



Installation Guide for Cisco Business Edition 6000H/M(M5), Release 12.0

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CONTENTS

CHAPTER 1

Introduction to the Cisco Business Edition 6000H/M 1

Who Should Use This Guide? 1

Essential Documents for Installation of the Business Edition Appliances 2

CHAPTER 2

Installation of Cisco Business Edition 3

Design Your Deployment 3

Plan Your UC Applications 3

Collect Required Network Information 4

Set Up Your Appliance 5

Installation of Virtualization and Application Software 5

Preloaded File Types in the Datastore 5

Installation Task Flow of the Cisco Business Edition 6

Configure Cisco Integrated Management Controller 6

Configure Virtualization Software 8

Delete Unused or Unwanted Virtual Machines 13

Set Up Your Applications 14

Deploy Virtual Machine OVAs 15

Customize Virtual Machines for Cisco Unity Connection 16

Associate Application ISO Files to Virtual Machines 17

Install UC Applications Using Touchless Installation 17

Generate Answer Files 18

Create Virtual Floppy Images 19

Upload Virtual Floppy Images to Datastore 20

Mount Virtual Floppy on Virtual Machines and Set Boot Option 20

Run Touchless Installation 21

Install UC Applications Manually 21

CHAPTER 3	Post-Installation of the Cisco Business Edition	23
	Post-Installation of the Cisco Business Edition 6000H/M	23
	Licensing Applications	23
	Install Locales or Patches for Applications	24
	Associate Bundled Locale or Patch ISO with Virtual Machines	25
	Stop Services for Unity Connection	25
	Install New Locales or Patches	26

APPENDIX A	Configure NIC Teaming for the Business Edition 6000H/M	27
	NIC Teaming	27
	Configure NIC Teaming in ESXi	28
	Configure NIC Teaming on Switch	28

APPENDIX B	Supported Solution Capacities	31
	Supported Solution Capacities	31



CHAPTER 1

Introduction to the Cisco Business Edition 6000H/M

- [Who Should Use This Guide?](#), on page 1
- [Essential Documents for Installation of the Business Edition Appliances](#), on page 2

Who Should Use This Guide?

This guide helps you set up your Business Edition appliance if you can answer yes to the following questions.

- Are you doing a manual installation of applications on a Cisco Business Edition appliance? This guide covers everything that you have to do to customize it for your business needs.



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

- Does your deployment fit within the Supported System Capacities described in Appendix B?

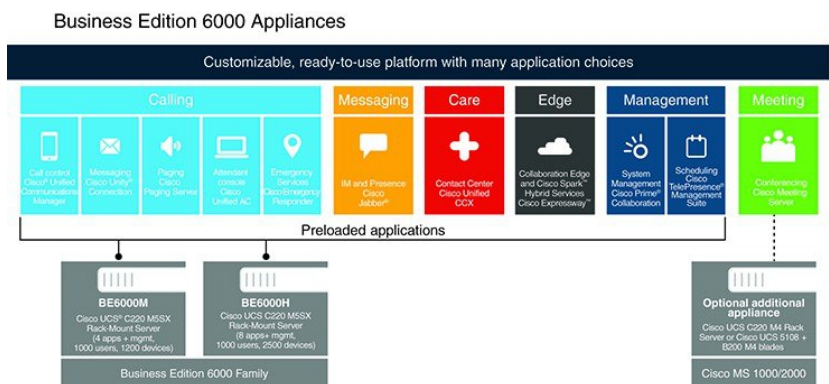


Caution

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.

Business Edition 6000 Appliances are shown in following:

Figure 1: Business Edition 6000 Appliances



Essential Documents for Installation of the Business Edition Appliances

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 6000 system and the conditions that you must meet to run those applications and any third-party applications on a Business Edition appliance.
 - Other documents for UC applications are listed on the Component Documentation tab.



CHAPTER 2

Installation of Cisco Business Edition

- [Design Your Deployment](#), on page 3
- [Set Up Your Appliance](#), on page 5
- [Set Up Your Applications](#), on page 14

Design Your Deployment

Review the following topics to design your deployment.

Plan Your UC Applications

Before You Begin:

Make sure that your Cisco Business Edition 6000 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:

<http://www.cisco.com/c/en/us/support/unified-communications/business-edition-6000/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 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 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 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/go/pa>

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

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

- *Business Edition 6000 Software Load Summary*—Preload Summary documents provide information on ISO and OVA files that are pre-loaded in your server's datastore.

<https://www.cisco.com/c/en/us/support/unified-communications/business-edition-6000/products-release-notes-list.html>

Collect Required Network Information

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 C220 M5SX server that is used in Cisco Business Edition 6000, see the [Cisco UCS C220 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 C220 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 C220 M5 Rack Server (Small Form Factor Disk Drive Model) Spec Sheet*.
- BE6000H model includes 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.

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 6000, using the factory preload.

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_11.5.1.13900-1.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 (e.g. `cucm_12.5_vmv13_v1.0.ova`) 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,). 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,). 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 the <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 there is a hardware failure, replacement hardware does not include a factory preload. If the factory preloaded software is either deleted, overwritten, or lost, then manual rebuild of preloaded software is required. Restore to the factory default capability is not supported.

Installation Task Flow of the Cisco Business Edition

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

Procedure

	Command or Action	Purpose
Step 1	Configure Cisco Integrated Management Controller, on page 6	Configure CIMC for your Business Edition server.
Step 2	Customize Virtualization Software Remote Access, on page 8	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 6000 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, on page 8	

Power on and Initial CIMC Setup

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

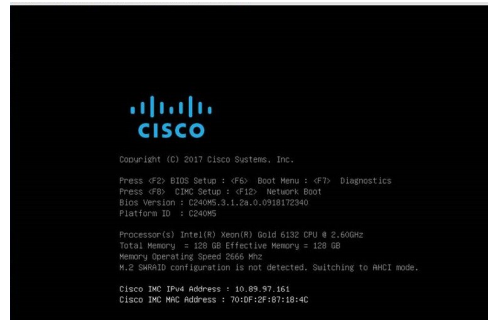
Before you begin

Ensure that the Business Edition 6000 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

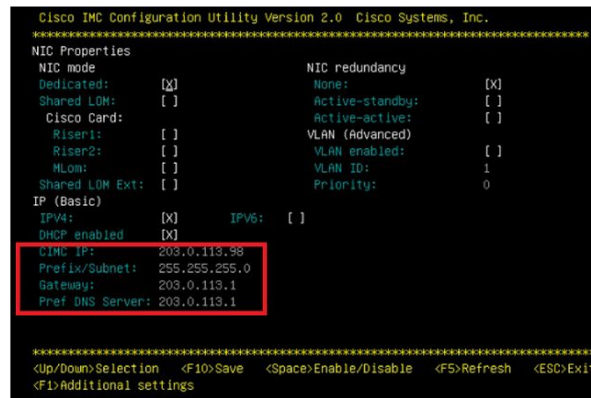
- Step 1** Verify that power is connected and that the power button LED is orange.
- Step 2** Push the appliance power button and verify that it changes to green.
- Step 3** Watch the boot process on the monitor.
- Step 4** When the blue Cisco logo appears, press **F8** to enter the CIMC configuration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

Figure 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.

Complete the CIMC Configuration

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

Before you begin

Power on the appliance 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 menu, select the **Admin** tab, and click **Network**.
 - Step 3** In the home page, 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 home page, 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 corner of the page.
-

Configure Virtualization Software

Complete the following tasks to set up the VMware vSphere ESXi:

Procedure

	Command or Action	Purpose
Step 1	Customize VMware vSphere ESXi Remote Access.	
Step 2	Access and Configure the VMware vSphere ESXi.	

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.

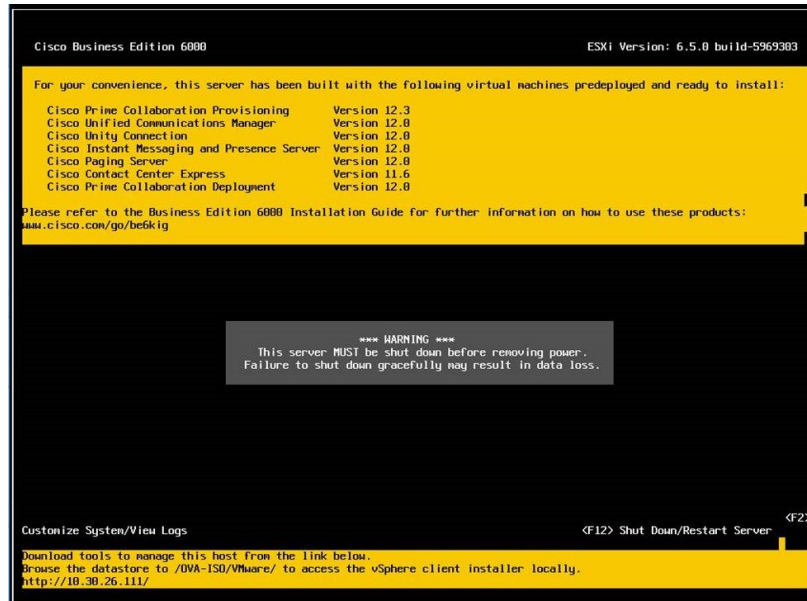


Note If you use ESXi 6.5 or higher, then you must select VMFS5 file type to create the datastore.
BE6000 appliances are required to use VMFS5 file with ESXi 6.5.

Procedure

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

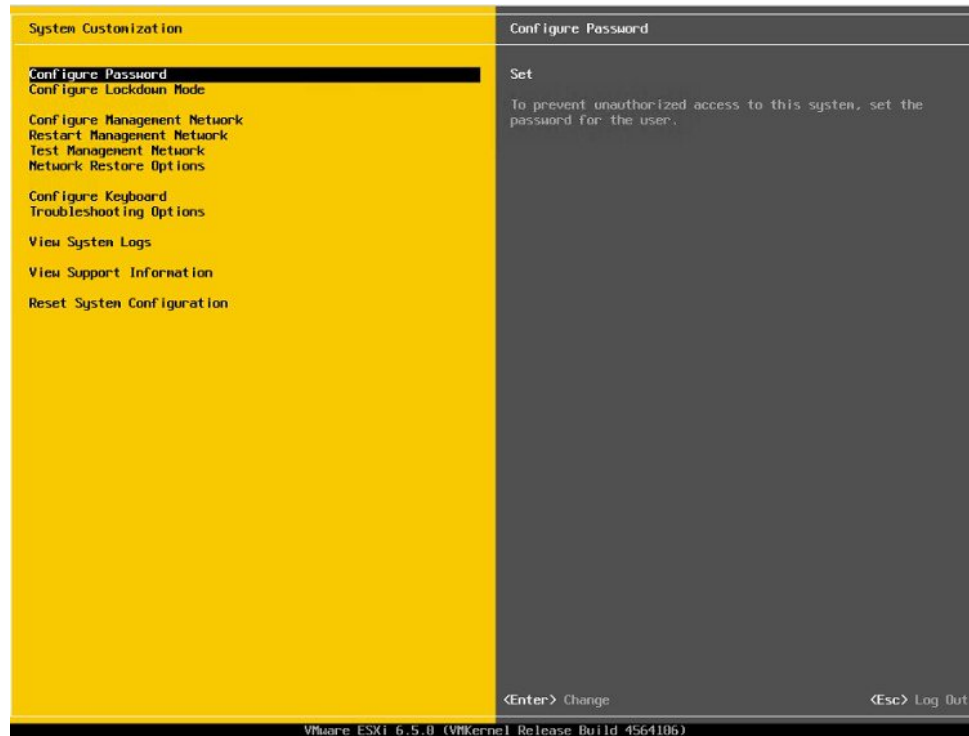
Figure 4: Console Screen After ESXi Loads



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

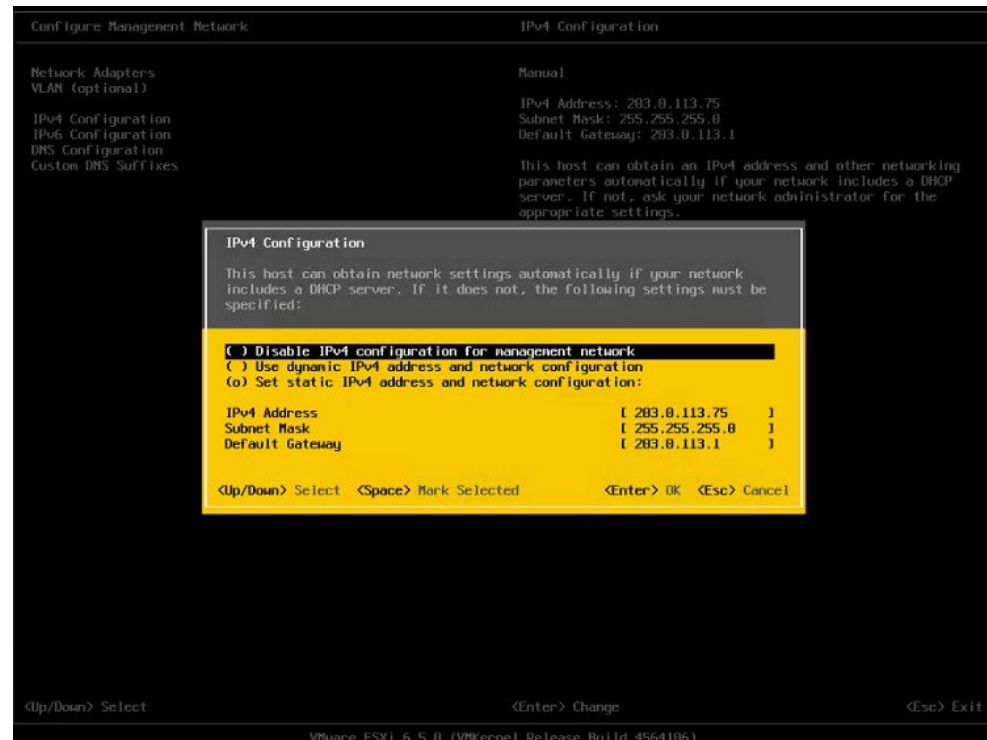
Figure 5: ESXi System Customization Menu

The default username is `root` and default password is `c!SCo123`.



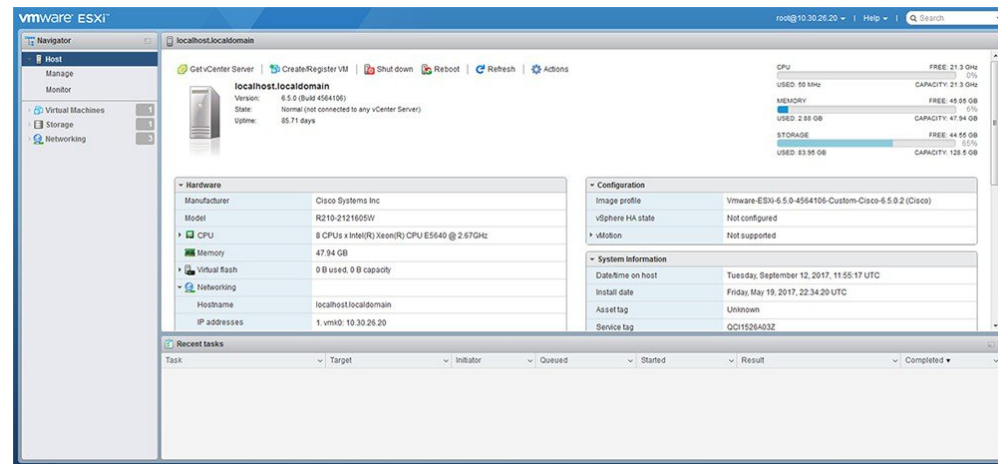
- Step 3** After logging in, you must change the default password, choose **Configure Password** to change the password. If your applications are pre-deployed, skip to [Step 5, on page 11](#).
- Step 4** To assign a static IP address, select the **Configure Management Network** menu, and follow the instructions on screen to change “IP Configuration”.

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.

Figure 7: Hypervisor Welcome Page



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.

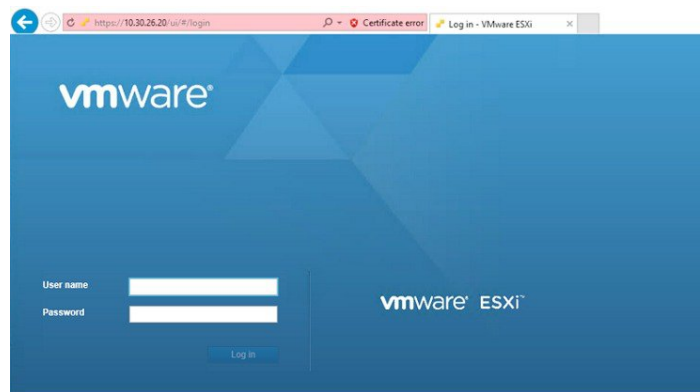
Before you begin

[Customize Virtualization Software Remote Access, on page 8](#)

Procedure

Step 1 Browse to the “https://[ESXI-HOST-IP-Address]/ui/” to access VMware Embedded Host Client.

Figure 8: 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 6000 appliances are factory loaded with a Collaboration embedded OEM license for Cisco UC Virtualization Hypervisor Plus. 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:

- Locate your license document that has license serial number for the Cisco UC Virtualization Hypervisor Plus. 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.
- Navigate to **Manage > License > Assign License**.
- Type in or copy or paste the license serial number from the license document.
- Click **Check License** to validate the license key.

Note License for the Cisco UC Virtualization Hypervisor Plus 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 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.

- d) Update the Time.
- e) Check the **Use Network Time Protocol (enable NTP client)** check box.
- f) Select **Start and stop with host** from **NTP service startup policy** drop-down.
- g) 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.
- h) Click **Save**.

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

- a) Navigate to the **Networking > Management Network**.
- b) Click **Edit settings** to launch **Edit port group- Management Network**.
- c) In the Edit port group- Management Network screen, enter the name, VLANID, Virtual switch.
- d) Expand NIC teaming, enter the required details.
- e) Click **Save** to add the NIC that is connected to the data network.

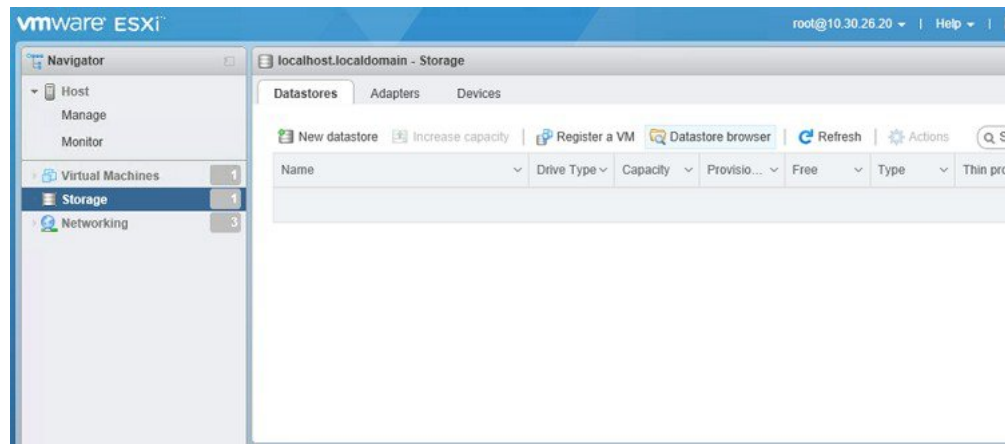
Note By default, only one NIC is enabled for the hypervisor and identified as vmnic0.

Step 6 Browse the datastore:

- a) Navigate to **Storage > Datastore** to list the datastores in the Business Edition appliance.
- b) Select datastore1.
- c) 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 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 appliance fails, the replacement product does not include preloaded content.

Delete Unused or Unwanted Virtual Machines

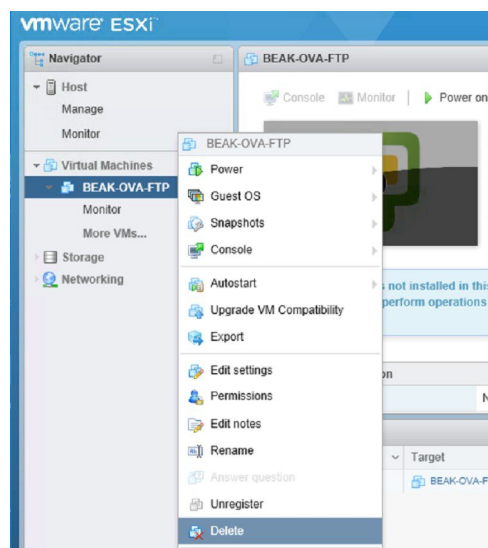
You can optionally delete unused or unwanted preloaded files to free up disk space or make room for subsequent installations in the following scenarios:

- 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 10: 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 the Cisco Business Edition 6000 appliance.

Procedure

	Command or Action	Purpose
Step 1	Deploy Virtual Machine OVAs, on page 15	Deploy virtual machine OVAs for each UC application that you want to install.

	Command or Action	Purpose
Step 2	Customize Virtual Machines for Cisco Unity Connection, on page 16	If your Business Edition 6000 deployment includes Cisco Unity Connection, customize the Unity Connection VM.
Step 3	Associate Application ISO Files to Virtual Machines, on page 17	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 17	Optional. Use touchless installation to install any of the following core UC applications: • 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 21	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-6000/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.

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: <http://www.cisco.com/c/en/us/support/unified-communications/business-edition-6000/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 15](#)

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:
- Select the **Virtual Hardware** tab.
 - Select the **CPU** menu and set the number of **Cores per Sockets** to 2.
 - In the **Reservation** tab, increase the reservation to 3598MHz.

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: <http://www.cisco.com/c/en/us/support/unified-communications/business-edition-6000/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 18	Generate answer files (AFG files) for UC applications.
Step 2	Create Virtual Floppy Images, on page 19	Use your AFG files to create virtual floppy images.
Step 3	Upload Virtual Floppy Images to Datastore, on page 20	Upload your virtual floppy images to the datastore.
Step 4	Mount Virtual Floppy on Virtual Machines and Set Boot Option, on page 20	Mount each virtual floppy on the corresponding UC application VM.
Step 5	Run Touchless Installation, on page 21	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](http://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 18](#)

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

- [Post-Installation of the Cisco Business Edition 6000H/M](#) , on page 23

Post-Installation of the Cisco Business Edition 6000H/M

Complete the following procedure after the installation of Cisco Business Edition 6000H/M .

Procedure

	Command or Action	Purpose
Step 1	Licensing Applications, on page 23	Follow these steps to perform the first-time setup and apply licenses for your UC applications. Note Do not use Smart Licensing, see the https://www.cisco.com/c/en/us/buy/smart-accounts/software-licensing.html .
Step 2	Install Locales or Patches for Applications, on page 24	(Optional) Install new locales for your UC applications.

Licensing Applications

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:** 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>. 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 25	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 26	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 6000 appliance, you can provision users, devices and configure features on the system. Refer to the following guides:

- Cisco Prime Collaboration Deployment Administration Guide



APPENDIX **A**

Configure NIC Teaming for the Business Edition 6000H/M

- [NIC Teaming, on page 27](#)
- [Configure NIC Teaming in ESXi, on page 28](#)
- [Configure NIC Teaming on Switch, on page 28](#)

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 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.



APPENDIX **B**

Supported Solution Capacities

- [Supported Solution Capacities, on page 31](#)

Supported Solution Capacities

This section presents some of the supported deployment limits for the coresident applications on Cisco Business Edition 6000. It is important to stay within these limits while planning system utilization to avoid oversubscribing an appliance.

Application	Performance Limits
Unified Communications Manager	• 150 Users / 300 Endpoints for BE6000S. • 1000 Users / 1200 Endpoints for BE6000M • 1000 Users / 2500 Endpoints for BE6000H. • Total 50 CUCM Locations / Gateways / Sites • 50 Extension Mobility login or logout every hour. • 50 Music On Hold sessions/calls. • 20 Software Conferences • 250 CTI endpoints • 150 Presence enabled Users for BE6000S • 1000 Presence enabled Users for BE6000M or BE6000H • LDAP Authentication and Synchronization • Clustering & Redundancy • Overall BHCA 5000

Application	Performance Limits
Cisco Unity Connection	• 150 Users / 150 Voicemail boxes for BE6000S. • 1000 Users / 1000 Voicemail boxes for BE6000M or BE6000H. • 24 Voicemail ports with maximum 6 VUI ports, @ 1000 BHCA • 500 IMAP sessions • 150 CPCA sessions
Unified Communications Manager – Instant Messaging & Presence Service	• 150 Users for BE6000S, 1000 Users for BE6000M or BE6000H • XMPP Load • 20 IM per user per hour • 2 State changes per user per hour • 20 contacts per user
Unified Contact Center Express/IP IVR	• 100 Agents @ 15 BHCA per Agent (BE6000M or BE6000H only) • 10 Recording Sessions • 100 IVR Sessions • Periodic Historical reporting For more details, see Cisco Unified Contact Center Express Design Guides.
Cisco Emergency Responder	For more details, see datasheets .
Cisco Unified Attendant Console	• Up to 50 operators • Up to 100 queues • Different music in different queues Comparison between various CUxAC editions.
Cisco Expressway with registrations, or Cisco Video Communication Appliance	• 100 Traversal and non-traversal calls • Up to 30 MCUs For more details, refer to Cisco VCS-C Datasheet.
Cisco TelePresence Server Virtual Machine	For 10HD ports per VM
Cisco TelePresence Management Suite	For BE6000 Deployment - see TMS Installation Guide.

Application	Performance Limits
Cisco Paging Server Appliance	• 1000 Users • Pre-recorded / schedule broadcast • Notification • 911/emergency call monitoring / alerting / recording • Weather Alerting • 50 Users per paging group
Cisco Prime Collaboration Provisioning	• 150 Users on BE6000S • 1000 Users on BE6000M or BE6000H • 150 phones or voice terminals on BE6000S • 1200 phones or voice terminals on BE6000M • 2500 phones or voice terminals on BE6000H For more details, refer Quick Start Guides and Install and Upgrade Guides.

