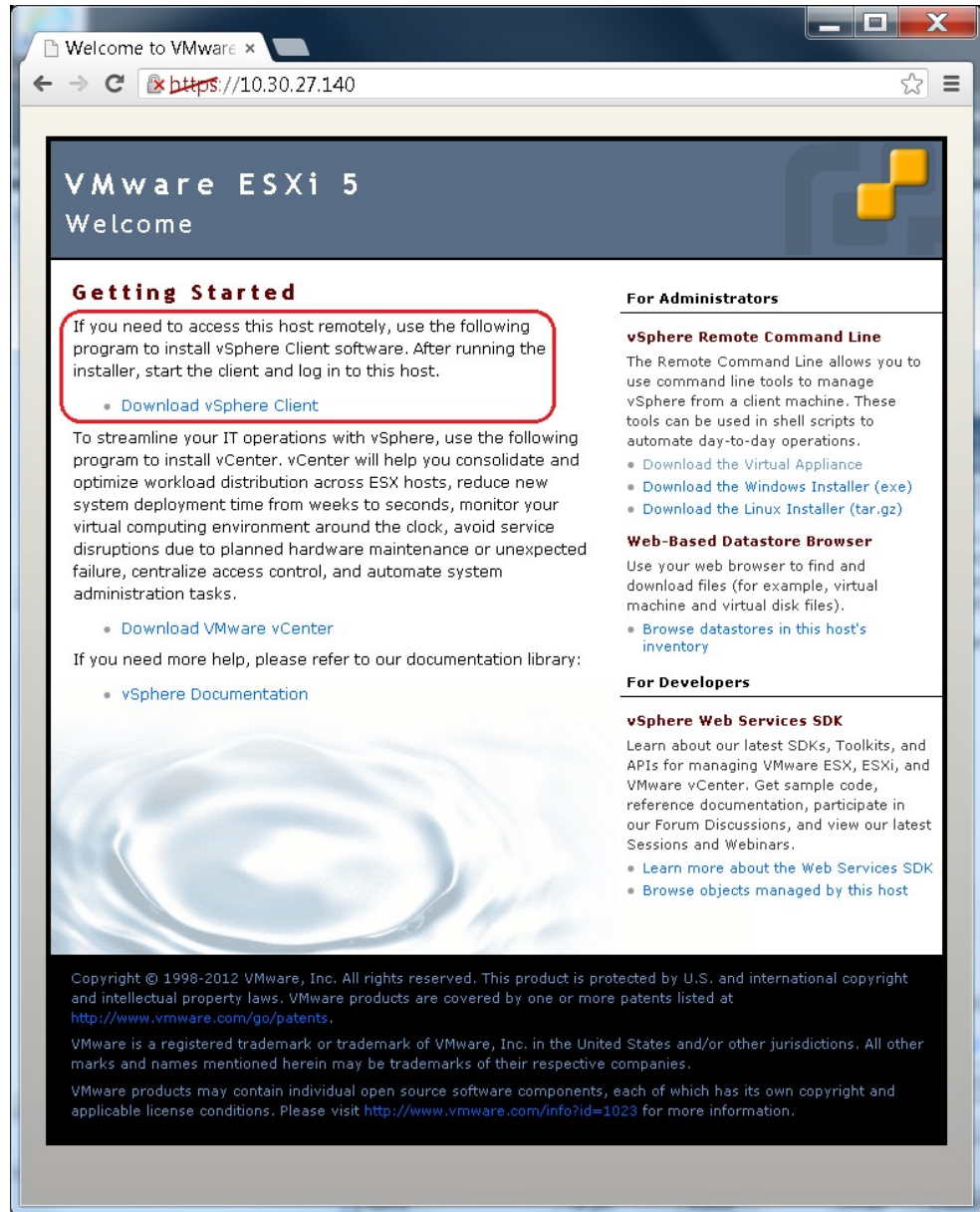
Step 4 To assign a static IP address, select the **Configure Management Network** menu, and follow the instructions on screen to change “IP Configuration” as shown in the figure below.

Figure 6: Assign Static IP Address to ESXi Host



- Step 5** Connect your PC to the data network, and browse to the new hypervisor IP address. Verify the web page as shown in the figure below.

Figure 7: Hypervisor Welcome Page



- Step 6** If not already installed on your PC, download and install the vSphere client. The vSphere client can be downloaded from the internet, or accessed in the datastore.

What to Do Next

[Access and Configure VMware vSphere Hypervisor](#), on page 18

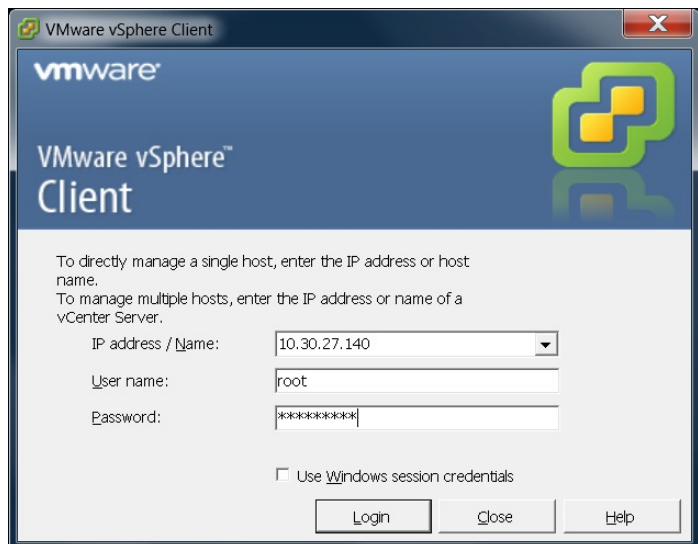
Access and Configure VMware vSphere Hypervisor

Some Business Edition applications require the host to have a valid time reference. Follow these steps to access the ESXi host to configure NTP as well as configure fault tolerance for network interface cards (NICs) using the NIC teaming feature, view preinstalled applications, and browse the datastore to verify the preloaded collaboration application software.

Procedure

- Step 1** Launch the vSphere client application and type the IP address of the VMware vSphere Hypervisor.

Figure 8: Access VMware vSphere Hypervisor Using vSphere Client



- Step 2** Use the login credentials that you previously configured.
- Step 3** (Optional) The Cisco UC Virtualization Hypervisor Plus license is pre-installed and is therefore ready for use on delivery. If you need to reapply or upgrade the license, follow these steps:
- If you have ordered a license upgrade, refer to the documentation provided with your order to obtain the license key. If using the virtualization hypervisor license, this is the Master Serial Number that is shipped with the server.

Note The Master Serial Number is pre-activated. You do not need to register it. The serial number is hardcoded for a two-CPU system. You cannot combine, change, or register it with other licenses.
 - Navigate to **Configuration > Software > Licensed Features**, and click **Edit**.
 - Select **Assign a new license key to this host**.
 - Click **Enter Key...**
 - Type in the Master serial number.

f) Click **OK** to close configuration dialogs and apply the license.

Step 4 Configure NTP settings:

- a) Navigate to **Configuration > Software > Time Configuration**.
- b) Click **Properties** to launch the **Time Configuration** screen.
- c) Update the Time.
- d) Click **Options...**
- e) Select **NTP Settings**.
- f) Click **Add** and type the IP address of NTP server. Repeat this step to add multiple NTP servers.
- g) Click **OK**.
- h) Select **General > Start and Stop with Host**.
- i) Click **Start** button. Click **OK** to close the configuration screens.

Step 5 Optional. Configure fault tolerance by using the NIC teaming feature in VMware:

- a) Navigate to **Configuration > Hardware > Networking**.
- b) Click **Properties** for “Standard Switch: vSwitch0,” as shown in the figure below.
- c) In the configuration screen **vSwitch0 Properties**, select the tab **Network Adapters**.
- d) Click **Add...** to add the NIC that is connected to data network.
- e) Follow the interactive configuration dialogs and close the configuration screens until you see two or more NICs are added to vSwitch0, as shown in the figure below.

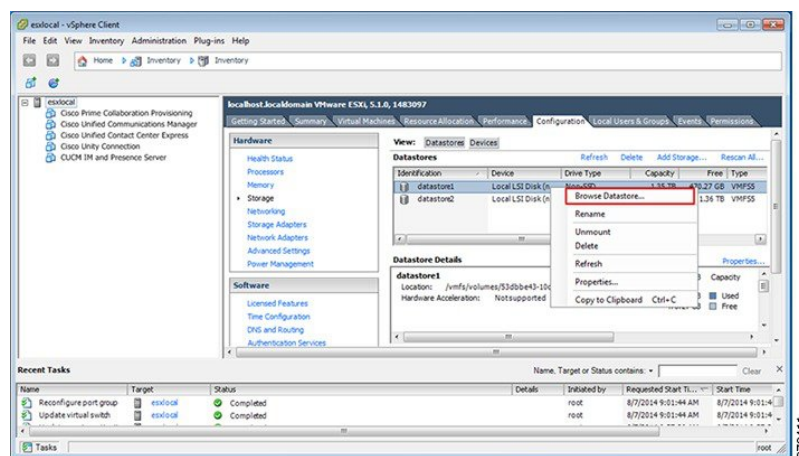
Note By default, only one NIC is enabled for the hypervisor and identified as vmnic0.

Note If connecting teamed NICs to a Cisco switch channel-group, ensure that the NIC teaming load balancing policy is set to **Route based on IP hash**. For more information about this policy and other aspects of hypervisor networking for Cisco Collaboration applications, see the Appendix, [Configure NIC Teaming for Business Edition 6000, on page 37](#).

Step 6 Browse the datastore:

- a) Navigate to **Configuration > Hardware > Storage**.
- b) Click **Datastore** to list the datastores in the Business Edition server.
- c) Select datastore1, then right-click and select **Browse Datastore** as shown in the following figure. Preloaded software is stored in the /OVA-ISO directory.

Figure 9: Browse Datastore to View Preloaded Collaboration Virtual Machines and Preloaded Software



- Step 7** (Optional) Cisco recommends that you archive the OVA-ISO directory locally. If a server fails, the replacement product does not include preloaded content.

What to Do Next

[Delete VMs, on page 20](#)

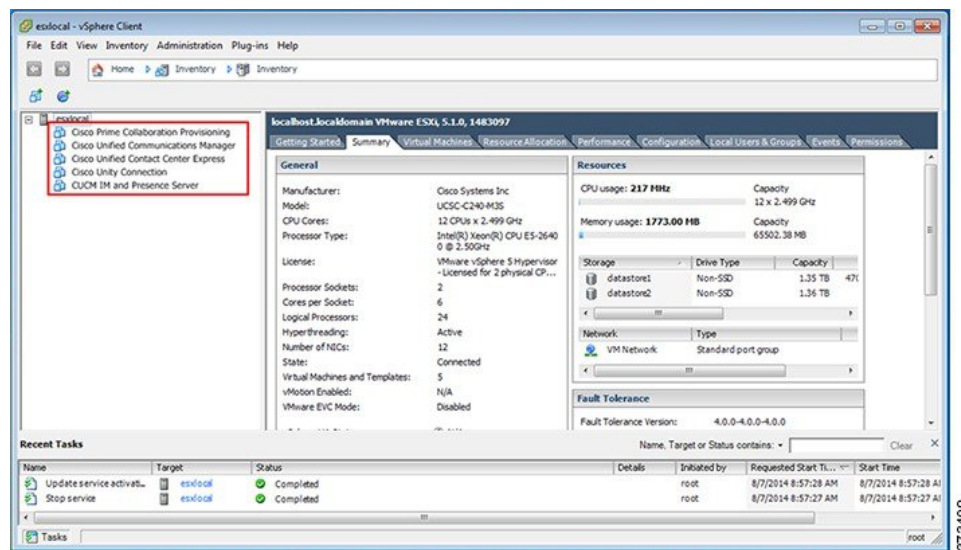
Delete VMs

If you want to use a different application version to those that have been pre-deployed, delete these virtual machines from the vSphere inventory and install the preferred version.

Procedure

- Step 1** Log in to vSphere Client.
- Step 2** Locate the virtual machine that you wish to delete.

Figure 10: Delete Any VMs that you are not Using



- Step 3** If the VM has a green triangle, right-click the icon and select **Power > Power Off**. The green arrow disappears as the VM powers off.
- Step 4** Right-click the VM and select **Delete From Disk**.
- Step 5** Repeat this procedure for each virtual machine that you wish to remove.

What to Do Next

See the next section to deploy Virtual Machines.

Deploy Virtual Machine OVA's

For each application that you want to install, deploy the appropriate virtual machine OVA file.

For Customized deployments, you must either use the default pre-deployed VMs, or deploy new instances if you are installing an older version. If you do not need to deploy any new VMs, you can skip forward to the next section.

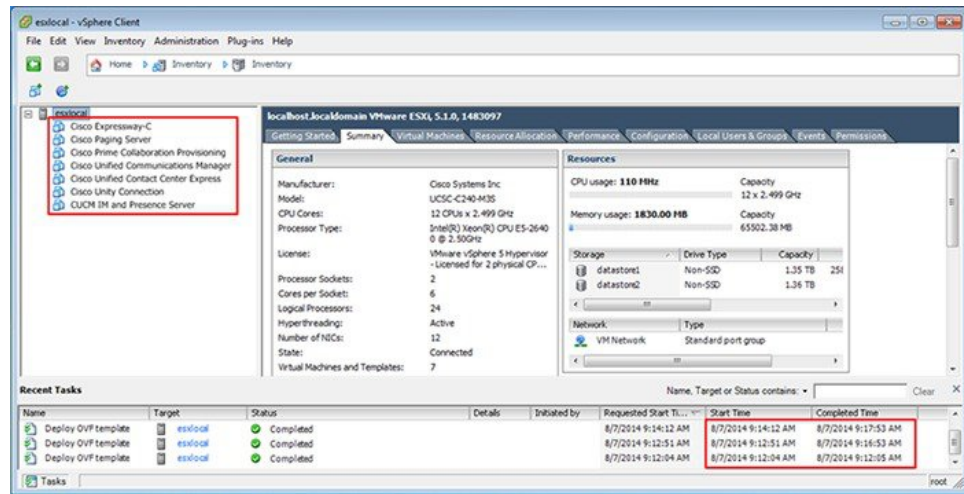
For Config To Order deployments, you need only deploy VMs for the additional applications that you want to install.



Note

The OVA template file defines the virtual machine for specific applications. OVA templates are deployed in seconds, while a packaged OVA may take longer to deploy.

Figure 11: Deployed Application VMs Viewed in vSphere Client



Procedure

Step 1 On the vSphere Client, navigate to **File > Deploy OVF Template**.

The Deploy OVF Template screen is launched.

- Step 2** Browse and select the source OVA template file on your PC. For application and filename mapping, see the Build Summary PDF in the datastore OVA-ISO directory, or download from here: <http://www.cisco.com/c/en/us/support/unified-communications/business-edition-6000/products-release-notes-list.html>.
 - Step 3** If prompted to accept license agreements, continue to click **Next**.
 - Step 4** Specify a meaningful name for the virtual machine.
 - Step 5** Select the appropriate virtual machine size for your deployment, if prompted.
 - Step 6** Set the remaining parameters, as required.
 - Step 7** If prompted for the **Disk Format**, specify **Thick Provision Lazy Zero**.
 - Step 8** Deploy VMs for all of your UC applications before proceeding to the next task.
-

What to Do Next

If your system includes Cisco Unity Connection, [Customize VM for Cisco Unity Connection](#), on page 22
Otherwise, [Associate Application ISO Files to VM](#), on page 23

Customize VM for Cisco Unity Connection

For Customized installations, use this procedure to configure your Cisco Unity Connection virtual machine settings to ensure optimum performance.

Pre-configure

Procedure

- Step 1** From the virtual machine inventory in the vSphere client, right click the **Unity Connection** entry and select **Edit Settings**.
 - Step 2** Click the **Options** tab.
 - Step 3** If installing a version earlier than 11.5, select the **Advanced > General** menu, and click **Configuration Parameters**. Click **Add Row** and complete the following details:
 - a) Enter **sched.cpu.latencySensitivity** in the **Name** column.
 - b) Enter **High** in the **Value** column.
 - Step 4** If you want to use Unity Connection, or Unified or Integrated Messaging, do the following:
 - a) Select the **Hardware** tab.
 - b) Select the **CPUs** menu and set the number of virtual sockets to **2**.
 - c) Select the **Resources** tab.
 - d) Select the **CPU** menu and increase the **Reservation** to **3598MHz**.
-

What to Do Next

[Associate Application ISO Files to VM](#), on page 23

Associate Application ISO Files to VM

If you have deployed a new VM template for any of the following applications, use this procedure to associate the ISO installation files that will be used to complete the installation. Otherwise, you can proceed to the installation tasks.



Note This step is not required for default pre-deployed VMs.

- Cisco Unified Communications Manager
- IM and Presence Service
- Cisco Unity Connection
- Cisco Unified Contact Center Express
- Cisco Emergency Responder



Note For an up to date list of installation files for your server, see the *Preload Summary* for your server in the datastore OVA-ISO directory or at: <http://www.cisco.com/c/en/us/support/unified-communications/business-edition-6000/products-release-notes-list.html>

Procedure

- Step 1** In the vSphere client, select the UC application virtual machine.
 - Step 2** Select **Inventory > Virtual Machine > Edit Settings**.
 - Step 3** From the **Hardware** tab, select **CD/DVD Drive**.
 - Step 4** Select **Datastore ISO File**.
 - Step 5** **Browse** to the datastore and locate the application ISO file.
 - Step 6** Select the file and click **OK**.
 - Step 7** Under **Device Status**, enable the **Connected and Connect at power on** option.
 - Step 8** Repeat this procedure for each application that you want to install that includes an ISO file.
-

What to Do Next

Install your UC applications using either of the following procedures:

- [Install UC Applications Using Touchless Installation](#), on page 24
- [Install UC Applications Manually](#), on page 28

Install UC Applications Using Touchless Installation

Touchless installation allows you to install multiple UC applications simultaneously, across hosts if required, without having to interact with the system while the install process runs. While you must prepare the system, touchless installation can save time, particularly if you want to install multiple applications. If you are installing only one or two applications, you may prefer to follow the manual procedure in the following section.

Use touchless installation to install the following applications:

- Cisco Unified Communications Manager
- IM and Presence Service
- Cisco Unity Connection
- Cisco Unified Contact Center Express
- Cisco Prime Collaboration Deployment - Follow step 2 onwards for installation.

Procedure

| | Command or Action | Purpose |
|---------------|--|--|
| Step 1 | Generate Answer Files, on page 24 | Generate answer files (AFG files) for UC applications. |
| Step 2 | Create Virtual Floppy Images, on page 25 | Use your AFG files to create virtual floppy images. |
| Step 3 | Upload Virtual Floppy Images to Datastore, on page 26 | Upload your virtual floppy images to the datastore. |
| Step 4 | Mount Virtual Floppy on VM and Set Boot Option, on page 27 | Mount each virtual floppy on the corresponding UC application VM. |
| Step 5 | Run Touchless Installation, on page 27 | Run the touchless installation of your UC applications. We recommend that you run your installations simultaneously. |

Generate Answer Files

Use this procedure to generate answer files for the touchless installation of your UC applications.



Tip

We recommend that you create application-specific folders (for example, UCM, IMP, CUC, CCX) in which to save the generated files so that you do not get the files mixed up.

Procedure

- Step 1** Go to the online answer file generator at: www.cisco.com/web/cuc_afg/.
- Step 2** From the **Product** drop-down menu, select the UC application for which you want to generate answer files.
- Step 3** Select the **Version** that you want to install.
- Step 4** Complete the remaining fields with the installation details that you want to configure on the server. For example, you can assign items such as passwords, IP addressing, and DNS settings.
- Step 5** Click **Generate Answer Files** to generate the `platformConfig.xml` file for that UC application. Each UC application generates a `platformConfig.xml` file. Cisco Unified Communications Manager also generates a `clusterConfig.xml` file.
- Step 6** Save the generated answer files as follows:
- For Cisco Unified Communications Manager, save both the `platformConfig.xml` and `clusterConfig.xml` files in the UCM folder.
 - For other UC applications, save the `platformConfig.xml` file in the relevant application folder.
- Step 7** Repeat these steps for each UC application for which you want to use touchless installation.
-

What to Do Next

[Create Virtual Floppy Images, on page 25](#)

Create Virtual Floppy Images

Use this procedure to create virtual floppy images from the answer files. You will use the virtual floppy images in your touchless installation.



Tip

We recommend that you follow the recommended naming conventions for your `.flp` files.

Before You Begin

You can use Winimage to create the virtual floppy images. You can download Winimage from <http://www.winimage.com/download.htm>. You can also use other tools, such as BFI, to create virtual floppy images.

Procedure

- Step 1** In Winimage, select **File > New**.
- Step 2** From the **Standard format**, select **1.44 MB** and click **OK**.
- Step 3** Drag the `platformConfig.xml` file for the UC application onto the Winimage window.
- Step 4** When prompted to inject the file into Winimage, click **Yes**.
- Step 5** Cisco Unified Communications Manager only. Drag the `clusterConfig.xml` file onto the Winimage window.
- Step 6** Select **File > Save As**.
- Step 7** Save the file as a virtual floppy image (.flp file) using the following naming conventions:
- Cisco Unified Communications Manager—`ucm.flp`
 - IM and Presence Service—`imp.flp`
 - Cisco Unity Connection—`cuc.flp`
 - Cisco Unified Contact Center Express—`ccx.flp`
- Step 8** Repeat this procedure for each UC application for which you want to use touchless installation.
-

What to Do Next

[Upload Virtual Floppy Images to Datastore, on page 26](#)

Upload Virtual Floppy Images to Datastore

Use this procedure to upload the virtual floppy images to the datastore.

Procedure

- Step 1** Start the vSphere client.
- Step 2** Select the **Configuration** tab.
- Step 3** Select **Storage**.
- Step 4** Right-click on a datastore and **Browse** the datastore.
- Step 5** Navigate to the destination directory and click the **Upload files to this datastore** icon.
- Step 6** Upload the vFloppy images to the `AFG` folder.
- Step 7** At the **Upload/Download** warning, click **Yes**.
- Step 8** Close the **Datastore Browser** window.
-

What to Do Next

[Mount Virtual Floppy on VM and Set Boot Option, on page 27](#)

Mount Virtual Floppy on VM and Set Boot Option

Use this procedure to mount the UC application virtual floppy images on their corresponding VM. This step is not required for pre-deployed VMs as they are already configured.

Procedure

- Step 1** In the vSphere client, select the UC application virtual machine.
 - Step 2** Select **Inventory > Virtual Machine > Edit Settings**.
 - Step 3** From the **Hardware** tab, select **Floppy drive**.
 - Step 4** Select **Use existing floppy image in datastore**.
 - Step 5** **Browse** to the datastore and locate the virtual floppy image.
 - Step 6** Select the file and click **OK**.
 - Step 7** Under **Device Status**, enable the **Connected and Connect at power on** option.
 - Step 8** Click the **Options** tab. Under **Boot Options**, check **Force entry to BIOS**, and then click **OK**.
 - Step 9** Repeat this procedure for each UC application for which you want to perform touchless installation.
-

What to Do Next

[Run Touchless Installation, on page 27](#)

Run Touchless Installation

After you have mounted your virtual floppy drives to your application VMs, run the touchless installation process. It's recommended that you run all of your touchless installations simultaneously.



Note

If your VM is pre-deployed, you need to perform step 6 only.

Procedure

- Step 1** In vSphere client, right-click the VM and select **Open Console**. A console window opens.
- Step 2** Click the **Power On** icon in the console tool bar to power on the virtual machine.
- Step 3** When the BIOS screen appears, configure the following boot order:
 - a) CD-Rom
 - b) Hard Drive
 - c) Removable Devices
 - d) Network
- Step 4** Save the settings and exit the console.

The UC application installation commences immediately.

Step 5 Repeat these steps for each UC application that you want to install.

Step 6 Once the installations are complete, remove the vFloppy configurations from the virtual machines.

What to Do Next

Use the manual method to install any remaining UC applications in the next section.

Install UC Applications Manually

Use this procedure to follow the interactive install process to install any UC applications that do not have a touchless install option such as Cisco Emergency Responder.



Note For details specific to Cisco Prime Collaboration Provisioning or Cisco TelePresence Video Communications Server installations, refer to:

- [Complete Other Applications Installation](#) , on page 29
- [Complete Cisco Expressway Installation](#), on page 29



Note If you want to use this method to install both Cisco Unified Communications Manager and IM and Presence Service, you must complete the installation of the Unified Communications Manager publisher first.

Procedure

Step 1 In vSphere Client, power on the VM for the application that you want to install.

Step 2 Right-click the VM, and choose **Open Console**.
A console window appears.

Step 3 Follow the screen prompts to install the application from the console.

Step 4 If you are using the manual method to install both Cisco Unified Communications Manager and IM and Presence Service, once the Cisco Unified Communications Manager publisher node installation completes, do the following:

- a) From the vSphere console, log in to the Cisco Unified Communications Manager CLI.
- b) Run the `set network cluster subscriber dynamic-cluster-configuration 24` command.
- c) Open a vSphere console window for the IM and Presence or subscriber virtual machine.
- d) **Power On** the virtual machine.
- e) Enter the configuration information for the application to complete the installation.

Step 5 Repeat this procedure for each UC application that you want to install.

Complete Packed Virtual Machine (OVA) Installation

Complete Other Applications Installation

Use this procedure to complete installation of Cisco Prime Collaboration Provisioning, Cisco Prime Collaboration Assurance and Analytics Business, or Cisco Prime Collaboration Deployment .

Procedure

- Step 1** In vSphere client, power on the VM that you deployed for the respective Prime Collaboration applications (Cisco Prime Collaboration Provisioning, Cisco Prime Collaboration Assurance and Analytics Business, or Cisco Prime Collaboration Deployment).
 - Step 2** Right-click the VM and choose **Open Console**.
A console window appears.
 - Step 3** At the login prompt, type **setup**.
 - Step 4** Follow the prompts to complete the installation.
-

Complete Cisco Expressway Installation

Use this procedure to complete installation of Cisco Expressway.



Note For detailed documentation on installing and setting up Cisco Expressway refer to <http://www.cisco.com/c/en/us/support/unified-communications/expressway-series/products-installation-guides-list.html>.

Procedure

- Step 1** Power on and open the console of the virtual machine.
- Step 2** At the login prompt, enter admin for username and TANDBERG for the password.
- Step 3** At the Run Install Wizard prompt, type Y and press Enter.
- Step 4** To change the password, type Y and press **Enter**.
- Step 5** At the prompt, type the new password, and click **Enter**.
- Step 6** In the next series of prompts, configure the following network details:
 - IP Protocol (Default is IPv4)
 - IP address
 - Subnet mask
 - Default gateway IP address

- Ethernet speed of the LAN (Default is auto)

Step 7 For the Run SSH (Secure shell) daemon, type Y and press **Enter**.

Step 8 At the Restart Now prompt, type Y and press **Enter**.

Step 9 After the system reboots, access the Cisco Expressway in a web browser.



CHAPTER 4

Post-installation

- [Post-installation Task Flow, page 31](#)

Post-installation Task Flow

Procedure

| | Command or Action | Purpose |
|---------------|---|---|
| Step 1 | Set up Applications and Apply Licenses, on page 31 | Follow these steps to perform first-time setup and apply licenses for your UC applications. |
| Step 2 | Install Locales or Patches for Applications, on page 32 | Optional. Install new locales for your UC applications. |
| Step 3 | Where to Go Next, on page 35 | After you have completed your installation, find out where to go next. |

Set up Applications and Apply Licenses



Note This procedure applies to application licenses, not VMware licenses.

Follow these steps to access each application, perform first-time setup for some applications, and apply the licenses.

Procedure

- Step 1** To access the administration portal for each individual application, browse to the IP address of application. Consider the following information:

- Optional. For Paging Server installations: Collect information about the application URL from the virtual machine console. The default first-time username and password are admin and changeMe.
- Cisco Prime Collaboration Provisioning: Browse to the IP address and use globaladmin as the username.

Step 2 After you purchase an application license, Cisco sends a Product Authorization Key (PAK) via mail or email. You can use the PAK to generate a license key for your specific installation using the Cisco Product License Registration portal at www.cisco.com/go/license or you can enter the information directly in Cisco Prime License Manager.

Step 3 Apply license keys using the application administration portal. Refer to the following points for licensing information specific to whichever applications that you have installed:

- Cisco Prime Collaboration Provisioning: No license is required to use Cisco Prime Collaboration Provisioning Standard Edition. You may purchase an upgrade to Cisco Prime Collaboration Provisioning Advanced Edition if required.
- Paging Server: No license is required to use Basic Paging Server. You may purchase an upgrade to Advanced Edition if required.
- Unified Communications Manager, Cisco Unity Connection, and Cisco Emergency Responder: Browse the IP Address of Unified Communications Manager and click **Cisco Prime License Manager**. Select **License > Install License File** and follow instructions. Having installed your licenses, add application instances for your UCM Publisher, Unity Connection and Emergency Responder VMs.

Note Cisco Prime License Manager (PLM) gets installed automatically as part of the Cisco Unified Communications Manager and Cisco Unity Connection installation. Use only the instance that is installed with the Unified Communications Manager publisher to manage all of your licenses. Do not use separate Prime License Manager instances to manage Unified Communications Manager and Unity Connection licenses separately. For details, see the *Cisco Prime License Manager User Guide* at: <http://www.cisco.com/c/en/us/support/cloud-systems-management/prime-license-manager/products-user-guide-list.html>.

Related Topics

- [Product License Registration](#)
- [Cisco Product Upgrade Tool \(PUT\)](#)

Install Locales or Patches for Applications

Complete the following tasks to install locales or patches for your application VMs.



Note

- Patches shipped with the server were current at the time of manufacture. Visit <http://software.cisco.com> for more recent updates.
 - For additional information on locales, refer to the Phone Locale Installers wiki at: <http://docwiki.cisco.com/wiki/Cucm-phone-locale-installers>.
-

Procedure

| | Command or Action | Purpose |
|---------------|---|---|
| Step 1 | Associate Bundled Locale or Patch ISO with VM, on page 33 | Associate the locale or patch installer with the appropriate VM. |
| Step 2 | Stop Services for Unity Connection, on page 33 | If you want to install locales or patches for Cisco Unity Connection, stop the services before you install the locale or patch. |
| Step 3 | Install New Locales and Patches, on page 34 | Install the locale or patch on the VM. |

Associate Bundled Locale or Patch ISO with VM

Use this procedure to associate your locale or patch images with the appropriate application VM before starting the install process.

Procedure

-
- Step 1** In vSphere client, select the VM on which you want to install a new locale or patch.
 - Step 2** Select **Inventory > Virtual Machine > Edit Settings**.
 - Step 3** From the **Hardware** tab, select **CD/DVD Drive**.
 - Step 4** **Browse** to the datastore OVA-ISO directory and select the appropriate locale or patch ISO file.
 - Step 5** Click **OK**.
 - Step 6** Under **Device Status**, enable the **Connected** option.
 - Step 7** Repeat this procedure for each VM for which you want to install a new locale or patch.
-

What to Do Next

If you want to install a locale or patch for Cisco Unity Connection, [Stop Services for Unity Connection, on page 33](#)

Otherwise, proceed to [Install New Locales and Patches, on page 34](#)

Stop Services for Unity Connection

Use this procedure if you want to install a new locale or patch for Cisco Unity Connection. You must stop services on the Unity Connection VM before you install a new locale or patch.

Procedure

Step 1 Log in to Cisco Unity Connection Serviceability.

Step 2 Choose **Tools > Service Management**.

Step 3 Stop the following services:

- Connection Conversation Manager
 - Connection Mixer
-

What to Do Next

[Install New Locales and Patches](#), on page 34

Install New Locales and Patches

Use this procedure to install a new locale or patch for any UC applications on your Business Edition server.



Note

- For Cisco Unified Communications Manager, you must install locales or patches for the publisher node and restart it before you install it for any subscriber nodes.
 - You can install locales for Cisco Unified Communications Manager and Cisco Unity Connection in parallel.
-

Procedure

Step 1 Log in to Cisco Unified Communications OS Administration.

Step 2 Navigate to **Software Upgrades > Install/Upgrade**. The **Software Installation/Upgrade** window displays.

Step 3 From the **Source** drop-down list box, choose **DVD/CD**.

Step 4 Click **Next**.

Step 5 Select the update file that you want to install and click **Next**.

Step 6 After the download completes, click **Next**.

Step 7 After the locale or patch installs, restart the server:

- a) Log in to vSphere Client.
 - b) Right-click the VM on which you installed the locale or patch and select **Power > Restart Guest**
-

Where to Go Next

After you install your Cisco Business Edition 6000 server, you can provision users, devices and configure features on the system. Refer to the following guides available at <http://www.cisco.com/c/en/us/support/unified-communications/business-edition-6000-version-11-5/model.html#~tab-component-documentation>:

- *Cisco Prime Collaboration Provisioning Guide for Cisco Business Edition 6000*
- *Cisco Prime Collaboration Assurance and Analytics Business Guide*
- *Cisco Prime Collaboration Deployment Administration Guide*



Configure NIC Teaming for Business Edition 6000

- [NIC Teaming, page 37](#)
- [Configure NIC Teaming, page 38](#)

NIC Teaming

The Hypervisor NIC teaming feature allows multiple physical adapters to be associated with a vSwitch to provide load sharing and failover connectivity to the external network.

Failover and Load Balancing

When additional physical adapters are assigned to a vSwitch, they may be assigned as either active or standby. Depending on the way in which the server is connected to the physical network, traffic from virtual machines may be load balanced across active connections and, in the event of a link failure, a standby adapter will be made active to take over.

Switched Network Topologies

To maximize resiliency to failure, teamed interfaces are typically connected to different switching equipment. This might involve connecting to separate line cards in a chassis, switches in a stack, or to completely independent devices.

Where independent physical switches are used, teamed interfaces should be set to active, allowing the Ethernet Spanning Tree protocol to block connections that create a loop. In the event of a link or switch failure, the Spanning Tree protocol will reconverge to use a serviceable connection to the server. Where VLAN trunking is used, the Spanning Tree protocol can typically be configured per VLAN to prefer different connections for DMZ and internal network traffic under normal operation.

If connections are made to a common logical switch (i.e. chassis or cluster) that supports IEEE 802.3ad link aggregation, it is possible to load balance traffic across all active members of the link group under normal operation. Link aggregation can accommodate link failures more quickly than Spanning Tree and is transparent to VLANs, so may be used with either dedicated network, or VLAN trunk connections.

The following table illustrates how Business Edition servers may accommodate network separation and NIC teaming.

Configure NIC Teaming

Procedure

| | Command or Action | Purpose |
|---------------|---|--|
| Step 1 | Configure NIC Teaming on Switch, on page 38 | Configure NIC Teaming on a Cisco Catalyst switch. |
| Step 2 | Configure NIC Teaming in ESXi, on page 39 | Configure NIC Teaming for your Hypervisor Virtualization ESXi. |

Configure NIC Teaming on Switch

When aggregating server interfaces, the switch ports to which they are connected must be configured to use 802.3ad link aggregation. The following example illustrates how this may be configured using VLAN trunking to a Cisco Catalyst switch:

```
vlan 1
 name default
 !
vlan 30
 name DMZ
 !
interface GigabitEthernet1/1
 description BE Server Network Interface 1 (Internal/DMZ trunk group)
 switchport trunk allowed vlan 1,30
 switchport mode trunk
 spanning-tree portfast trunk
 channel-group 1 mode passive
 !
interface GigabitEthernet1/5
 description BE Server Network Interface 2 (Internal/DMZ trunk group)
 switchport trunk allowed vlan 1,30
 switchport mode trunk
 spanning-tree portfast trunk
 channel-group 1 mode passive
 !
```

When connecting server interfaces to separate switches, use standard trunk port configuration (no channel-group). Do not use Spanning-Tree Portfast.

```
vlan 1
 name default
 !
vlan 30
 name DMZ
 !
interface GigabitEthernet1/1
 description BE Server Network Interface 1 (Internal/DMZ trunk)
 switchport trunk allowed vlan 1,30
 switchport mode trunk
 !
```

The Spanning Tree VLAN cost command may be used balance traffic between links, if required.

Configure NIC Teaming in ESXi

Procedure

- Step 1** Log in to vSphere Client.
- Step 2** in the left inventory panel, click the host icon.
- Step 3** From the **Configuration** tab, select **Networking**.
- Step 4** Click **Properties** to access the switch configuration.
- Step 5** Select the **Physical Adapters** that should be added to the switch and click **Next**.
- Note** We recommend that you team a mix of motherboard and PCI card network adapters.
- Step 6** Use the **Move Up** and **Move Down** buttons to adjust the failover policy for the added ports. If you want to use an adapter for failover, move the adapter from the **Active Adapter** list to the **Standby Adapter** list.
- Step 7** Click **Next**.
- Step 8** Click **Finish**.
If you don't need to configure IEEE 802.3ad link aggregation, you can close the vSwitch properties page and skip the remaining steps.
- Step 9** Configure IEEE 802.3 link aggregation:
- From the **vSwitch0 Properties** page, Select the **Ports** tab and **Edit** the vSwitch object.
 - Select the **NIC Teaming** tab.
 - From the **Load Balancing** drop-down menu, select **Route based on IP hash**.
 - Click **OK**.
-

