



Installation Guide for Cisco Business Edition 7000H/M (M5), Release 12.5

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CHAPTER 1

Introduction to the Cisco Business Edition 7000H/M

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Who Should Use This Guide?

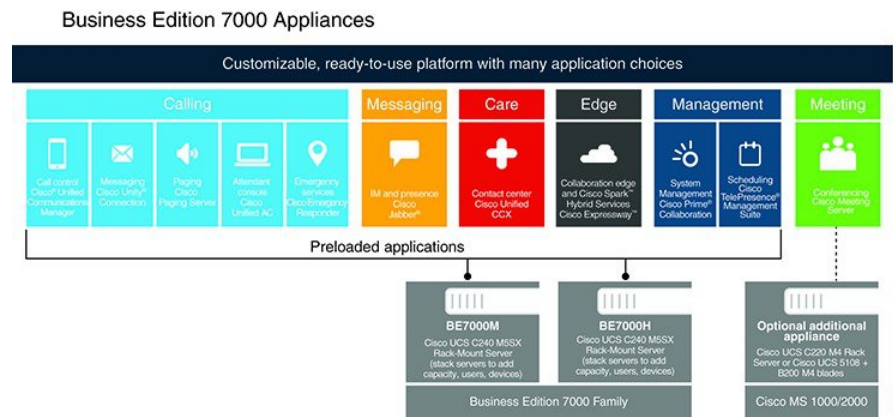
This guide helps you to set up your Business Edition appliances. It also covers everything that you need to do to customize it for your business needs.

Answer the following questions to process with the setup.

- Are you performing a manual installation of applications on a Cisco Business Edition appliance?

Business Edition 7000 Appliances are shown in following:

Figure 1: Business Edition 7000 Appliances



Note Cisco partners can find more information on <http://www.cisco.com/go/bepartner>.

**Caution**

Do not reinstall the factory loaded virtualization software. Do not reformat the disks or rebuild the storage hardware array. Either action wipes out the factory preloaded software and causes post installation licensing problems.

Essential Documents for Installation of the Business Edition 7000H/M Appliances

You can proceed with the installation by using the instruction in this document alone, refer the following documents that are listed for Deployment Options, Equipment, and Applications. All of these documents are available at the <http://www.cisco.com/go/virtualized-collaboration> and <http://www.cisco.com/go/be7000>.

Choose the product version, and then refer to the following documents:

- Deployment Options—To gain insights to help you plan your deployment, see the *Preferred Architecture* guides and the *Cisco Validated Designs* that are relevant to your business needs.
- Equipment—Use the *Quick Start Guide* to unpack the appliance and install it in a rack.
- Applications—To find out more about applications, see the following documents:
 - *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 7000 system and the conditions that you must meet to run those applications and any third-party applications on a Business Edition appliance.
 - *Business Edition 7000 Software Load Summary*—This document contains information on ISO and OVA files that are pre-loaded in your server's datastore.
 - Other documents for UC applications are listed on the Component Documentation tab.



CHAPTER 2

Installation of Cisco Business Edition 7000H/M

- [Design Your Deployment](#), on page 3
- [Set Up Your Appliance](#), on page 5
- [Set Up Your Applications](#), on page 19

Design Your Deployment

Review the following topics to design your deployment.

Plan Your UC Applications

Before You Begin:

Ensure that your Cisco Business Edition 7000 server is 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:

<https://www.cisco.com/c/en/us/support/unified-communications/business-edition-7000/products-installation-guides-list.html>

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

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 7000 system and the conditions that you must meet to run those applications and any third-party applications on a Business Edition server.

<https://www.cisco.com/c/en/us/support/unified-communications/business-edition-7000/products-implementation-design-guides-list.html>

- *Unified Communications in a Virtualized Environment*—This website contains information on Cisco Collaboration Virtualization applications and how to design your deployment.

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

- *Preferred Architecture Guides for Enterprise*—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/go/pa>

- *Enterprise Collaboration CVD Guides*—Enterprise CVDs provide detailed design and step-by-step deployment information for collaboration solutions that are built on the Cisco Business Edition 7000. These CVDs are based on the core recommendations of the Preferred Architectures, and in some cases, they offer more solution designs as extensions or alternatives to the Preferred Architectures.

<http://www.cisco.com/go/pa>

- *Business Edition 7000 Software Load Summary*—Preload Summary documents provide information on ISO and OVA files that are pre-loaded in your server's datastore.

<http://www.cisco.com/c/en/us/support/unified-communications/business-edition-7000/%20products-release-notes-list.html>

Collect Required Network Information

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

Collect the following network settings for your installation:

- Subnet mask
- Gateway IP Address
- VMware vSphere ESXi management 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



Note For general information on the Cisco UCS C240 M5 server used in Cisco Business Edition 7000, see the [Cisco UCS C240 M5 Server Installation and Service Guide](#).

Decide how you will interconnect the appliance to your network. Specifics on network interconnection options are beyond the scope of this guide, but below are some important callouts.

For the full range of possible configuration settings options, consult *Cisco UCS C240 M5 Rack Server (Small Form Factor Disk Drive Model) Spec Sheet*, *Cisco UCS C Server Installation and Service Guide* and docs.vmware.com.

Available physical ethernet ports depend on the appliance model:

- All M5 appliance models include modular LAN on motherboard ports as described in the *Cisco UCS C240 M5 Rack Server (Small Form Factor Disk Drive Model) Spec Sheet*.
- BE7000M and BE7000H models include additional ports via a network interface card.
- It is not supported on any appliance model to add network interface cards, add virtual interface cards, or change included network interface card.



Note Available VMware vSphere ESXi configuration settings options depend on what license is being used. If your appliance is using an embedded virtualization license, VMware vSphere ESXi distributed virtual switch features are not enabled.

Set Up Your Appliance

Review the following topics before you begin your installation.

Hardware Setup

This section describes the tasks that you must perform to unpack and install the Cisco Business Edition 7000 hardware.

Unpack Hardware

Unpack the BE7000 appliance and verify that all of the following items are present. If any item is missing or appears to be damaged, contact your supplier immediately.

- Business Edition 7000 appliance (derived from Cisco UCS C240 M5SX)
- Rack-mounting kit
- Power cords
- Ethernet cable
- Console cable
- License document for embedded virtualization, if purchased (For example, Cisco UC Virtualization Foundation or Cisco Collaboration Virtualization Standard).



Note If you purchased an embedded license, record and store the embedded virtualization license key in a safe place. This key will be required if the software needs to be reinstalled in the future.

For your safety, before you work on any equipment, be aware of the hazards that are involved with electrical circuitry and be familiar with standard practices for preventing accidents.

Install BE7000 Hardware

Before you begin

Ensure that you have the following before you begin hardware installation:

- Enough space in a standard 19-inch equipment rack (2 RU for each appliance)
- 110 / 220 VAC power feeds
- Ethernet network port(s) configured for the appliance's network connection(s)
- If you have purchased a keyboard-video-monitor dongle, VGA monitor and USB keyboard (not supplied) – for initial installation only.

See the figure and table below for components of front and rear panels of the BE7000 appliance (derived from UCS C240 M5SX).

Figure 2: BE7000 M5 Appliance

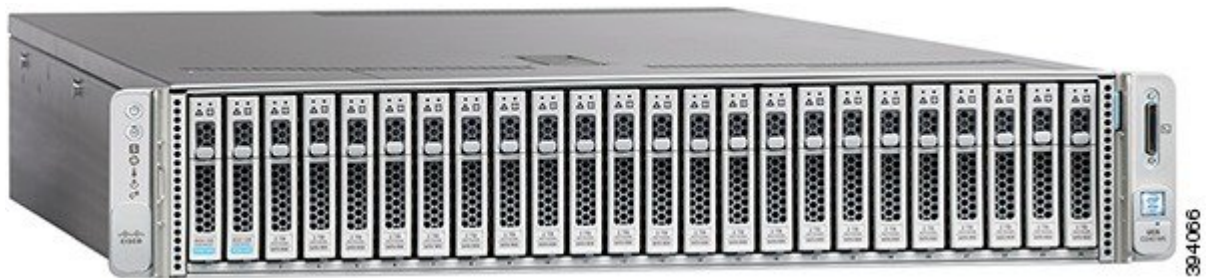


Figure 3: BE7000 Ports and LEDs

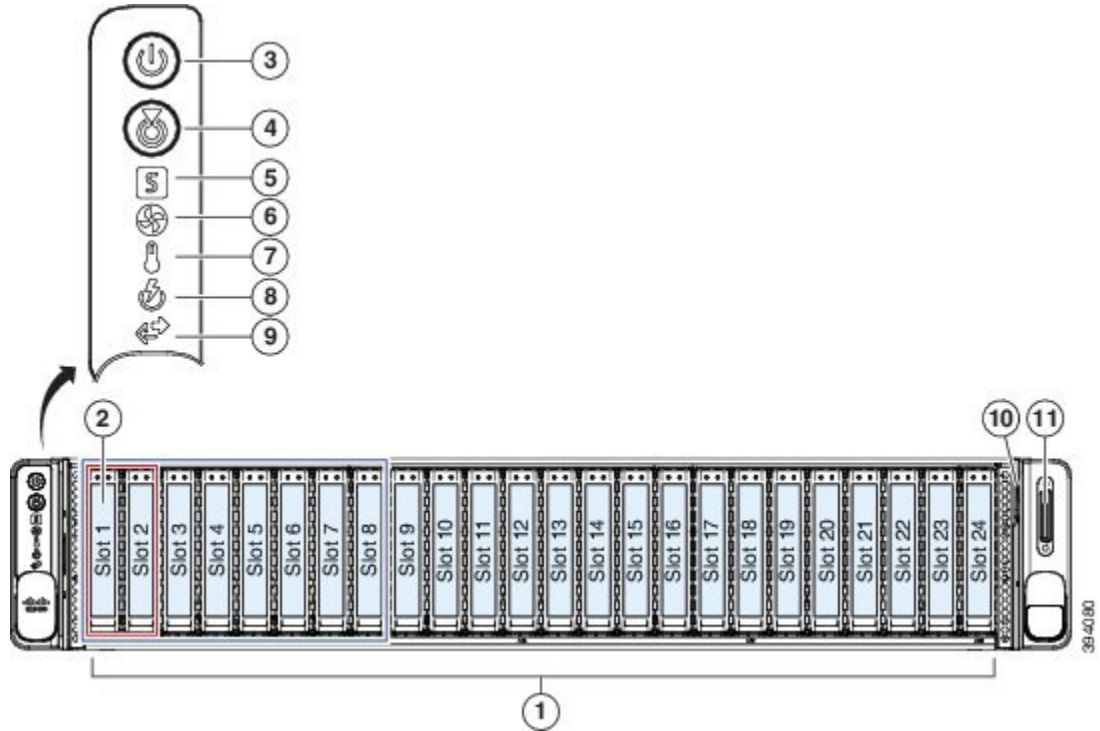


Figure 4: BE7000 Ports and LEDs

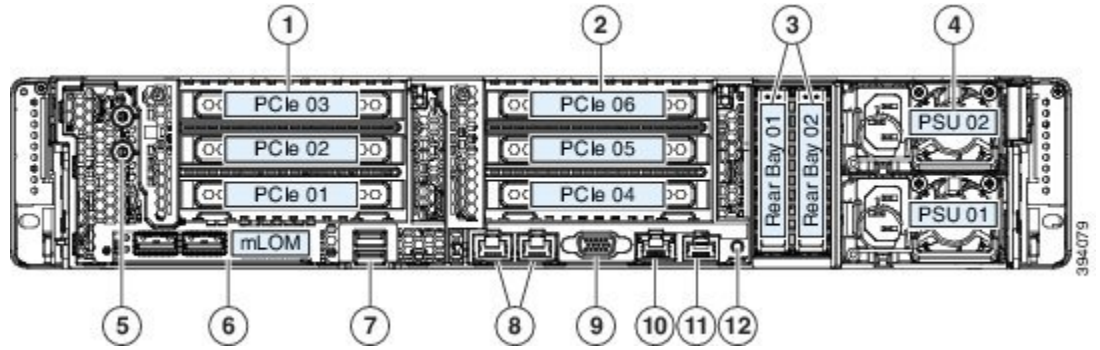


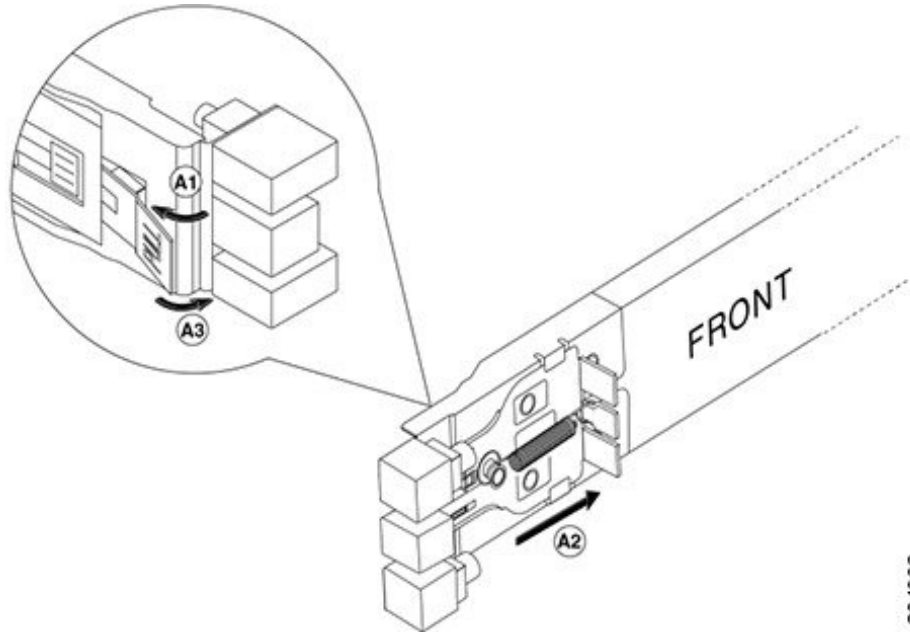
Table 1: Components of the Cisco BE7000 M5 Appliance Front and Rear Panels

Front Panel	
1	UCSC-C240-M5SX: Drive bays 1—24 support SAS/SATA drives
2	UCSC-220-M5SX: Drive bays 1 and 2 support NVMe PCIe SSDs
3	Power button/power status LED
4	Unit identification button/LED
5	System status LED

6	Fan status LED
7	Temperature status LED
8	Power supply status LED
9	Network link activity LED
10	Pull-out asset tag
11	KVM connector (used with KVM cable that provides one DB-15 VGA, one DB-9 serial, and two USB connectors)
Rear Panel	
1	PCIe riser 1 (PCIe slot 1, 2, 3)
2	PCIe riser 2 (PCIe slots 4, 5, 6)
3	Rear 2.5-inch drive bays
4	Power supplies (two, redundant as 1+1)
5	Threaded holes for dual-hole grounding lug
6	Modular LAN-on-motherboard (mLOM) card slot (x16)
7	USB 3.0 ports (two)
8	Dual 1-Gb/10-Gb Ethernet ports (LAN1 and LAN2)
9	VGA video port (DB-15 connector)
10	1-Gb Ethernet dedicated management port
11	Serial port (RJ-45 connector)
12	Rear unit identification button/LED

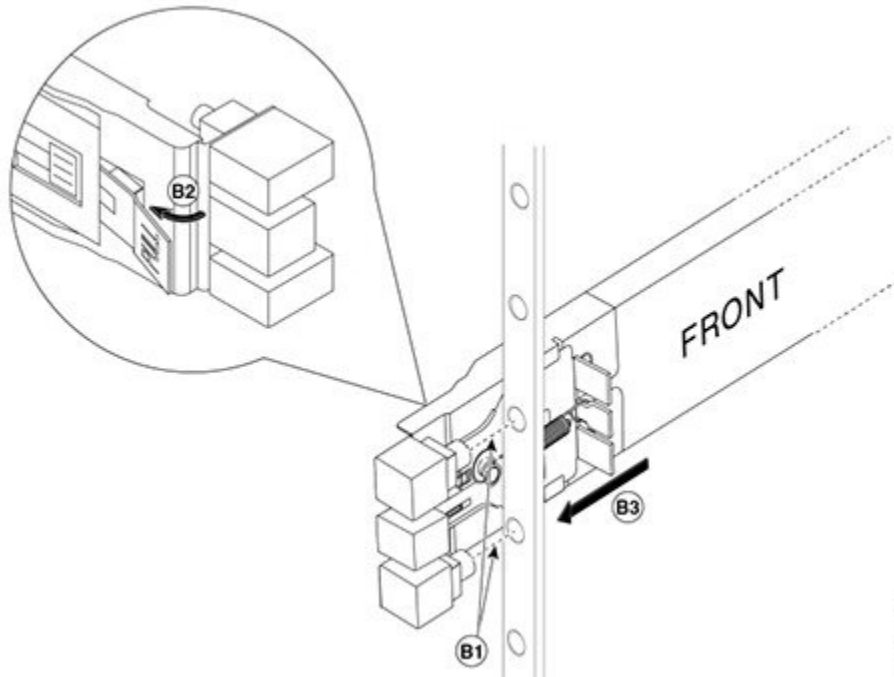
See the following figures for details on rack-mounting hardware:

Figure 5: Rack-mounting the BE7000 M5 Appliance



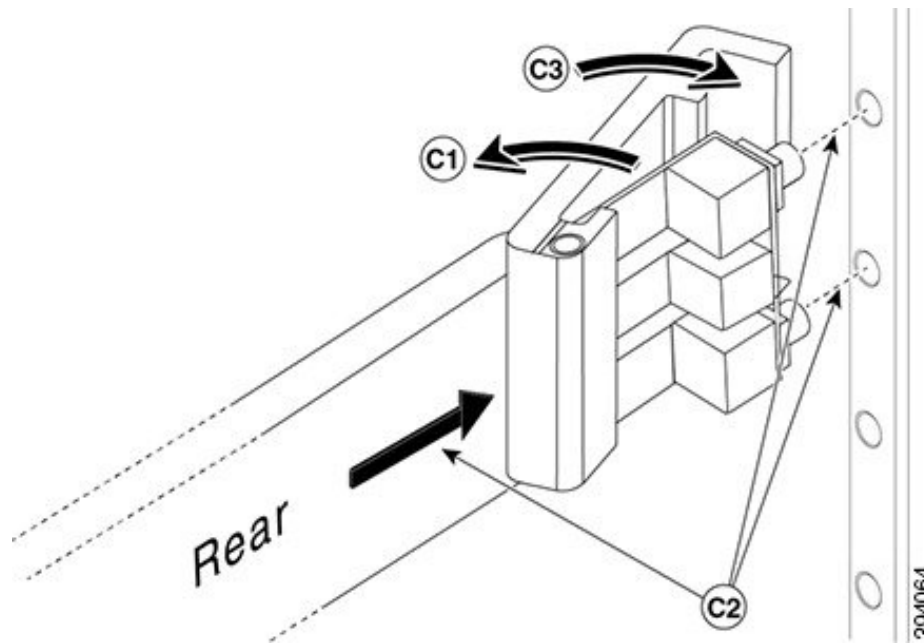
394062

Figure 6: Rack-mounting the BE7000 M5 Appliance



394063

Figure 7: Rack-mounting the BE7000 M5 Appliance



Procedure

- Step 1** Remove the slide rails from the top of the appliance's box and unpack them.
- Step 2** At the end of one of the rails marked FRONT, slide the green tab in the direction of the arrow (A1) until the securing plate is latched in the open position (A2).
- Step 3** At the desired height, engage the FRONT mounting pegs in to the front post of the equipment rack with the rail extending toward the rear (B1). Press the green release button (B2) to allow the plate to slide forward to secure the front mount (B3).
- Step 4** Hold the rear securing latch open (C1) and extend the rail until the rear mounting pegs engage in the rear rack post at the same height as the front (C2). Release the rear latch, so that the latch wraps securely around the rear post (C3).
- Step 5** Repeat Steps 2 to 4 for the second rail on the other side of the rack. Ensure that you install the rails at the same height.
- Step 6** Pull the inner slide rails from the front of each assembly until they lock in place.
- Step 7** Remove the appliance from its box and remove all packaging.
- Step 8** Point the rear of the appliance toward the front of the rack and align the pre-fitted rails with the extended slide rails.
- Step 9** Push the appliance in to the rack rails until the appliance meets the internal stops.
- Step 10** Press the plastic release clips marked PUSH on each rail and push the appliance in to the rack until the appliance latches to the front rack-mount clips.
- Step 11** Connect Ethernet Port 1 (and other Ethernet Ports, if required) to the data network.
- Step 12** Connect the dedicated management Ethernet interface to the management network, if required for Lights-Out Management.

- Step 13** Connect a monitor and keyboard using the rear VGA and USB connectors (or to the front KVM adapter if you purchased one).
- Step 14** Connect the power supplies to the electrical outlets. Do not power on the server at this time.

Installation of Virtualization and Application Software

This section describes the tasks that you must perform to install virtualization and application software on your Business Edition 7000, using the factory preload.

Installation Task Flow of Cisco Business Edition 7000H/M

Perform the following tasks to install software on your Cisco Business Edition 7000 server.

Procedure

	Command or Action	Purpose
Step 1	Configure Cisco Integrated Management Controller	Configure CIMC for your Business Edition 7000 server.
Step 2	Customize Virtualization Software Remote Access	Configure the pre-installed VMware vSphere ESXi software on the appliance.
Step 3	Delete Unused or Unwanted Virtual Machines	Delete any pre-deployed VMs that you do not require.

Configure Cisco Integrated Management Controller

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

Complete the following tasks to configure CIMC on a Business Edition 7000 appliance for customized and preconfigured deployments.

Complete the following tasks to Configure Cisco Integrated Management Controller:

Procedure

	Command or Action	Purpose
Step 1	Power on and Initial CIMC Setup	
Step 2	Complete the CIMC Configuration	

Power on and Initial CIMC Setup

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

Before you begin

Ensure that the Business Edition 7000 appliance has been rack-mounted, connected to a power supply, connected to the data network, and that a monitor and keyboard are connected to the appliance, 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 appliance 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 8: 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 9: Enter the CIMC IP Address Details

```

Cisco IMC Configuration Utility Version 2.0 Cisco Systems, Inc.
*****
NIC Properties
NIC mode:                [X]          NIC redundancy:          [X]
Dedicated:               [X]          None:                    [ ]
Shared LOM:               [ ]          Active-standby:         [ ]
Cisco Card:
  Riser1:                 [ ]          Active-active:          [ ]
  Riser2:                 [ ]          VLAN (Advanced):
  MLOm:                   [ ]          VLAN enabled:           [ ]
  Shared LOM Ext:         [ ]          VLAN ID:                 1
  Priority:                 0
IP (Basic)
IPv4:                     [X]          IPv6:                    [ ]
DHCP enabled:             [X]
CIMC IP:                   203.0.113.98
Prefix/Subnet:             255.255.255.0
Gateway:                   203.0.113.1
Pref DNS Server:          203.0.113.1
*****
<Up/Down>Selection  <F10>Save  <Space>Enable/Disable  <F5>Refresh  <ESC>Exit
<F1>Additional settings

```

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

Complete the CIMC Configuration

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

Before you begin

Power on the server and begin basic Cisco Integrated Management Controller(CIMC) configuration.

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.

What to do next

[Customize Virtualization Software Remote Access](#)

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.	
Step 2	Access and Configure the VMware vSphere hypervisor.	

Customize Virtualization Software Remote Access

Follow this procedure to customize the VMware vSphere ESXi to enable remote access from your PC using the VMware Embedded Host Client.

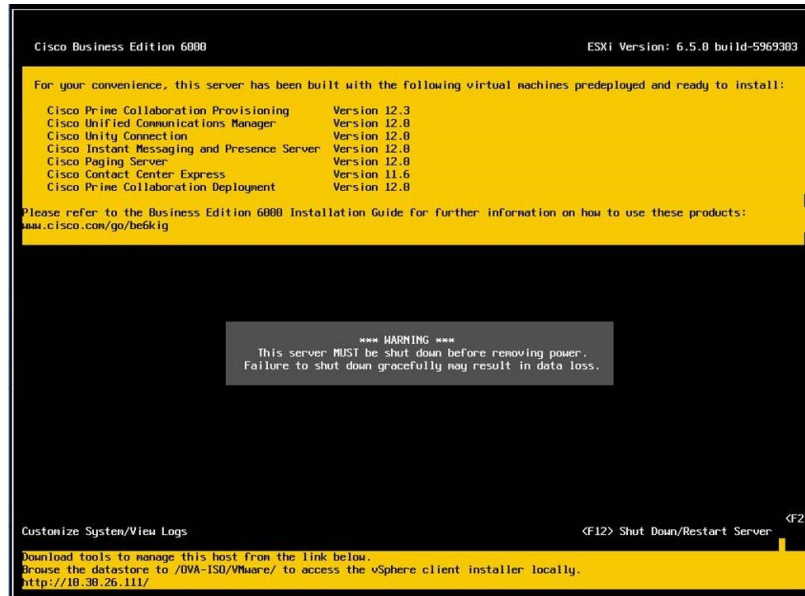


Note If you use ESXi 6.5, then you must select VMFS5 file type to create the datastore.

Procedure

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

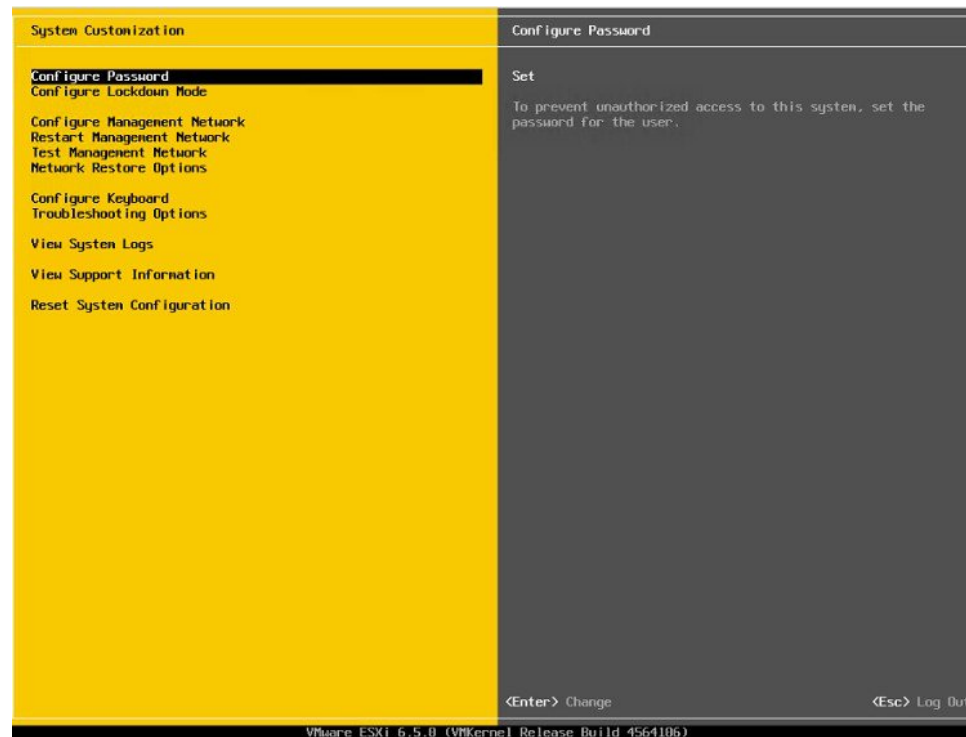
Figure 10: Console Screen After ESXi Loads



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

Figure 11: ESXi System Customization Menu

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

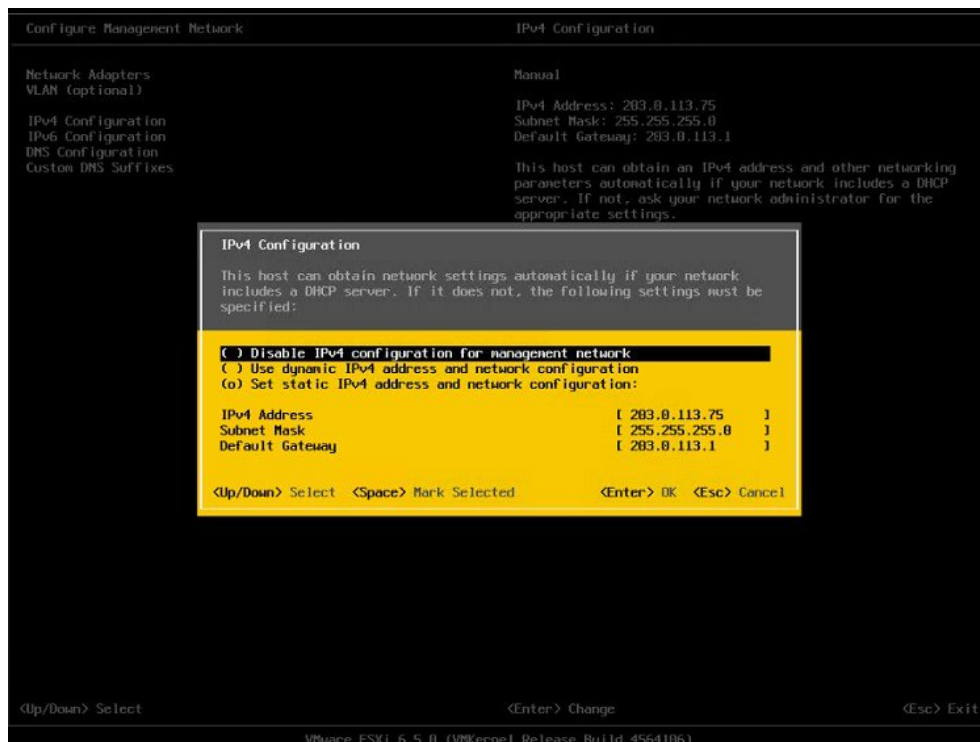


Step 3 Choose **Configure Password** to change the password.

If your applications are predeployed, skip to 5 .

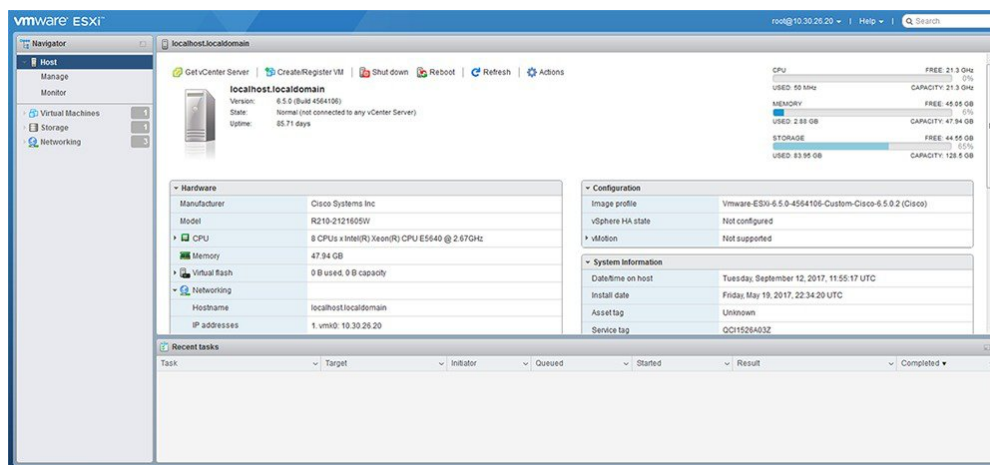
Step 4 To assign a static IP address, select the **Configure Management Network** menu, and follow the instructions on the screen to change “IP Configuration”.

Figure 12: Assign Static IP Address to ESXi Host



Step 5 Connect your PC to the data network, and browse to the new hypervisor IP address.

Figure 13: Hypervisor Welcome Page



What to do next

[Access and Configure Virtualization Software, on page 17](#)

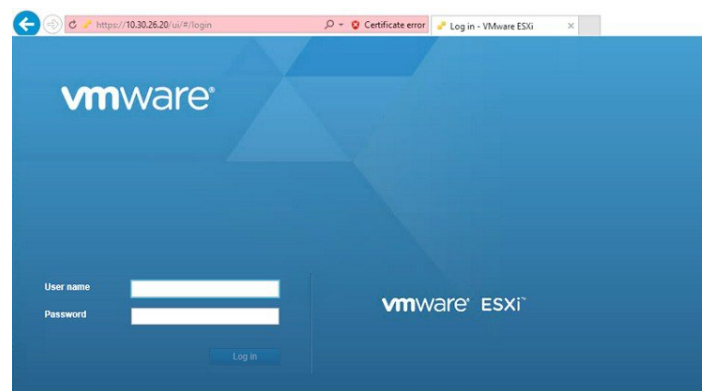
Access and Configure Virtualization Software

Some Business Edition applications require the host to have a valid time reference. Follow these steps to access the ESXi host to configure NTP and 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 Browse to the “https://[ESXI-HOST-IP-Address]/ui/” to access VMware Embedded Host Client.

Figure 14: Access Virtualization Software Using VMware Embedded Host Client



Step 2 Use the login credentials that you previously configured.

Step 3 If selected at time of quoting, BE 7000 appliances are factory loaded with a Collaboration embedded OEM license for Cisco UC Virtualization . If you want to use this license, it is ready for use. If you want to re upload or version-upgrade this license, follow these steps:

- a) Locate your license document that has license serial number for the Cisco UC Virtualization . For installations, license serial number ships from the factory along with the appliance. For version-upgrades, license serial number ships from the Cisco Product Upgrade Tool.
- b) Navigate to **Manage > License > Assign License**.
- c) Type in or copy or paste the license serial number from the license document.
- d) Click **Check License** to validate the license key.

Note License for the Cisco UC Virtualization Hypervisor Plus, Cisco UC Virtualization Foundation or Cisco Collaboration Virtualization Standard is a special Cisco Collaboration embedded OEM license. It is hardcoded to 2-CPU, pre combined, and cannot split or expand through myvmware.com. It is neither a VMware Partner Activation Code (PAC) nor a Cisco Product Authorization Key (PAK). It is pre activated, no registration or activation on myvmware.com or cisco.com required. It does not support installation through vCenter, license pooling in vCenter, or any vCenter features.

For more details, see the http://www.cisco.com/c/dam/en/us/td/docs/voice_ip_comm/uc_system/virtualization/virtualization-software-requirements.html#license_comparison.

- Step 4** Configure NTP settings:
- Navigate to **Manage > System > Time & date**.
 - Click **Edit settings** to launch the **Edit time configuration** screen.
 - Check **Manually configure the date and time on this host** check box.
 - Update the Time.
 - Check the **Use Network Time Protocol (enable NTP client)** check box.
 - Select **Start and stop with host** from **NTP service startup policy** drop-down.
 - Type the IP address of NTP server in **NTP servers**. If you want to add multiple NTP servers, type the IP address of NTP servers that are separated by commas.
 - Click **Save**.

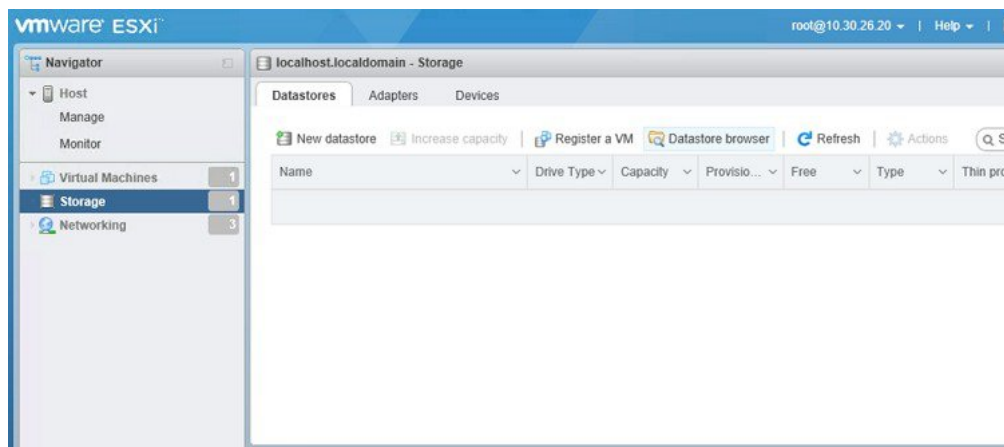
- Step 5** (Optional) Configure fault tolerance by using the NIC teaming feature in VMware:
- Navigate to the **Networking > Management Network**.
 - Click **Edit settings** to launch **Edit port group- Management Network**.
 - In the Edit port group- Management Network screen, enter the name, VLANID, Virtual switch.
 - Expand NIC teaming, enter the required details.
 - Click **Save** to add the NIC that is connected to the data network.

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

- Step 6** Browse the datastore:
- Navigate to **Storage > Datastore** to list the datastores in the Business Edition appliance.
 - Select datastore1.
 - Click the **Datastore browser**. You can view the Preloaded Collaboration Virtual Machines and preloaded software.

Note You must select the VMFS5 file type while creating the datastore.

Figure 15: 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 appliance fails, the replacement product does not include preloaded content.

What to do next

[Delete Unused or Unwanted Virtual Machines](#), on page 19

Delete Unused or Unwanted Virtual Machines

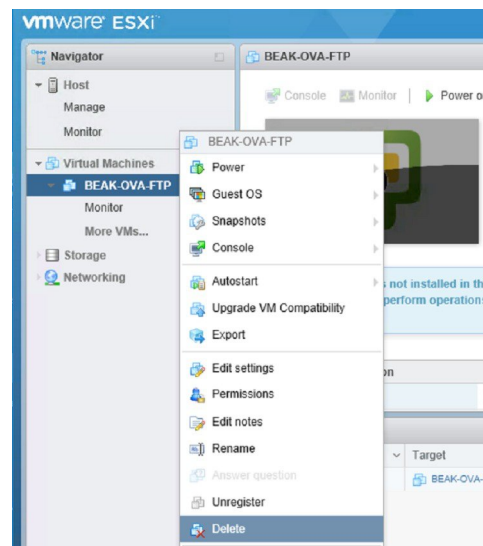
You can optionally delete unused or unwanted preloaded files to free up disk space or make room for subsequent installations in the following scenarios:

- If you want to deploy a new application version or patch level than the existing factory-preloaded application.
- If you do not want to run a particular preloaded application and its files.

Procedure

Step 1 Log in to **VMware Embedded Host Client**.

Figure 16: Delete Any VMs That You Are Not Using



- Step 2** Expand **Virtual Machines** and locate the virtual machine that you want to delete.
- 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**.
- Step 5** Repeat this procedure for each virtual machine that you wish to remove.

Set Up Your Applications

Perform the following tasks to set up your applications on Cisco Business Edition 7000 appliance.

Procedure

	Command or Action	Purpose
Step 1	Deploy Virtual Machine OVAs, on page 20	Deploy virtual machine OVAs for each UC application that you want to install.
Step 2	Customize Virtual Machines for Cisco Unity Connection, on page 21	If your Business Edition 7000 deployment includes Cisco Unity Connection, customize the Unity Connection VM.
Step 3	Associate Application ISO Files to Virtual Machines, on page 22	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 appliance.
Step 4	Install UC Applications Using Touchless Installation, on page 23	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 Note If you prefer, you can use manual installation for these applications.
Step 5	Install UC Applications Manually, on page 26	Use the manual interactive process to install any remaining UC applications.

Deploy Virtual Machine OVAs

For each application that you want to run, requires one of the preloaded virtual machine OVA files. If a new version is preferred, then it is recommended to delete the existing version.

Depending on the preloaded application, the OVA contains any of the following applications:

- Fully installed ready to run application
- Partially installed application
- VM configuration alone for an empty virtual machine

For more details, see the Preload File Summaries in Release Notes at the <http://www.cisco.com/c/en/us/support/unified-communications/business-edition-7000/products-release-notes-list.html>.

**Note**

The OVA template files that contain empty virtual machines are deployed in seconds, while larger OVA files that contain partially or fully installed applications can take longer to deploy.



Caution To ensure proper operation of your appliance and any embedded virtualization licenses, ensure it is running ESXi 6.5 U2 or greater, with the Cisco UCS-specific image of ESXi.

Procedure

- Step 1** On the VMware Embedded Host Client, navigate to the **Virtual Machines**.
 - Step 2** Right-click the **Virtual machines** and select the **Create/Register VM**.
 - Step 3** Select **Deploy a virtual machine from an OVF or OVA file** as select creation type.
 - Step 4** Specify a meaningful name for the virtual machine.
 - Step 5** 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: <https://www.cisco.com/c/en/us/support/unified-communications/business-edition-7000/products-release-notes-list.html>.
 - Step 6** Select the datastore in which to store the configuration and disk files.
 - Step 7** Select the deployment options.
 - Step 8** If prompted to accept license agreements, continue to click **Next**.
 - Step 9** Select the deployment options.
 - Step 10** If prompted for the **Disk Format**, specify **Thick Provision Lazy Zero**.
 - Step 11** Review your settings selection before finishing the wizard.
 - Step 12** Click **Next**.
 - Step 13** Deploy VMs for all your UC applications before proceeding to the next task.
- If your system includes Cisco Unity Connection, then *Customize Virtual Machines for Cisco Unity Connection*. Otherwise, *Associate Application ISO Files to Virtual Machines*.
-

Customize Virtual Machines for Cisco Unity Connection

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

Preconfigure

Before you begin

For Customized installations, use this procedure to configure your Cisco Unity Connection virtual machine settings to ensure optimum performance. [Deploy Virtual Machine OVAs, on page 20](#)

Procedure

- Step 1** On VMware Embedded Host Client, navigate to the **Virtual Machines**.
- Step 2** Right click the **Unity Connection** entry and select **Edit Settings**.
- Step 3** If you want to use the Unity Connection, or Unified, or Integrated Messaging, do the following:

- a) Select the **Virtual Hardware** tab.
- b) Select the **CPU** menu and set the number of **Cores per Sockets** to **2**.
- c) In the **Reservation** tab, increase the reservation to **5.06MHz**.

For more information, see the https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/12x/supported_platforms/b_12xcucspl.html.

Associate Application ISO Files to Virtual Machines

If you have deployed a skip-install OVA that contains any of the following partially installed applications, skip this step.

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

If you have deployed an OVA that contains ready to run fully installed applications, skip this step.

For all other OVA files that contain only VM configurations of empty virtual machines, use this procedure to associate the ISO installation files that is used to complete the installation.



Note

For an up to date list of installation files for your appliance, see the *Preload Summary* for your appliance in the datastore OVA-ISO directory or at: <https://www.cisco.com/c/en/us/support/unified-communications/business-edition-7000/products-release-notes-list.html>.

Procedure

- Step 1** In the VMware Embedded Host Client, select the UC application virtual machine.
 - Step 2** Click **Edit**.
 - Step 3** From **Virtual Hardware** tab, select **CD/DVD Drive 1**.
 - Step 4** Select **Datastore ISO File** from **CD/DVD Drive 1** drop-down list.
 - Step 5** **Browse** to the datastore and locate the application ISO file.
 - Step 6** Select the file and click **Select**.
 - Step 7** In **CD/DVD Drive 1**, check the **Connect at power on** check box under the **Status**.
 - Step 8** Repeat this procedure for each application that you want to install that includes an ISO file.
-

Install UC Applications Using Touchless Installation

Touchless installation allows you to install multiple UC applications and virtual machines of an application simultaneously, across the different hosts if necessary, 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

Procedure

	Command or Action	Purpose
Step 1	Generate Answer Files, on page 23	Generate answer files (AFG files) for UC applications.
Step 2	Create Virtual Floppy Images, on page 24	Use your AFG files to create virtual floppy images.
Step 3	Upload Virtual Floppy Images to Datastore, on page 25	Upload your virtual floppy images to the datastore.
Step 4	Mount Virtual Floppy on Virtual Machines and Set Boot Option, on page 25	Mount each virtual floppy on the corresponding UC application VM.
Step 5	Run Touchless Installation, on page 26	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 list, 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 appliance. 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.

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

1. 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.
2. [Generate Answer Files, on page 23](#)

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.
-

Upload Virtual Floppy Images to Datastore

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

Before you begin

Create Virtual Floppy Images

Procedure

- Step 1** Start the VMware Embedded Host Client.
- Step 2** Select **Storage**.
- Step 3** Right-click on a datastore and **Browse** the datastore.
- Step 4** Navigate to the destination directory and click the **Upload** icon.
- Step 5** Upload the vFloppy images to the AFG folder.
- Step 6** At the **Upload/Download** warning, click **Yes**.
- Step 7** Close the **Datastore Browser** window.
-

Mount Virtual Floppy on Virtual Machines and Set Boot Option

Use this procedure to mount the UC application virtual floppy images on their corresponding VM.



Note This step is not required for predeployed VMs as they are already configured.

Before you begin

Upload Virtual Floppy Images to Datastore

Procedure

- Step 1** In the VMware Embedded Host Client, select the UC application virtual machine.
- Step 2** Select **Virtual Machine**.
- Step 3** Click **Edit**.
- Step 4** From the **Virtual Hardware** tab, select **Floppy drive**.
- Step 5** Select **Use existing floppy image**.
- Step 6** **Browse** to the datastore and locate the virtual floppy image.
- Step 7** Select the file and click **OK**.
- Step 8** Under **Status**, enable the **Connect at power on** option.
- Step 9** Click the **VM Options** tab. Under **Boot Options**, check the **Force BIOS setup**, and then click **Save**.

Step 10 Repeat this procedure for each UC application for which you want to perform touchless installation.

Run Touchless Installation

After you have mounted your virtual floppy drives to your application VMs, run the touchless installation process. We recommend that you run all of your touchless installations simultaneously.



Note If your VM is predeployed, you need to perform step 6 only.

Procedure

- Step 1** In the VMware Embedded Host Client, right-click the VM and select the **Console > Open console in new window**.
A console window opens.
- Step 2** Click the **Power On** icon in the console toolbar 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.
-

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.

Procedure

- Step 1** In the VMware Embedded Host Client, power on the VM for the application that you want to install.
- Step 2** Right-click the VM, and choose the **Console > Open console in new window**.
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 VMware Embedded Host 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 VMware Embedded Host 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.



CHAPTER 3

Post-Installation of the Cisco Business Edition 7000H/M

- [Post-Installation of the Cisco Business Edition 7000H/M, on page 29](#)

Post-Installation of the Cisco Business Edition 7000H/M

Complete the following procedure after the installation of Cisco Business Edition 7000H/M.

Procedure

	Command or Action	Purpose
Step 1	Licensing Applications, on page 29	Follow these steps to perform the first-time setup and apply licenses for your UC applications.
Step 2	Install Locales or Patches for Applications, on page 30	(Optional) Install new locales for your UC applications.

Licensing Applications

Applications licensed with Cisco Smart Licensing: Applies to Cisco Unified Communications Manager 12.5 preloaded on Business Edition 7000. Please see the Cisco Smart Software Licensing with *Cisco Unified Communications Manager Solution Overview*.

Skip this section.

Applications licensed with Product Authorization Keys (PAKs): Applies to Cisco Unified Communications Manager 11.5 preloaded on Business Edition 7000.

Follow these steps to access each application, perform the 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.
 - **Cisco Prime Collaboration Assurance and Analytics Business**: Browse to the IP address and use **globaladmin** as the username.
 - **Cisco Prime Collaboration Deployment**: Browse to the IP address and use the Administrator account and password you specified during installation. For more information, see the [Cisco Prime Collaboration Deployment Administration Guide, Release 11.5\(2\) Admin Guide](#).
- Step 2** After you purchase an application license, Cisco sends a Product Authorization Key (PAK) through 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 the [www.cisco.com go license](http://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 necessary.
 - Cisco Prime Collaboration Assurance and Analytics : No license is required to use Cisco Prime Collaboration Assurance Standard Edition. You may purchase an upgrade to Cisco Prime Collaboration Assurance Advanced and Analytics or Advanced Edition if necessary.
 - Cisco Prime Collaboration Deployment: No license is required to use Cisco Prime Collaboration Deployment Edition, as the Cisco Prime Collaboration Deployment license is entitled by the Cisco Unified Communications Manager license.
 - Paging Server: No license is required to use Basic Paging Server. You may purchase an upgrade to Advanced Edition if necessary.
 - Unified Communications Manager, Cisco Unity Connection, and Cisco Emergency Responder:
- 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>. Alternatively a standalone instance of PLM may be installed using the files in the datastore.
-

Install Locales or Patches for Applications

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

**Note**

- Patches that are shipped with the appliance 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 Virtual Machines	Associate the locale or patch installer with the appropriate VM.
Step 2	Stop Services for Unity Connection, on page 31	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 or Patches , on page 32	Install the locale or patch on the VM.

Associate Bundled Locale or Patch ISO with Virtual Machines

Before you begin

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

Procedure

-
- Step 1** In the VMware Embedded Host Client, select the Virtual Machine on which you want to install a new locale or patch.
 - Step 2** Click **Edit**.
 - Step 3** From **Virtual Hardware** tab, select **CD/DVD Drive**.
 - Step 4** Select **Datastore ISO File** from **CD/DVD Drive 1** drop-down list.
 - Step 5** **Browse** to the datastore and select the appropriate locale or patch ISO file.
 - Step 6** Click **Select**.
 - Step 7** In **CD/DVD Drive 1**, check the **Connect at power on** check box under the **Status**.
 - Step 8** Repeat this procedure for each VM for which you want to install a new locale or patch.
-

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
-

Install New Locales or Patches

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



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 appliance:
- a) Log in to the VMware Embedded Host Client
 - b) Right-click the VM on which you installed the locale or patch and select the **Guest OS > Restart**
-

What to do next

After you install your Cisco Business Edition 7000 appliance, you can provision users, devices and configure features on the system. Refer to the following guides:

- Cisco Prime Collaboration Provisioning Guide
- Cisco Prime Collaboration Deployment Administration Guide



APPENDIX **A**

Example of Configuring NIC Teaming for the Business Edition 7000H/M

- [NIC Teaming, on page 33](#)
- [Configure NIC Teaming in ESXi, on page 34](#)
- [Configure NIC Teaming on Switch, on page 34](#)

NIC Teaming



Note This section is an example only; it is not prescriptive guidance and is not the only recommendation you may see in Cisco documentation. This particular example may not be suitable or optimal for your specific networking environment. Consult Cisco network documentation and https://www.cisco.com/c/dam/en/us/td/docs/voice_ip_comm/uc_system/virtualization/virtualization-qos-designs-considerations.html to devise the best way to interconnect your appliance with your network."

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 more physical adapters are assigned to a vSwitch, they may be assigned as either active or standby. Depending on how the appliance 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 is 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 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 reconverges to use a serviceable connection to the appliance. 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 (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 appliances may accommodate the network separation and NIC teaming.

Configure NIC Teaming in ESXi

Procedure

-
- Step 1** Log in to VMware Embedded Host Client.
- Step 2** Navigate to the **Networking > Virtual Switches**.
- Step 3** Select Vswitch0 and click **Edit settings** tab.
- Step 4** 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 5** Select the **NIC Teaming** tab.
- 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 **Save**.
- Step 8** Configure IEEE 802.3 link aggregation:
- Select Vswitch0 and click **Edit settings** tab.
 - Edit the **vSwitch Name**
 - Select the **NIC Teaming** tab.
 - From the **Load Balancing** drop-down menu, select **Route based on IP hash**.
 - Click **Save**.
-

Configure NIC Teaming on Switch

When aggregating appliance 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 appliance 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 necessary.

