Installation Guide for Cisco Unified Communications Manager and IM and Presence Service Release 11.5(1)

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Purpose

This document describes how to install the following software:

- Cisco Unified Communications Manager
- Cisco Unified Communications Manager IM and Presence Service

Audience

This installation guide is intended for administrators who are responsible for installing Cisco Unified Communications Manager and IM and Presence Service software.

Organization

The following table shows how this guide is organized:

Chapter	Description
Chapter 1	“Getting Started” Provides information about Cisco Unified Communications Manager and the IM and Presence Service, and the relationship between these nodes when they are installed together in a cluster.
Chapter 2	“Installation Planning” Provides information about system requirements.
Chapter 3	“Installation Overview” Provides an overview of the installation process, as well as task lists that outline the procedures you must complete for each type of installation.
Chapter 4	“Pre-installation Tasks” Provides instructions to complete tasks that you must perform before beginning an installation.
Chapter 5	“Installation Tasks” Provides instructions to install Cisco Unified Communications Manager and the IM and Presence Service.
Chapter 6	“Post-installation Tasks for Cisco Unified Communications Manager” Provides instructions to complete tasks that you must perform after you install Cisco Unified Communications Manager.
Chapter 7	“Post-installation Tasks for IM and Presence Service. ” Provides instructions to complete tasks that you must perform after you install the IM and Presence Service.
Chapter 8	“Troubleshooting” Provides information to help you diagnose problems that may occur during the installation.
Chapter 9	“Reference Information” Provides information about how to access the administration interfaces for Cisco Unified Communications Manager and for the IM and Presence Service.

Related Documentation

For additional installation and upgrade information, refer to the following documents:

- *Cisco Prime Collaboration Deployment Administration Guide*

This document describes how to use the Cisco Prime Collaboration Deployment application, which is designed to assist in the management of Unified Communication applications. You can use this application to perform tasks such as migrate existing clusters to new virtual machines, fresh installs, and upgrades on existing clusters.

- *Upgrade Guide for Cisco Unified Communications Manager*

  http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html

  This document describes how to upgrade Cisco Unified Communications Manager.

- *Administration Guide for Cisco Unified Communications Manager*

  http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html

  This document provides information about upgrading the Cisco Unified Communications Manager to a later appliance-based release.

- *Replacing a Single Server or Cluster for Cisco Unified Communications Manager*

  http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_installation_guides_list.html

  This document describes how to replace a Cisco Unified Communications Manager server or a cluster of servers.

- *Command Line Interface Reference Guide for Cisco Unified Communications Solutions*

  http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html

  This document describes the Command Line Interface for Cisco Unified Communications Manager. Some of these commands perform upgrade and installation-related tasks.

For further information about Cisco Unified Communications Manager documentation, refer to the following URL:

http://cisco.com/en/US/products/sw/voicesw/ps556/products_documentation_roadmaps_list.html.

The following table lists URLs for software and additional documentation.

Table 1: Quick Reference for URLs

Related Information and Software	URL
Cisco Unified Communications Manager service releases	http://www.cisco.com/kobayashi/sw-center/sw-voice.shtml

Conventions

This document uses the following conventions:

Convention	Description
boldface font	Commands and keywords are in **boldface**.

Convention	Description
italic font	Arguments for which you supply values are in italics.
[ ]	Elements in square brackets are optional.
{ x | y | z }	Alternative keywords are grouped in braces and separated by vertical bars.
[x | y | z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
screen font	Terminal sessions and information the system displays are in screen font.
`boldface screen` font	Information you must enter is in **`boldface screen`** font.
italic screen font	Arguments for which you supply values are in italic screen font.
^	The symbol ^ represents the key labeled Control—for example, the key combination ^D in a screen display means hold down the Control key while you press the D key.
< >	Nonprinting characters, such as passwords, are in angle brackets.

Notes use the following conventions:

Note Means reader take note. Notes contain helpful suggestions or references to material not covered in the publication.

Timesavers use the following conventions:

Timesaver Means the described action saves time. You can save time by performing the action described in the paragraph.

Tips use the following conventions:

Tip Means the information contains useful tips.

Cautions use the following conventions:

Caution Means reader be careful. In this situation, you might do something that could result in equipment damage or loss of data.

Warnings use the following conventions:

Warning This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, you must be aware of the hazards involved with electrical circuitry and familiar with standard practices for preventing accidents.

Obtain Support

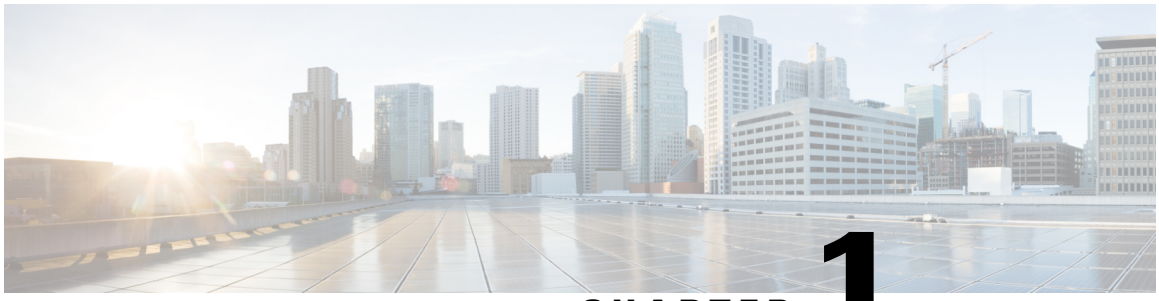
For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly What's New in Cisco Product Documentation, which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

Cisco Product Security Overview

This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at: http://www.cisco.com/wwl/export/crypto/tool/stqrg.html. If you require further assistance please contact us by sending email to export@cisco.com.



CHAPTER 1

Getting Started

The following sections provide information about Cisco Unified Communications Manager and the IM and Presence Service, and the relationship between these nodes when they are installed together in a cluster.

- About Cisco Unified Communications Manager, page 1
- About the IM and Presence Service, page 1
- About the System Topology, page 1

About Cisco Unified Communications Manager

Cisco Unified Communications Manager serves as the software-based call-processing component of the Cisco Unified Communications family of products. A wide range of Cisco Unified Computing System (UCS) servers provides high-availability server platforms for Cisco Unified Communications Manager call processing, services, and applications.

About the IM and Presence Service

IM and Presence, which is a service of Cisco Unified Communications Manager, provides native standards-based dual-protocol enterprise instant messaging (IM) and network-based availability as part of Cisco Unified Communications. This secure, scalable, and easy-to-manage service offers users feature-rich communications capabilities both within and external to the enterprise.

About the System Topology

This section provides an overview of the system topology and describes the relationship between the types of nodes in the topology.

Clusters

Clusters provide a mechanism for distributing call processing and database replication among multiple servers. They provide transparent sharing of resources and features and enable system scalability.

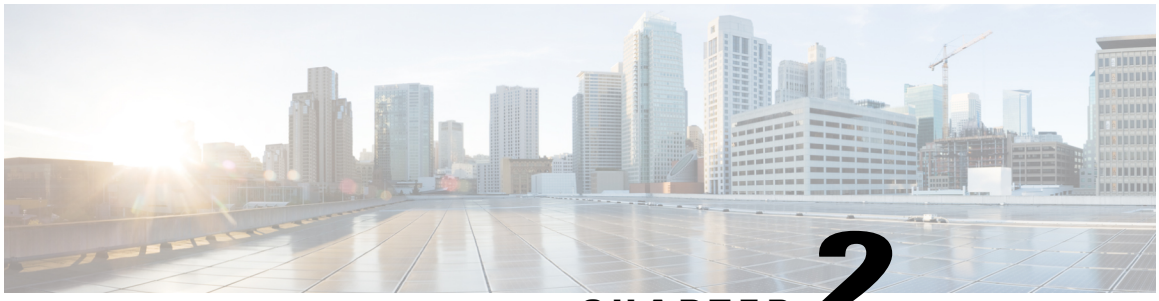
A cluster comprises a set of Cisco Unified Communications Manager (Unified Communications Manager) nodes and IM and Presence nodes that run compatible software versions.

Publisher Nodes and Subscriber Nodes

Within a cluster, there is a database publisher for each type of node that you install.

When you install Unified Communications Manager, the installation wizard prompts you to specify whether the node you are installing is the first node in the cluster. The first Unified Communications Manager node that you install becomes the publisher node, because it publishes the voice and video database to the other Unified Communications Manager nodes in the cluster. All subsequent nodes in the cluster are called subscriber nodes. Each subscriber node must be associated with the publisher node. You must set up all subscriber nodes in the system topology on the publisher node before you install the software on the subscriber nodes.

When you install IM and Presence nodes, the first node that you install functions as the server for the IM and Presence database. Because this node publishes the database for all of the IM and Presence nodes in the cluster, it is referred to as the IM and Presence database publisher; however, you must install this and all other IM and Presence nodes as subscribers of the Unified Communications Manager publisher node. As with other subscriber nodes, you must add these in the system topology before you install the software.



CHAPTER 2

Installation Planning

The following sections provide information about the installation requirements.

- Requirements and Limitations, page 3
- Licensing, page 10
- Required Installation Information, page 11
- Export Unrestricted, page 16

Requirements and Limitations

The following sections provide information about the requirements that your system must meet, and limitations that apply when you install or upgrade Cisco Unified Communications Manager or IM and Presence Service.

Caution Do not modify any of the IM and Presence Service server entries on the Application Server or Server configuration pages of the Cisco Unified CM Administration interface. The IM and Presence Service upgrade process automatically updates these entries on the Cisco Unified Communications Manager cluster during the final stages (switch version) of the upgrade process.

For upgrades from Release 8.x or 9.x to Release 10.x or later, any manual modification of these entries during the upgrade process will result in data migration failures between IM and Presence Service and Cisco Unified Communications Manager. If such failures occur, you must restart the entire upgrade process for both Cisco Unified Communications Manager and IM and Presence Service clusters.

Limitations

This section describes the limitations that apply when you install or upgrade Cisco Unified Communications Manager or the IM and Presence Service.

Subnet Limitations

Do not install Cisco Unified Communications Manager in a large Class A or Class B subnet that contains a large number of devices.

Cluster Size

The number of call processing subscriber nodes in a cluster cannot exceed 4 subscriber nodes and 4 standby nodes, for a total of 8 subscribers. The total number of servers in a cluster, including the publisher node, TFTP server, and media servers, cannot exceed 21.

Note The maximum number of IM and Presence nodes in a cluster is 6.

Network Requirements

This section lists the requirements that your network must meet before you can deploy Cisco Unified Communications Manager and the IM and Presence Service.

IP Address Requirements

You must configure the server to use static IP addressing to ensure that the server obtains a fixed IP address. Using a static IP address also ensures that Cisco Unified IP Phones can register with the application when you plug the phones into the network.

DNS requirements

Note the following DNS requirements:

- Mixed-mode DNS deployments not supported—Cisco does not support mixed-mode deployments. Both Cisco Unified Communications Manager (Unified Communications Manager) and IM and Presence must either use or not use DNS.
- If your deployment uses DNS—Unified Communications Manager and IM and Presence should use the same DNS server. If you use different DNS servers between IM and Presence and Unified Communications Manager, it is likely to cause abnormal system behavior.
- If your deployment does not use DNS—You must modify the **Host Name/IP Address** field in the service profile for the Presence and IM UC service. If DNS is not supported, you must change the **Host Name/IP Address** field to the IP address of the IM and Presence publisher node. For more information about configuring services, see *System Configuration Guide for Cisco Unified Communications Manager* .
- Multinode considerations—If you are using the multinode feature in IM and Presence, see the section regarding multinode deployments in the *Configuration and Administration of IM and Presence on Cisco Unified Communications Manager* for DNS configuration options.

Platform Requirements

In this release, you cannot install or run Cisco Unified Communications Manager and the IM and Presence Service directly on server hardware; you must run these applications on virtual machines.

Before you can install or upgrade the software on a virtual machine, you must:

- configure the platform
- install and configure ESXi virtualization software
- deploy the correct OVA template for the release

This section provides information about the platform requirements that you must meet before you can deploy Cisco Unified Communications Manager and the IM and Presence Service on virtual machines.

Software Requirements

The following sections provide information about the software requirements that your deployment must meet.

Version Requirements

All servers in a cluster must run the same release of Cisco Unified Communications Manager. The only exception is during a cluster software upgrade, during which a temporary mismatch is allowed.

If you are installing IM and Presence nodes, the software version of the first IM and Presence node (the IM and Presence database publisher node) must match the first two numbers of the software version installed on the Unified Communications Manager publisher node. For example, IM and Presence Service software version 10.0.1.10000-1 is compatible with Cisco Unified Communications Manager software version 10.0.1.30000-2.

After you install the first IM and Presence node, the software version of any IM and Presence subscriber nodes that you install must match all five version numbers of the first IM and Presence node.

Software Restrictions

You cannot install or use third-party or Windows-based software applications. The system can upload and process only software that Cisco Systems approves. You must perform all software installations and upgrades using Cisco Unified Communications Operating System Administration.

For information about software compatibility for IM and Presence nodes, see the *Hardware and Software Compatibility Information for IM and Presence Service on Cisco Unified Communications Manager*.

For information about software compatibility for Cisco Unified Communications Manager, see the *Cisco Unified Communications Manager Software Compatibility Matrix*.

Browser Requirements

Cisco Unified Communications Manager and the IM and Presence Service both provide interfaces that you can use to configure and manage the system. You can access the interfaces by using the browsers and operating systems listed in the following table. Cisco does not support or test other browsers.

Table 2: Supported Browsers and Operating Systems

You can access Cisco Unified Communications Manager with this browser...	...if you use one of these operating systems
Microsoft Internet Explorer 8	• Microsoft Windows XP SP3 • Microsoft Windows Vista SP2 (or latest service pack available) • Microsoft Windows 7 (32-bit) (with latest service pack available)
Mozilla Firefox 3.x or 4.x (if available)	• Microsoft Windows XP SP3 • Microsoft Windows Vista SP2 (or latest service pack available) • Microsoft Windows 7 (32-bit) (latest service pack available) • Apple Mac OS X (latest service pack available)
Safari 4.x or 5.x (if available)	Apple Mac OS X (or newest OS release available)

User Name and Password Requirements

The following sections provide information about the account names and passwords that you must configure for Cisco Unified Communications Manager and the IM and Presence Service.

Accounts and Passwords for Unified Communications Manager

User Name and Password Requirements

Note The system checks your passwords for strength. See topics related to password considerations for guidelines on creating a strong password.

During the installation, you must specify the following user names and passwords:

- Administrator Account user name and password
- Application User name and password
- Security password

Administrator Account User Name and Password

You use the Administrator Account user name and password to log in to the following areas:

- Cisco Unified Communications Operating System Administration
- Disaster Recovery System
- Command Line Interface

To specify the Administrator Account user name and password, follow these guidelines:

- Administrator Account user name—The Administrator Account user name must start with an alphabetic character and can contain alphanumeric characters, hyphens and underscores.
- Administrator Account password—The Administrator Account password must be at least six characters long and can contain alphanumeric characters, hyphens, and underscores.

You can change the Administrator Account password or add a new Administrator account by using the command line interface. For more information, see the Command Line Interface Reference Guide for Cisco Unified Communications Solutions.

Application User Name and Password

When you install Cisco Unified Communications Manager, you must enter an Application User name and password. You use the Application User name and password to access applications that are installed on the system, including the following areas:

- Cisco Unified CM Administration
- Cisco Unified Serviceability
- Real Time Monitoring Tool
- Cisco Unified Reporting

To specify the Application User name and password, follow these guidelines:

- Application User name - The Application User name must start with an alphabetic character and can contain alphanumeric characters, hyphens and underscores.
- Application User password - The Application User password must be at least six characters long and can contain alphanumeric characters, hyphens, and underscores.

Caution Do not use the system application name as the Application User name. Using a system application name causes the installation to fail with an unrecoverable error during the installation of the database

System application names are:

- CCMSysUser
- WDSysUser
- CCMQRTSysUser
- IPMASysUser
- WDSecureSysUser
- CCMQRTSecureSysUser
- IPMASecureSysUser
- TabSyncSysUser
- CUCService

You can change the Application User name and password by using the command line interface. For more information, see the *Command Line Interface Reference Guide for Cisco Unified Communications Solutions*.

Security Password

During the installation, you must specify a security password. Cisco Unified Communications Manager systems use this password to authorize communications between nodes in the cluster, including IM and Presence Service nodes. This password must be identical on all nodes in the cluster.

The Security password must be at least six characters long and can contain alphanumeric characters, hyphens, and underscores.

Accounts and Passwords for IM and Presence Service

Required passwords

During installation of the IM and Presence Service, you must specify the following usernames and passwords:

Administrator account username and password

During installation, you must create an Administrator Account username and password to log into the following areas:

- Cisco Unified Operating System Administration interface
- Disaster Recovery System Administration interface
- Command Line Interface (CLI)

The Administrator login must start with an alphabetic character, be at least six characters long, and can contain alphanumeric characters, hyphens, and underscores.

If you lose the Administrator password and cannot access the system, you can recover the Administrator password in Cisco Unified Communications Operating System Administration.

If you need to reset the Administrator password, use the CLI.

Application username and password

During the installation of Cisco Unified Communications Manager, you are prompted to create an Application User name and password. Use this same Application User name and password when you sign into the Cisco Unified CM IM and Presence Administration interface.

If you need to reset the Application User password, use the CLI.

InterCluster Peer-User and Admin-CUMA Application User Roles Deprecated

The application user group roles InterCluster Peer-User and Admin-CUMA are deprecated from release 10.0(1). Any application users with these roles configured in releases 8.x or 9.x have the roles removed during an upgrade to any 10.x release. After the upgrade the administrator must configure appropriate roles for these users.

Note For intercluster to function correctly, the AXL user defined on the IM and Presence Service user interface (**Presence** > **Inter-Clustering**) must have a Standard AXL API Access role associated with it on the Cisco Unified Communications Manager application user page.

Password Recommendations

The installation wizard checks to ensure that you enter a strong password. To create a strong password, follow these recommendations:

- Mix uppercase and lowercase letters.
- Mix letters and numbers.
- Include special symbols.
- Remember that longer passwords are stronger and more secure than shorter ones.

Avoid the following types of passwords:

- Do not use recognizable words, such as proper names and dictionary words, even when combined with numbers.
- Do not invert recognizable words.
- Do not use word or number patterns, such as aaabbb, qwerty, zyxwvuts, 123321, and so on.
- Do not use recognizable words from other languages.
- Do not use personal information of any kind, including birthdays, postal codes, names of children or pets, and so on.

Installation Time Requirements

Time Requirements for Cisco Unified Communications Manager

The entire installation process, excluding pre- and post-installation tasks, takes 45 to 90 minutes, depending on your server type.

Time Requirements for IM and Presence Nodes

The entire IM and Presence installation process, excluding pre- and post-installation tasks, takes approximately 45 to 90 minutes per server, depending on your server type.

Licensing

The following sections provide information about the licensing requirements for Cisco Unified Communications Manager and the IM and Presence Service.

Cisco Unified Communications Manager License Requirements

Use the Cisco Prime License Manager to allocate and monitor the licenses for Cisco Unified Communications Manager, its applications and endpoints. See the *Cisco Prime License Manager User Guide* for information about generating and installing licenses.

Important Unused PAKs and/or licenses for versions prior to Release 9.0 cannot be installed once your system has been upgraded to Release 9.0 or later. If you have uninstalled PAKs, install all licenses before upgrading.

IM and Presence license requirements

The IM and Presence Service does not require a server license or software version license. However, you must assign users and enable the IM and Presence Service for each assigned user.

Note With the Jabber for Everyone Offer, no end user licenses are required to enable IM and Presence functionality. See the *Jabber for Everyone Quick Start Guide* for more information.

You can assign IM and Presence on a per user basis, regardless of the number of clients you associate with each user. When you assign IM and Presence to a user, this enables the user to send and receive IMs and also to send and receive availability updates. If users are not enabled for IM and Presence, they will not be able to log in to the IM and Presence server to view the availability of other users, send or receive IMs, and other users will not see their availability status.

You can enable a user for IM and Presence using any of the following options:

- The **End User Configuration** window in Cisco Unified Communications Manager. See the *Cisco Unified Communications Manager Administration Guide* for more information.

- The Bulk Administration Tool (BAT)
- Assign IM and Presence to a feature group template which you can reference from the **Quick User/Phone Add** window in Unified Communications Manager.

Refer to the*System Configuration Guide for Cisco Unified Communications Manager* for more information.

IM and Presence capabilities are included within both User Connect Licensing (UCL) and Cisco Unified Workspace Licensing (CUWL). IM and Presence capabilities can also be acquired for users that are not Cisco Unified Communications Manager IP Telephony users through the Jabber for Everyone Offer. See the *Jabber for Everyone Quick Start Guide* for more information.

Required Installation Information

When you install either Cisco Unified Communications Manager or the IM and Presence Service on a server, the installation process requires you to provide specific information. You can provide this information manually during the installation process or you can provide it using an answer file. For each server that you install in a cluster, you must gather this information before you begin the installation process.

The following table lists the information that you must gather before you begin the installation.

Note Because some of the fields are optional, they may not apply to your configuration. For example, if you decide not to set up an SMTP host during installation, the parameter still displays, but you do not need to enter a value.

You cannot change some of the fields after the installation without reinstalling the software, so be sure to enter the values that you want. The last column in the table shows whether you can change a parameter after installation, and if you can, it provides the appropriate menu path or Command Line Interface (CLI) command.

Cisco recommends that you make copies of this table and record your entries for each server in a separate table, even if you are planning to use the DMABackupInfo.inf file to configure your system.

Table 3: Required Installation Information

Configuration data	Description	Editable after installation	Your entry
Administrator Credentials			
Administrator Login	Specifies the name that you want to assign to the Administrator account.	No After installation, you can create additional administrator accounts, but you cannot change the original administrator account user ID.	
Administrator Password	Specifies the password for the Administrator account.	Yes CLI: set password admin	
Application User Credentials			

Configuration data	Description	Editable after installation	Your entry
Application User Username	Specifies the user ID for applications installed on the system.	Yes CLI: utils reset ui administrator name	
Application User Password	Specifies the password for applications on the system.	Yes CLI: utils reset ui administrator password	
Security Password			
Security password for Cisco Unified Communications Manager	Servers in the cluster use the security password to communicate with one another. Set this password on the Cisco Unified Communications Manager publisher node, and enter it when you install each additional node in the cluster, including IM and Presence nodes.	Yes; you must apply the change to all nodes in the cluster and reboot all nodes. You can change the security password on the Cisco Unified Communications Manager publisher node using the following CLI command: set password security	
Certificate Information			
Organization	Used to create the Certificate Signing Request.	Yes CLI: set web-security	
Unit	Used to create the Certificate Signing Request.	Yes CLI: set web-security	
Location	Used to create the Certificate Signing Request.	Yes CLI: set web-security	
State	Used to create the Certificate Signing Request.	Yes CLI: set web-security	
Country	Used to create the Certificate Signing Request.	Yes CLI: set web-security [orgunit] [orgname] [locality] [state]	
(Optional) SMTP			

Configuration data	Description	Editable after installation	Your entry
SMTP Location	Specifies the name of the SMTP host that is used for outbound email. You must fill in this field if you plan to use electronic notification. If not, you can leave it blank.	Yes • In Cisco Unified Communications Operating System Administration: select **Settings** > **SMTP** and enter the IP address or Hostname in the SMTP Host Field. • CLI: **set smtp**	
NIC Interface Settings			
NIC Speed	If you do not enable automatic negotiation of the ethernet Network Interface Card (NIC) speed, you must select the NIC speed (either 10 megabit or 100 megabit).	Yes CLI: set network nic	
NIC Duplex	If you do not enable automatic negotiation of the ethernet Network Interface Card (NIC) duplex setting, you must select the NIC duplex setting (either Full or Half).	Yes CLI: set network nic	
MTU Size **Note** The MTU setting must be the same on all nodes in a cluster.	The maximum transmission unit (MTU) represents the largest packet, in bytes, that this host will transmit on the network. The value must not exceed the lowest MTU size that is configured on any link in your network. Default: 1500 bytes	Yes CLI: set network mtu	
Network Information			

Configuration data	Description	Editable after installation	Your entry
DHCP (Dynamic Host Configuration Protocol)	Select **Yes** if you want to use DHCP to automatically configure the network settings on your server. If you select **No**, you must enter a hostname, IP Address, IP Mask, Gateway, and DNS configuration.	Yes. • In Cisco Unified Operating System Administration: select **Settings** > **IP** > **Publisher** • CLI: set network dhcp	
Hostname	If DHCP is set to No, you must enter a hostname for this machine.	Yes; for Cisco Unified Communications Manager nodes, choose one of the following: • In Cisco Unified Communications Operating System Administration, select **Settings** > **IP** > **Ethernet** • CLI: set network IP To change the hostname on a IM and Presence server, see *Changing IP Address and Hostname for Cisco Unified Communications Manager and IM and Presence Service*.	

Configuration data	Description	Editable after installation	Your entry
IP Address	If DHCP is set to No, you must enter the IP address of this machine.	Yes; for Cisco Unified Communications Manager nodes, choose one of the following: • In Cisco Unified Communications Operating System Administration, select **Settings** > **IP** > **Ethernet** • CLI: set network IP eth0 [ip-address] [ip-mask] To change the IP address on a IM and Presence server, see *Changing IP Address and Hostname for Cisco Unified Communications Manager and IM and Presence Service*.	
IP Mask	If DHCP is set to No, you must enter the IP subnet mask of this machine. The subnet mask together with the IP address defines the network address and the host address. The subnet mask must use the following format: 255.255.255.0	Yes • In Cisco Unified Communications Operating System Administration, select **Settings** > **IP** > **Ethernet** • CLI: set network IP eth0 [ip-address] [ip-mask]	
Gateway Address	If DHCP is set to No, you must enter the gateway address.	Yes. • In Cisco Unified Communications Operating System Administration, select **Settings** > **IP** > **Ethernet** • CLI: set network gateway	
(Optional) DNS			

Configuration data	Description	Editable after installation	Your entry
DNS Primary	If you have a Domain Name Server (DNS), IM and Presence contacts this DNS server first when attempting to resolve hostnames.	Yes CLI: set network dns primary	
DNS Secondary	When a primary DNS server fails, IM and Presence will attempt to connect to the secondary DNS server.	Yes CLI: set network dns secondary	
Domain	Represents the name of the domain in which this machine is located	Yes CLI: set network domain	
Timezone			
Time Zone	Reflects the local time zone and offset from Greenwich Mean Time (GMT). Select the time zone that most closely matches the location of your machine.	Yes CLI: set timezone	
Network Time Protocol			
NTP Server IP Address	During installation of the IM and Presence publisher node, you must specify the IP address of an external Network Time Protocol (NTP) server. Cisco recommends that you use the Cisco Unified Communications Manager publisher node as the NTP server.	Yes In Cisco Unified Communications Operating System Administration, select **Settings** > **NTP Servers**	

Export Unrestricted

This release of Cisco Unified Communications Manager and IM and Presence Service supports an export unrestricted (XU) version.

Note Unrestricted versions of software are intended only for a very specific set of customers who do not want various security capabilities; unrestricted versions are not intended for general deployments.

Export unrestricted versions differs from restricted versions as follows:

- Encryption of user payload (information exchange) is not supported.
- External SIP interdomain federation with Microsoft OCS/Lync or AOL is not supported.
- After you install an unrestricted release, you can never upgrade to a restricted version. A fresh install of a restricted version on a system that contains an unrestricted version is also not supported.
- All nodes within a single cluster must be in the same mode. For example, Cisco Unified Communications Manager and IM and Presence nodes in the same cluster must either all be in unrestricted mode or all be in restricted mode.
- IP phone security configurations are modified to disable signaling and media encryption (including encryption provided by the VPN phone feature).

You can perform a fresh install of an unrestricted version by downloading the required UCSInstall file.

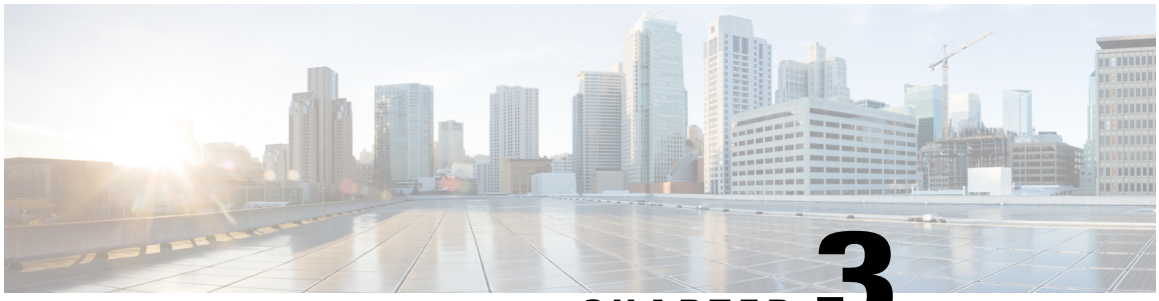
Note Be aware that after you install an unrestricted release, you can never upgrade to a restricted version. You are not allowed to perform a fresh installation of a restricted version on a system that contains an unrestricted version.

For all Graphical User Interfaces (GUIs) and Command Line Interfaces (CLIs), the Administrator can view the product version (restricted or export unrestricted).

The following table describes the GUI items that are not available for the export unrestricted version of IM and Presence.

Export unrestricted GUI item location	**Description**
Cisco Unified Communications Manager Administration	
Advanced Features > **VPN**	This menu and its options are not available.
System > **Security** > **Phone Security Profile**	The **Device Security Mode** is set to **Non Secure** and is not configurable.
Cisco Unified CM IM and Presence Administration	

System > **Security** > **Settings**	You cannot check the Enable XMPP Client to IM/P Service Secure Mode setting.
	You cannot check the Enable XMPP Router-to-Router Secure Mode setting.
	You cannot check the Enable Web Client to IM/P Service Secure Mode setting.
	The option to set SIP intra-cluster Proxy-to-Proxy Transport Protocol to TLS has been removed.
System > **Service Parameters - Cisco SIP Proxy service**	All TLS options have been removed for the Transport Preferred Order parameter.
	The TLS option has been removed from the SIP Route Header Transport Type parameter.
Presence > **Inter-domain Federation** > **SIP Federation**	When you configure interdomain federation to OCS/Lync, you will receive warning popup to indicate that it is only possible to directly federate with another OCS/Lync within the enterprise. Interdomain federation to OCS/Lync outside the enterprise is not supported in unrestricted mode.
Presence > **Inter-domain Federation** > **XMPP Federation** > **Settings**	You cannot configure the security mode; It is set to "NO TLS".
Presence > **Routing** > **Settings**	You cannot set any TLS or HTTPS listeners as the preferred proxy listener.



CHAPTER 3

Installation Overview

- Installation Overview, page 19
- Installation and Configuration Task Lists, page 20

Installation Overview

You can use the procedures in this section to install both the Cisco Unified Communications Manager and the IM and Presence Service.

If you are installing both Cisco Unified Communications Manager and IM and Presence Service nodes in your cluster, you must complete the installation and configuration tasks in the following order:

1. Install the Cisco Unified Communications Manager software on the first node and configure it as the publisher node for the cluster.
2. Install the Cisco Unified Communications Manager software on the subscriber nodes and configure them.
3. Perform all post-installation tasks for Cisco Unified Communications Manager nodes.
4. Install the IM and Presence Service and configure the node as the IM and Presence Service database publisher node.
5. Install the IM and Presence Service on the subscriber nodes and configure them.
6. Perform all post-installation tasks for the IM and Presence Service nodes.

Types of Installation

You can perform a basic installation, or you can upgrade during an installation. The table below describes these two options.

Table 4: Installation Types

Installation Types	Description
Basic installation	This option represents the basic Cisco Unified Communications Manager installation, which installs the software from the installation disc or from an ISO file stored in a virtual machine. This option does not use any imported data. You can use this option to install the software manually, or you can use an answer generator file to perform an unattended installation. You can also use this option when you have a server on which the software is pre-installed.
Apply a patch to upgrade during an installation (available on Unified Communications Manager nodes only)	This option allows you to upgrade the software version that is contained on the installation disc with a later release. You can only apply one patch during the installation process. **Note** Ensure that you have the software image available on DVD or on a remote server prior to choosing this option.

Important

- Install the software during off-peak hours or during a maintenance window to avoid impact from interruptions.
- For a short period of time after you install Cisco Unified Communications Manager or switch over after upgrading to a different product version, settings changes made by phone users may be lost. Examples of phone user settings include call forwarding and message waiting indication light settings. This can occur because Cisco Unified Communications Manager synchronizes the database after an installation or upgrade, which can overwrite phone user settings changes.

Installation and Configuration Task Lists

The following sections provide a list of the high-level tasks that you must perform for each of the installation scenarios. For detailed information about how to perform these tasks, refer to the list of Related Topics included with each task list.

Note For information about replacing a Unified Communications Manager server or cluster, or for information about changing the specifications of a virtual machine, refer to *Replacing a Single Server or Cluster for Cisco Unified Communications Manager*.

Perform a Basic Installation

Complete the high-level tasks listed in this section when you perform a basic installation on a Cisco Unified Communications Manager publisher node, or on a subscriber node in the cluster. Subscriber nodes can be either Cisco Cisco Unified Communications Manager nodes, or IM and Presence nodes.

Procedure

Step 1 Perform all pre-installation tasks that apply to your site.

Step 2 Follow the procedure to start installing the software for a basic installation.

Step 3 Follow the procedure for configuring a basic installation.

Step 4 When the Configuration window displays, specify whether the server is the first node in the cluster (the publisher node), or a subscriber node:

- choose **Yes** to configure the new server as the Cisco Cisco Unified Communications Manager publisher node
- choose **No** to configure the new server as a subscriber node

Step 5 Follow the procedure to set up the node. Use the procedure for setting up the publisher node, or for setting up subscriber nodes, depending on the option that you chose in the previous step.

Step 6 Perform all post-installation tasks that apply to your site.

Related Topics

Pre-installation Tasks
Start Basic Installation, on page 41
Configure Basic Installation, on page 48
Set Up Cisco Cisco Unified Communications Manager Publisher Node, on page 49
Set Up Subscriber Node, on page 52
Post-installation Tasks for Cisco Unified CM
Post-installation tasks for IM and Presence Service

Apply a Patch to Upgrade During an Installation

Complete the high-level tasks listed in this section when you apply a patch and upgrade to a newer version of Unified Communications Manager during an installation. This option is available only for Unified Communications Manager nodes.

You can upgrade to a later release by downloading and applying a patch during installation of the Unified Communications Manager publisher node.

When you upgrade during an installation, the software versions must have the same major and minor release number. Major and minor release numbers are defined as follows:

`10.x`

where `10` = major release number and `x` = minor release number

Procedure

Step 1 Perform all pre-installation tasks that apply to your site.

Step 2 Follow the procedure to start installing the software for a basic installation.

Step 3 Follow the procedure to apply a software patch.

Step 4 Follow the procedure for configuring a basic installation.

Step 5 When the Configuration window displays, specify whether the server is the first node in the cluster (the publisher node), or a subscriber node:

- choose **Yes** to configure the new server as the Cisco Cisco Unified Communications Manager publisher node
- choose **No** to configure the new server as a subscriber node

Step 6 Follow the procedure to set up the node. Use the procedure for setting up the first node, or for setting up subscriber nodes, depending on the option that you chose in the previous step.

Step 7 Perform all post-installation tasks that apply to your site.

Related Topics

Pre-installation Tasks
Apply a Patch to Upgrade During Installation, on page 44
Configure Basic Installation, on page 48
Set Up Cisco Cisco Unified Communications Manager Publisher Node, on page 49
Set Up Subscriber Node, on page 52
Post-installation Tasks for Cisco Unified CM
Post-installation tasks for IM and Presence Service

Install a New Node in an Existing Cluster

Complete the high-level tasks listed in this section when you install a new Cisco Unified Communications Manager node or a new IM and Presence node in an existing cluster. The new node must be a subscriber node and cannot be a Cisco Unified Communications Manager publisher node.

Note You must add an IM and Presence server using Cisco Unified CM Administration before installing the server node in a cluster. See topics related to adding a server before installing the node in the cluster in the *Administration Guide for Cisco Unified Communications Manager* .

Procedure

Step 1 Before you make any changes to your existing cluster, be sure that you have a current backup file.

Step 2 Perform all pre-installation tasks that apply to your site.

Step 3 Ensure that you have the appropriate number of licenses to support adding a new node.

Step 4 Before you install the new node, ensure that you have configured the new node as the publisher node. From Cisco Unified CM Administration on the publisher node, choose **System** > **Server** and configure the IP address for the subscriber nodes.
For more information, see the *Cisco Unified Communications Manager Administration Guide*.

Step 5 Record the configuration settings for each server that you plan to install.

Step 6 Follow the procedure to begin installing the software for a basic installation.
You must install the same software version on all nodes in the cluster. If you do not have the correct version, you need to download updated software from Cisco.com.

Step 7 Follow the procedure to configure the basic installation.

Step 8 When the First Node Configuration displays, choose **No** to configure the new server as the subscriber node.

Step 9 Follow the procedure for configuring a subscriber node.

Step 10 Apply security to the new node in the cluster.

Step 11 Perform all post-installation tasks that apply to your site.

Step 12 If your cluster is running in mixed mode, ensure that you have your USB key and the latest CTL Client installed on the PC that you use to communicate with the publisher node. After you finish installing the new node, you will need to update the CTL file on all nodes.

Important After you install a new node in an existing cluster, all phones that are registered to the cluster are reset.

Related Topics

Required Installation Information, on page 11
Pre-installation Tasks
Start Basic Installation, on page 41
Configure Basic Installation, on page 48
Set Up Subscriber Node, on page 52
Apply Security, on page 56
Post-installation Tasks for Cisco Unified CM
Post-installation tasks for IM and Presence Service

Configure a Server with Pre-Installed Software

Complete the high-level tasks listed in this section if you have a new server with either the Cisco Cisco Unified Communications Manager software or the IM and Presence software pre-installed. You must perform these tasks to configure the pre-installed software.

Procedure

Step 1 Perform all pre-installation tasks that apply to your site.

Step 2 Follow the procedure to start installing the software for a basic installation. When the Platform Installation Wizard window displays, choose **Skip**.

Step 3 Follow the procedure to enter preexisting configuration information.

Step 4 Follow the procedure for configuring a basic installation.

Step 5 Perform all post-installation tasks that apply to your site.

Related Topics

Pre-installation Tasks
Start Basic Installation, on page 41
Enter Preexisting Configuration Information , on page 43
Configure Basic Installation, on page 48
Set Up Cisco Cisco Unified Communications Manager Publisher Node, on page 49
Set Up Subscriber Node, on page 52
Post-installation Tasks for Cisco Unified CM
Post-installation tasks for IM and Presence Service

Perform an Unattended Installation

Complete the high-level tasks listed in this section when you use the Cisco Unified Communications Answer File Generator to perform an unattended installation. This option is available only for fresh installations and is not supported if you are performing an upgrade during an installation. You can perform an unattended installation on either Cisco Unified Communications Manager nodes, or IM and Presence nodes.

Procedure

Step 1 Perform all pre-installation tasks that apply to your site.

Step 2 Ensure that a floppy image is mounted with an empty file that is named `POWER_OFF_AFTER_SKIP_INSTALL` before you begin the installation procedure.

Step 3 Use the *Cisco Unified Communications Answer File Generator* to generate answer files.

Step 4 Ensure that the USB key where you store the answer files has a FAT32 file system.

Step 5 Follow the procedure to start installing the software for a basic installation.

Step 6 Follow the procedure for configuring a basic installation.

Step 7 When the **Configuration** window displays, specify whether the server is the publisher node in the cluster, or a subscriber node:

- Choose **Yes** to configure the new server as the Cisco Unified Communications Manager publisher node

- Choose **No** to configure the new server as a subscriber node

Step 8 Follow the procedure to set up the node. Use the procedure for setting up the publisher node, or for setting up subscriber nodes, depending on the option that you chose in the previous step.

Step 9 Perform all post-installation tasks that apply to your site.

Related Topics

Pre-installation Tasks
Generate answer file, on page 32
Reformat USB key to FAT32 file system, on page 33
Start Basic Installation, on page 41
Configure Basic Installation, on page 48
Set Up Cisco Cisco Unified Communications Manager Publisher Node, on page 49
Set Up Subscriber Node, on page 52
Post-installation Tasks for Cisco Unified CM
Post-installation tasks for IM and Presence Service

Install a Unified Communications Manager Cluster in Parallel

Complete the high-level tasks listed in this section to install Unified Communications Manager nodes in parallel. When you install nodes in parallel, you begin the installation of the publisher node and subscriber nodes at the same time.

Procedure

Step 1 Perform all pre-installation tasks that apply to your site.

Step 2 Follow the procedure to start installing the software for a basic installation. Begin the installation on all nodes.

Step 3 Follow the procedure for configuring a basic installation.

Step 4 When the **Configuration** window displays, designate one node to be the first node (the publisher node) and designate the remaining nodes as subscriber nodes:

a) choose **Yes** to configure one node as the Cisco Unified Communications Manager publisher node

b) choose **No** on the remaining nodes to configure them as subscriber nodes
Do not proceed further with the installation of the subscriber nodes at this point. You must wait until you complete the installation of the publisher node before you continue with the installation of the subscriber nodes.

Step 5 Follow the procedure for setting up a Unified Communications Manager publisher node.

Step 6 Associate each of the subscriber nodes in the cluster with the publisher node using the Cisco Unified CM Administration interface. For more information, see the *Administration Guide for Cisco Unified Communications Manager* .

Step 7 Follow the procedure to set up a subscriber node.

Step 8 Perform all post-installation tasks that apply to your site.

Related Topics

Pre-installation Tasks
Start Basic Installation, on page 41
Configure Basic Installation, on page 48
Set Up Cisco Cisco Unified Communications Manager Publisher Node, on page 49
Set Up Subscriber Node, on page 52
Post-installation Tasks for Cisco Unified CM

Install an IM and Presence Service Cluster

Follow this sequence of tasks when you are configuring your multi-node IM and Presence Service deployment. You configure the IM and Presence Service multi-node feature, and manage your clusters, nodes and users using Cisco Unified CM Administration.

You can create the subscriber nodes in your topology before you install the IM and Presence Service software on these nodes. However, you cannot assign these subscriber nodes to a presence redundancy group before you install IM and Presence Service software on these subscriber nodes.

Before You Begin

- Determine the type of multi-node deployment model that you are going to configure.
- The Cisco XCP Router must be running for all availability services to function properly on IM and Presence Service (both SIP-based and XMPP-based client messaging).

Restriction

Your hardware must comply with the multi-node hardware recommendations.

Procedure

Step 1 Install and configure Cisco Unified Communications Manager.

Step 2 Install and configure the IM and Presence Service database node (the first server in the IM and Presence Service cluster).

Complete the installation of the IM and Presence Service database publisher node and confirm that services are running before you begin to install IM and Presence Service subscriber nodes.

Step 3 (On the Cisco Unified Communications Manager publisher node) Create all presence redundancy groups and nodes in the cluster.

Do not add a node in the Cisco Unified Communications Manager server list during the installation process.

Step 4 (On the IM and Presence Service database node) Associate each of the subscriber nodes in the cluster with the publisher node. You must associate the subscriber node with the publisher node before you install that subscriber IM and Presence Service node.

Step 5 Install and configure each of the subscriber nodes in the cluster.

Step 6 (On the Cisco Unified Communications Manager publisher node) Assign these nodes to the appropriate presence redundancy group.

Do not assign the subscriber node to a presence redundancy group until after you install it. If you assign a subscriber IM and Presence Service node to a cluster before you install it, users in remote clusters will not receive availability information. An availability outage will occur until you install the subscriber node.

Note Before you assign or move a node to a presence redundancy group, check the following:

- From the System troubleshooter page, verify that the Cisco IM and Presence Data Monitor service is running on all nodes.
- On the **Network services** screen in Cisco Unified Serviceability (on the subscriber node), verify that all IM and Presence Service services are running.
- If you plan to move or unassign a node in a presence redundancy group, you must turn off high-availability in that presence redundancy group before you move or unassign the node.

Step 7 Turn on high-availability in the presence redundancy group as required. See the *Administration Guide for Cisco Unified Communications Manager* for more information.

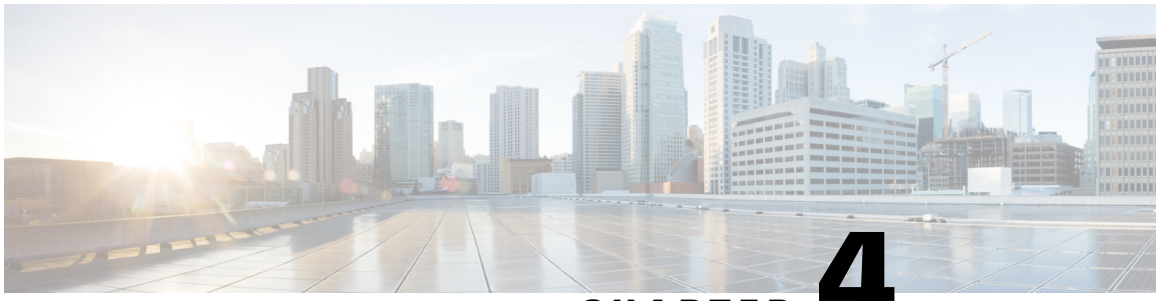
Step 8 Turn on the Sync Agent service on the publisher node to synchronize with the Cisco Unified Communications Manager user and device configuration information.

Step 9 When the synchronization is complete, turn on the Cisco SIP Proxy services, and verify that the Cisco XCP Router service is turned on.

Step 10 Turn on the XCP services applicable to the features in your deployment. See the documentation for those features to determine what XCP services you must turn on.

Troubleshooting Tips

- If you assign a node before you start the IM and Presence Service services, there is a possibility that users will not be able to sign in to Cisco Jabber. If this scenario occurs, restart the Cisco Client Profile Agent service. To start or restart IM and Presence Service services, select **Cisco Unified Serviceability > Tools > Control Center - Network Services**.
- The Cisco IM and Presence Data Monitor service delays feature service startup on subscriber nodes if IDS replication is not successfully established.



CHAPTER 4

Pre-Installation Tasks

- Perform Pre-Installation Tasks for Unified Communications Manager Nodes, page 29
- Perform pre-installation tasks for IM and Presence nodes, page 31
- Verify DNS Registration, page 32
- Generate answer file, page 32
- Reformat USB key to FAT32 file system, page 33

Perform Pre-Installation Tasks for Unified Communications Manager Nodes

Perform all pre-installation tasks to ensure that you can successfully install the Cisco Unified Communications Manager (Unified Communications Manager).

Procedure

Step 1 Review the installation requirements and record the configurations settings for each server that you plan to install.

Step 2 For every node in your cluster, create virtual machines using the Virtual Server Template (OVA file) recommended for your current release.
Different OVA files are available; choose the correct OVA file based on the environment in which you are deploying Cisco Unified Communications Manager.

Step 3 Place the installation ISO file in a location where the virtual machine can access it and edit the virtual machine's DVD drive to map to the file. Select the option to mount the DVD drive when you power on the virtual machine.
When you power on the virtual machine, it will mount the ISO file and start the installation process. Do not begin the installation process until you have completed all of the steps in this procedure.

Step 4 If you are installing a cluster or adding a node, verify that the links between servers meet the 80-ms round-trip time (RTT) requirement and that you have enough bandwidth to support database replication.

For more information on the 80-ms RTT requirement, refer to the *Cisco Unified Communications Solution Reference Network Design (SRND) based on Cisco Unified Communications Manager*, which you can find at http://www.cisco.com/en/US/products/sw/voicesw/ps556/products_implementation_design_guides_list.html.

Step 5 If you are getting the system time from an NTP server (mandatory for VMware deployments), verify that the publisher node can synchronize with the NTP server before you install a subscriber node. Log into the Command Line Interface on the publisher node and enter the following command: utils ntp status

Note To avoid potential compatibility, accuracy, and network jitter problems, the external NTP servers that you specify for the primary node must be NTP v4 (version 4). If you are using IPv6 addressing, external NTP servers must be NTP v4.

For more information, see the *Command Line Interface Reference Guide for Cisco Unifed Communications Solutions*.

Caution If the publisher node fails to synchronize with an NTP server, installation of a subscriber node can also fail.

Step 6 If your firewall is in the routing path, disable the firewall between nodes, if possible. Also, increase the firewall timeout settings until after you complete the installation.
To temporarily allow network traffic in and out of the nodes (for example, setting the firewall rule for these nodes to IP any/any) does not always suffice. The firewall might still close necessary network sessions between nodes due to timeouts.

Step 7 Do not run Network Address Translation (NAT) or Port Address Translation (PAT) between servers where you are installing Cisco Unified Communications Manager.

Step 8 Ensure that the network interface card (NIC) speed and duplex settings on the switch port are the same as those that you plan to set on the new server.
For GigE (1000/FULL), you should set NIC and switch port settings to Auto/Auto; do not set hard values.

Step 9 Enable PortFast on all switch ports that are connected to Cisco servers. With Portfast enabled, the switch immediately brings a port from the blocking state into the forwarding state by eliminating the forwarding delay [the amount of time that a port waits before changing from its Spanning-Tree Protocol (STP) learning and listening states to the forwarding state].

Step 10 If you use DNS, verify that all servers on which you plan to install Cisco Unified Communications Manager are properly registered in DNS.

Step 11 If you are using a server that is running VMware EX/ESXi and the motherboard has an ICH10 onboard SATA controller, you must disable the SATA controller in the BIOS. The ICH10 onboard SATA controller is not supported by EX/ESXi.

a) Boot the server and press F2 when prompted during bootup.
b) Select **Advanced** tab.
c) Select **Mass Storage Controllers Configuration**.
d) Set the Onboard SATA Controller to **Disabled**.

Step 12 Obtain a license file.

Note For more information on specifying the required number of licenses, refer to the *Administration Guide for Cisco Unified Communications Manager*.

Step 13 Configure any subscriber nodes on the publisher node before you install a subscriber node.
From Cisco Unified CM Administration on the publisher node, choose **System** > **Server** and configure the IP address for the subscriber nodes. For more information, see the *Administration Guide for Cisco Unified Communications Manager*.

Related Topics

Required Installation Information, on page 11
Licensing, on page 10
Verify DNS Registration, on page 32

Perform pre-installation tasks for IM and Presence nodes

You must complete the following pre-installation tasks before you begin to install the IM and Presence software.

Procedure

Step 1 Ensure that the Cisco Unified Communications Manager and IM and Presence software versions are compatible.

Step 2 Gather all the information you need to complete the installation and configuration of the IM and Presence software.

Step 3 For every node in your cluster, create virtual machines using the Virtual Server Template (OVA file) recommended for your current release.
Different OVA files are available; choose the correct OVA file based on the environment in which you are deploying Cisco Unified Communications Manager.

Step 4 Configure subscriber nodes on the publisher node before you install a subscriber node.
From Cisco Unified CM Administration on the publisher node, choose **System** > **Server** and configure the IP address for the subscriber nodes. For more information, see the *Cisco Unified Communications Manager Administration Guide*.

Step 5 Ensure that the IM and Presence server has network access to the Unified Communications Manager publisher server.
You can ping Unified Communications Manager from other servers.

Step 6 Ensure that you turn on the Cisco AXL Web Service on the associated Unified Communications Manager server.
Select **Tools** > **Service Activation** in Cisco Unified Serviceability.

Step 7 If you use DNS, ensure that you have configured the hostname of the new IM and Presence server on the DNS server and that the DNS server can resolve the hostname of the Unified Communications Manager publisher server and of other IM and Presence servers (if any).

Caution Cisco recommends that you use the same DNS servers between IM and Presence and Unified Communications Manager. If you use different DNS servers, it is likely to cause abnormal system behavior. Both Unified Communications Manager and IM and Presence must either use or not use DNS because Cisco does not support mixed-mode deployments. If you are using the multinode feature in IM and Presence, see the *Deployment Guide for IM and Presence Service on Cisco Unified Communications Manager* for DNS configuration options.

Related Topics

Version Requirements, on page 5
Required Installation Information, on page 11
Verify DNS Registration, on page 32

Verify DNS Registration

Follow this procedure if you use a DNS in your topology. You must verify that all servers to be added are registered in DNS properly by performing the following actions:

Procedure

Step 1 Open a command prompt.

Step 2 To ping each server by its DNS name, enter ping DNS_name.

Step 3 To look up each server by IP address, enter nslookup IP_address.

Generate answer file

The following procedure describes how to generate an answer file using the Cisco Unified Communications Answer File Generator.

Before You Begin

Gather the required installation and configuration information.

Procedure

Step 1 Access the Cisco Unified Communications Answer File Generator at the following URL: http://www.cisco.com/web/cuc_afg/index.html.

Step 2 Enter the required information for the node(s) that you wish to install.
You can specify installation and configuration information for the publisher node and up to 5 subscriber nodes in a cluster.

Note If DHCP client is used on the publisher server, and subscriber server answer files are also generated, you must specify the publisher server IP address.

Step 3 Select **Generate Answer Files**.

Step 4 Follow the instructions to download the answer file(s).
A separate answer file will be generated for each node that you want to install and configure.

Related Topics

Perform an Unattended Installation, on page 24

Reformat USB key to FAT32 file system

You may need to reformat the USB key for the answer file to the FAT32 file system using the Windows XP Disk Management Utility. The FAT file system format provides for larger storage capacity (for example, 1 Gigabyte). You may need to be an Administrator or a member of the Administrators group to perform this procedure.

Procedure

Step 1 Insert the USB key into a USB slot on the Windows XP computer.

Step 2 Select **Start** > **Control Panel** > **Administrative Tools** and double-select **Computer Management**.

Step 3 Expand the Storage tree and select **Disk Management**.

Step 4 Right-click the **Removable Disk** icon and select **Format**.

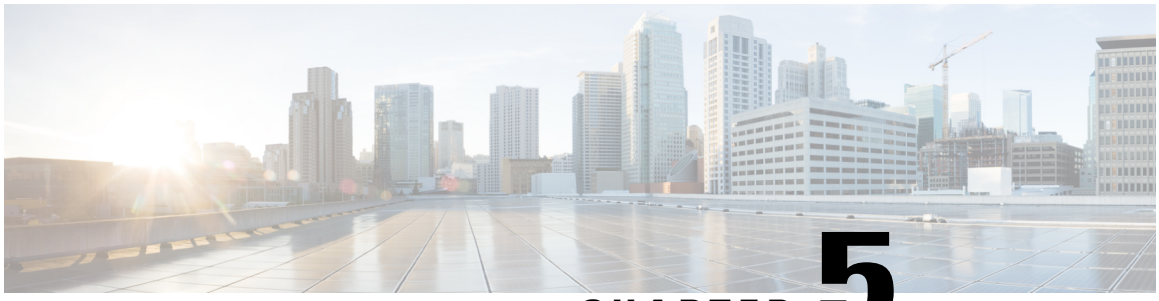
Step 5 Select **Yes** if you are asked whether you are sure that you want to format this partition.

Step 6 Select the **File System** and select **FAT32** from the list box. .

Step 7 Select **OK** and **OK** again when you are prompted to format the volume.

Related Topics

Perform an Unattended Installation, on page 24
Use answer file to install and configure IM and Presence



CHAPTER 5

Installation Tasks

- Before You Begin, page 35
- Touchless Installation for Virtual Machine, page 36
- Install Software, page 41
- Apply a Patch to Upgrade During Installation, page 44
- Configure Installation, page 48

Before You Begin

Before you begin the installation, review the following information:

- Make sure that the subscriber nodes that you are installing can connect to the publisher node server during the installation.
- Make sure that all Cisco Unified Communications Manager servers in a cluster have the same software version. Make sure that all IM and Presence servers in a cluster have the same version of the released software. The only exception is during a cluster software upgrade, during which a temporary mismatch is allowed. If you are installing IM and Presence nodes, Cisco Unified Communications Manager and IM and Presence Service software versions must have the same major and minor release number.
- Do not attempt to perform any configuration tasks during the installation.
- Be aware that directory names and filenames that you enter while you are running the installation program are case-sensitive.
- For a short period of time after you install Cisco Unified Communications Manager or switch over after upgrading to a different product version, settings changes made by phone users might get reset. Examples of phone user settings includes call forwarding and message waiting indication light settings. This can occur because Cisco Unified Communications Manager synchronizes the database after an installation or upgrade, which can overwrite phone user settings changes.

Installation Wizard

For instructions on how to navigate within the installation wizard, see the following table.

Table 5: Installation Wizard Navigation

To Do This	Press This
Move to the next field	Tab
Move to the previous field	Alt-Tab
Choose an option	Space bar or Enter
Scroll up or down in a list	Up or down arrow
Go to the previous window	Space bar or Enter to choose Back (when available)
Get help information on a window	Space bar or Enter to choose Help (when available)

Touchless Installation for Virtual Machine

Previous releases of Cisco Unified Communications Manager cluster environment required you to install the publisher node first before you proceed to install the subscriber nodes. You had to install the subscriber nodes after adding them to the server page of the publisher node and repeat the same procedure for each subscriber node. With the touchless installation feature, the subscriber nodes are configured dynamically along with the publisher node during their installation.

Touchless installation is a new feature in Cisco Unified Communications Manager. This feature makes the installation process seamless and promotes simplified cluster installation. The touchless installation proceeds without the requirement to provide any subscriber details in the installation wizard. Subscribers are not dependent on the installation of the publisher. This feature has the following benefits:

- No manual intervention and scheduling during the deployment of a new cluster.
- No manual entry of each subscriber and simplifies the addition of new subscribers to an existing cluster.
- No requirement to wait until the publisher node is active.

Automatic Sequencing of Touchless Server

Automatic sequencing is an approach that facilitates the installations of both the publisher node and the subscriber nodes in a cluster at the same time without manual intervention. Subscriber nodes wait for the publisher node to complete its installation, and then get added to the database of the publisher node to continue with their own installation. After the publisher node is installed, it authenticates each subscriber. After authentication, each subscriber node receives a signal from the publisher node and the installation of that subscriber node continues automatically.

Initiate automatic sequencing by enabling the **Dynamic Cluster Config Enable** timer checkbox and providing a value in the **Dynamic Cluster Config Timer** field. You can enable this timer by using one of the following methods:

- Answer File Generator (AFG) tool.

- Command line interface (CLI) command on the Cisco Unified Communications Manager publisher node.

Answer File Generator

Use the Answer File Generator (AFG) tool (http://www.cisco.com/web/cuc_afg/index.html) to generate the answer files or floppy image files for configuration. These files include `clusterConfig.xml` and `platformConfig.xml` files. The `clusterConfig.xml` file is a new file in Cisco Unified Communications Manager Release 10.5(2).

Start the virtual machine on which you mounted the ISO and floppy image to start the Cisco Unified Communications Manager installation. No manual intervention is required during installation of a standalone node or a cluster.

In a cluster environment, you can install both the publisher node and the subscriber nodes simultaneously. Sometimes, the installation of the subscriber nodes can stop during the installation of the publisher node. In this case, after the publisher node installation is complete, it generates a signal for the subscriber nodes to continue their installation.

Predefined Cluster Configurations (AFG Process)

With the implementation of this feature, the Answer File Generator (AFG) tool generates the `clusterConfig.xml` file along with the existing the `platformConfig.xml` file. If you provide the details of subscriber nodes to the AFG tool, the `clusterConfig.xml` file includes those details. After the Cisco Unified Communications Manager publisher is installed, it reads the `clusterConfig.xml` file and if the publisher finds any subscriber nodes, it adds them to its processnode tables. Adding the subscribers to processnode tables eliminates the need to wait for the Cisco Unified Communications Manager publisher to finish its installation, and then manually add the subscribers on the server page. The entire installation process occurs automatically.

Touchless Installation Configuration Task Flow

Procedure

	Command or Action	Purpose
Step 1	Generate and Download a Floppy Image, on page 38.	Generate the floppy image using the Answer File Generator tool. The floppy image consists of two precreated answer files—`platformConfig.xml` and `ClusterConfig.xml` files that are downloaded automatically when you download the floppy image.
Step 2	Install a Cluster, on page 39 • Install a Cluster When the Dynamic Cluster Configuration Timer is Enabled, on page 39	Install a cluster in one of the following ways: • Install the publisher node and subscriber nodes with no manual intervention by enabling the **Dynamic Cluster Config Enable** timer.

	Command or Action	Purpose
	• Install the Cluster When the Dynamic Cluster Configuration Timer is Not Enabled, on page 39	• Install the subscriber nodes when you do not enable the **Dynamic Cluster Config Enable** timer while generating the answer files.

Generate and Download a Floppy Image

The Cisco Unified Communications Answer File Generator web application generates the answer files for Cisco Unified Communications installations. These precreated answer files are `platformConfig.xml` and `ClusterConfig.xml` files and are included in the floppy image.

Perform the following procedure to generate and download the floppy image:

Procedure

Step 1 Log in to the Cisco Unified Communications Answer File Generator application.

Step 2 Enter details in the **Clusterwide Configuration** section.

Step 3 Enter details for the primary node in the **Primary Node Configuration** section.

Step 4 To enable Dynamic Cluster Configuration, from the **Dynamic-Cluster-Configuration** section, enable the **Dynamic Cluster Config Enable** timer check box and enter a value in the **Dynamic Cluster Config Timer** field.
Specify a value from 1 to 24 for this field, where the number indicates hours.

Note If you do not enable the **Dynamic Cluster Config Enable** timer and specify its value in the **Dynamic Cluster Config Timer** field while you to generate the answer files, you will have to enable this timer later when the publisher node gets installed automatically but the subscriber nodes are waiting for installation. Then, you will have to add the subscriber nodes manually so that their installation occurs automatically.

Step 5 Enter details for the secondary node in the **Secondary Node Configuration** section.

Step 6 In the **List of Secondary Nodes** list box, select **Add Secondary Node**.
The node that you add as secondary node appears in this list box.

Step 7 Repeat Steps 5 and 6 for additional secondary nodes.

Step 8 Click **Generate Answer Files**.
A dialog box appears showing the details for the primary node, the secondary node, and the `clusterConfig` file.

Step 9 In the **Communications Answer File Generator** dialog box, follow the download instructions, and then click the **Download File** button to download the answer files to your computer.

Install a Cluster

Depending on whether you enabled the **Dynamic Cluster Config Enable** timer in the Answer File Generator tool or not, you can choose one of the following ways to install a cluster:

- Install the publisher node and subscriber nodes with no manual intervention by enabling the **Dynamic Cluster Config Enable** timer. See Install a Cluster When the Dynamic Cluster Configuration Timer is Enabled, on page 39.
- Install the subscriber nodes when you do not enable the **Dynamic Cluster Config Enable** timer while generating the answer files. See Install the Cluster When the Dynamic Cluster Configuration Timer is Not Enabled, on page 39.

Install a Cluster When the Dynamic Cluster Configuration Timer is Enabled

Before You Begin

Enable the **Dynamic Cluster Config Timer** field by one of the following ways:

- Click the **Dynamic Cluster Config Enable** timer checkbox and enter a value in the **Dynamic Cluster Config Timer** field in the Answer File Generator tool. For details, see Step 4 of the Generate and Download a Floppy Image, on page 38 procedure.
- Enter the **set network cluster subscriber dynamic-cluster-configuration** {*default* | *no. of hours*} CLI command.

Procedure

Step 1 Mount the floppy image on the virtual machine.

Note If the virtual machine is Cisco Unified Communications Manager publisher node, then the floppy image contains both the `platformConfig.xml` and `ClusterConfig.xml` files. However, if the virtual machine is Cisco Unified Communications Manager subscriber node or IM and Presence publisher node or subscriber nodes, the floppy image contains only the `platformConfig.xml` file.

For details on how to create a floppy a new virtual floppy image, see http://docwiki.cisco.com/wiki/How_to_Use_the_AFG_with_the_Virtual_Floppy_Drive.

Step 2 Start the publisher node and all subscriber nodes.

Publisher node and subscriber nodes get installed automatically with no manual intervention. Each subscriber node gets automatically added to the publisher through the automatic sequencing approach.

Install the Cluster When the Dynamic Cluster Configuration Timer is Not Enabled

If you do not enable the **Dynamic Cluster Config Timer** field in the Answer File Generator tool, the publisher node gets installed automatically. However, the subscriber nodes will be waiting for their installation.

To avoid the waiting time of the subscriber nodes so that the cluster installation continues, perform one of following tasks:

- From the Cisco Unified Communications Manager, select the **Web Interface** and click the **Server** tab and add the subscriber nodes manually.
- Enable the **Dynamic Cluster Config Timer** field from the CLI of the publisher node with the new CLI command that is available in Cisco Unified Communications Manager Release 10.5(2)**—set network cluster subscriber dynamic-cluster-configuration** {*default* | *no. of hours*}. After you enable this timer, the subscriber nodes get added to the publisher automatically and the installation of the subscriber nodes proceeds.

Note

- If you need to add one or more subscribers as specified for the publisher node, you can add them while you generate the `platformconfig.xml` file. You have to specify the publisher node and the subscriber nodes. If the **Dynamic Cluster Config Timer** timer is still active, subscribers get automatically added to the publisher and the installation of the subscriber nodes continues.
- This feature has no limitation on predefining the number of subscriber nodes that you need to add to a publisher node.

Use the WinImage tool to create the disk images. Mount the ISO images through VMware ESXi.

Before You Begin

Place the floppy image at datastore from where it is accessible to virtual machine for mounting.

Procedure

Step 1 Start the virtual machine to start the cluster installation.

Step 2 From the **VM** menu, choose **Edit settings** to mount the floppy image that you have created from the Answer File Generator tool.
The **Virtual Machine Properties** dialog box appears.

Step 3 From the available hardware list, select **Floppy drive 1**.

Step 4 In the **Device Type** section, select **Use the existing floppy image in the database**, and then click **Browse** to navigate to the floppy image.

Step 5 Click **OK**.
The floppy image is attached.

Step 6 Select the **CD/DVD Drive 1** > **Connect to ISO image on local disk** option from the toolbar and choose **CD/DVD Drive1** > **Connect to ISO image on a datastore**, navigate to the data store to select the installer ISO image, and click **OK**.
The ISO image is attached and the installation starts.

Step 7 (Optional) If you want to test the media before the installation, click **OK** in the **Disc Found** message box, or click **Skip** to skip testing the media before the installation.
The installation proceeds without any manual intervention. The publisher is installed and the subscribers are added to the publisher.

IM and Presence Service Integration

This feature supports heterogeneous cluster-wide installation that includes Cisco Unified Communications Manager and IM and Presence Service nodes. The concept and installation process for IM and Presence Service is same as the installation process for Cisco Unified Communications Manager in a cluster.

From the AFG tool, check the **Dynamic Cluster Config Timer** check box, select IM and Presence Service, and enter the details for Cisco Unified Communications Manager publisher node, IM and Presence Service publisher node, and IM and Presence Service subscriber details (if any). Then, AFG tool generates the `clusterConfig.xml` file along with `platformConfig.xml` file for each node. You can use this `clusterConfig.xml` file only with Cisco Unified Communications Manager publisher node along with `platformConfig.xml` file that is generated for this node. For all other nodes, only `platformConfig.xml` file is used.

Answer File Generator (AFG) saves the domain name of IM and Presence Service publisher in the `clusterConfig.xml` file along with the existing details.

The integration of Cisco Unified Communications Manager with IM and Presence includes the following tasks:

- The IM and Presence Service publisher is added to the processnode table with domain name after the installation of Cisco Unified Communications Manager.
- Cisco Unified Communications Manager and IM and Presence Service nodes are added to the processnode table using the IP address, if available.
- When you add the IM and Presence Service publisher through CLI, the domain is added.

Install Software

Use the procedures in this section to begin the software installation.

Start Basic Installation

To start the installation, follow this procedure.

Note If you are installing a subscriber node or adding a node to an existing cluster, you must configure the hostname or IP address of the new node on the publisher node in the cluster. From Cisco Unified CM Administration on the publisher node, choose **System** > **Server** and enter the IP address or hostname of the subscriber node. For more information, see the *Cisco Unified Communications Manager Administration Guide*.

Procedure

Step 1 If you are using a configuration file created by the Answer File Generator, ensure that the file is accessible to the system:

- insert the USB key with the configuration information now

- place the virtual floppy image in a location where the virtual machine can access it

Note If you have a new server with the software pre-installed, you do not need to install from a DVD or ISO file, unless you want to re-image the server with a later product release. Go directly to the configure basic installation procedure to enter the configuration information; see the Related Topics below for more information.

Step 2 Perform one of the following actions:

- If you are installing from a DVD drive a VMware ESXi server host, insert the installation DVD into the tray and restart the server, so that it boots from the DVD.
- If you are installing from a data store ISO file located on the local ESXi host or on a storage area network (SAN), edit the CD/DVD drive on the virtual machine to select the data store ISO file. Select the option to connect at power on, and restart the virtual machine. If you configured the virtual machine to use the ISO at the same time that you created the virtual machine using the OVA file, skip this step and complete the rest of the procedure.

After the server completes the boot sequence, the **DVD Found** window displays.

Step 3 To perform the media check, choose **Yes** or, to skip the media check, choose **No.**
The media check checks the integrity of the DVD. If your DVD passed the media check previously, you might choose to skip the media check.

Step 4 If you choose **Yes** to perform the media check, the **Media Check Result** window displays. Perform these tasks:

a) If the **Media Check Result** displays **Pass**, choose **OK** to continue the installation.
b) If the media fails the Media Check, either download another copy from Cisco.com or obtain another DVD directly from Cisco.

Step 5 In the **Product Deployment Selection** window, specify the product to install:

- If you are installing the IM and Presence Service, select **OK**.
- If you are installing a Cisco Unified Communications Manager application, select the product to install and choose **OK**. You can choose from the following options:
  - Cisco Unified Communications Manager
  - Cisco Unity Connection
  - Cisco Prime License Manager

Note The window indicates which products are supported and not supported by your hardware. If only one product is supported, you do not choose which product to install.

Note Cisco Prime License Manager is installed co-resident automatically as part of this installation. Following the installation, Cisco Prime License Manager can be used to provide simplified, enterprise-wide management of user-based licensing, including license fulfillment. Cisco Prime License Manager handles licensing fulfillment, supports allocation and reconciliation of licenses across supported products, and provides enterprise level reporting of usage and entitlement. For more information, see the *Cisco Prime License Manager User Guide*.

Step 6 If software is currently installed on the server, the **Overwrite Hard Drive** window opens and displays the current software version on your hard drive and the version on the DVD or ISO file. Choose **Yes** to continue with the installation or **No** to cancel.

Caution If you choose **Yes** on the **Overwrite Hard Drive** window, all existing data on your hard drive gets overwritten and destroyed.

The **Platform Installation Wizard** window displays.

Step 7 Choose one of the following options:

- To enter your configuration information manually and have the installation program install the configured software on the server, choose **Proceed** and continue with this procedure.
- To do any of the following tasks, choose **Skip** and perform the configure basic installation procedure to enter the configuration information.

  — Manually configure the software that is pre-installed on your server – In this case you do not need to install the software, but you must configure the pre-installed software.

  — Perform an unattended installation – In this case, you provide preexisting configuration information on a USB key or floppy disk.

  — Install the software before manually configuring it – In this case the installation program installs the software, then prompts you to configure it manually. You can choose **Skip** if you want to pre-install the application on all your servers first and then enter the configuration information at a later time. This method might cause you to spend more time performing the installation than the other methods.

Step 8 In the **Apply Additional Release** window, choose one of the following installation types:

- To upgrade to a later Service Release of the software during installation, choose **Yes**. Continue to perform the procedure to apply a patch.
- To skip this step or to install IM and Presence nodes, choose **No.**
- To return to the previous window, choose **Back.**

Step 9 In the **Basic Install** window, choose **Continue** to install the software or configure the pre-installed software. Perform the configure basic installation procedure to configure the basic installation.

Related Topics

Enter Preexisting Configuration Information , on page 43
Configure Basic Installation, on page 48

Enter Preexisting Configuration Information

Follow this procedure if you have a server that has the product pre-installed, or if you installed the product earlier but chose **Skip** in the Platform Installation Wizard window to configure the server at a later time.

Procedure

Step 1 After the system restarts, the **Preexisting Installation Configuration** window displays.

Step 2 If you have preexisting configuration information that the Answer File Generator created, that is stored on a USB key, insert the USB key now and choose **Continue**. The installation wizard will read the configuration information during the installation process.

Note If a popup window states that the system detected new hardware, press any key and then choose **Install** from the next window.

The **Platform Installation Wizard** window displays.

Step 3 To continue with the **Platform Installation Wizard**, choose **Proceed**.

Step 4 In the **Apply Additional Release** window, choose one of the following installation types:

- To upgrade to a later Service Release of the software during installation, choose **Yes**. Continue to perform the procedure to apply a patch.
- To skip this step, choose **No.**
- To return to the previous window, choose **Back.**

Step 5 In the **Basic Install** window, choose **Continue**. Perform the configure basic installation procedure to configure the basic installation.

Related Topics

Start Basic Installation, on page 41
Configure Basic Installation, on page 48

Apply a Patch to Upgrade During Installation

This option is available when you install Unified Communications Manager nodes. It is not available for IM and Presence nodes.

If you choose **Yes** in the Apply a Patch window, the installation wizard installs the software version that is on the DVD or ISO image first, and then restarts the system. You must obtain the appropriate upgrade file from Cisco.com before you can upgrade during installation.

Note You can upgrade to any supported higher release, so long as you have a full patch, not an ES or an SR, in which case you can only upgrade to a later service release within the same maintenance release.

For information about supported upgrades, see the Release Notes for your product release and the Cisco Unified Communications Manager Compatibility Matrix at http://www.cisco.com/en/US/products/sw/voicesw/ps556/products_device_support_tables_list.html.

You can access the upgrade file during the installation process from an ISO image on a data store, a local disk (DVD), or from a remote FTP or SFTP server.

Procedure

Step 1 The **Install Upgrade Retrieval Mechanism Configuration** window displays.

Step 2 Choose the upgrade retrieval mechanism to use to retrieve the upgrade file:

- SFTP - Retrieves the upgrade file from a remote server by using the Secure File Transfer Protocol (SFTP). Skip to the procedure to upgrade from a remote server..

- FTP - Retrieves the upgrade file from a remote server by using File Transfer Protocol (FTP). Skip to the procedure to upgrade from a remote server.
- LOCAL - Retrieves the upgrade file from a local DVD or from an ISO image on a data store. Continue with the procedure to upgrade from a local disk.

Related Topics

Upgrade From a Remote Server, on page 46
Upgrade From a Local Source, on page 45

Upgrade From a Local Source

Before you can upgrade from a local source, you must download the appropriate patch file from Cisco.com. You must create an ISO image from the upgrade file and then either place it on a DVD or in the DVD drive of a virtual machine.

Procedure

Step 1 When the **Local Patch Configuration** window displays, enter the patch directory and patch name, if required, and choose **OK.**
The **Install Upgrade Patch Selection Validation** window displays.

Step 2 The window displays the patch file. To update the system with this patch, choose **Continue**.

Step 3 Choose the upgrade patch to install. The system installs the patch, then restarts the system with the upgraded software version running.
After the system restarts, the **Preexisting Configuration Information** window displays.

Step 4 To continue the installation, choose **Proceed.**
The **Platform Installation Wizard** window displays.

Step 5 To continue the installation, choose **Proceed** or choose **Cancel** to stop the installation.
If you choose **Proceed**, the **Apply Patch** window displays. Continue with the next step.

If you choose **Cancel**, the system halts, and you can safely power down the server.

Step 6 When the **Apply Patch** window displays, choose **No.**

Step 7 The **Windows Upgrade** window displays.

Step 8 Choose **No** and perform the procedure to configure the basic installation.

Related Topics

Configure Basic Installation, on page 48

Upgrade From a Remote Server

Use this procedure to upgrade Unified Communications Manager nodes from a remote server. This option is not available for IM and Presence nodes.

Before you can upgrade Unified Communications Manager from a remote server, you must download the appropriate patch file from Cisco.com to an FTP or SFTP server that the server can access.

Cisco allows you to use any SFTP server product but recommends SFTP products that have been certified with Cisco through the Cisco Technology Developer Partner program (CTDP). CTDP partners, such as GlobalSCAPE, certify their products with specified version of Cisco Unified Communications Manager. For information on which vendors have certified their products with your version of Cisco Unified Communications Manager, refer to http://www.cisco.com/pcgi-bin/ctdp/Search.pl. For information on using GlobalSCAPE with supported Cisco Unified Communications versions, refer to http://www.globalscape.com/gsftps/cisco.aspx.Cisco uses the following servers for internal testing. You may use one of the servers, but you must contact the vendor for support:

- Open SSH (for Unix systems. Refer to http://sshwindows.sourceforge.net/)
- Cygwin (http://www.cygwin.com/)
- Titan (http://www.titanftp.com/)

Note For issues with third-party products that have not been certified through the CTDP process, contact the third-party vendor for support.

If you chose to upgrade through an FTP or SFTP connection to a remote server, you must first configure network settings so that the server can connect to the network.

Procedure

Step 1 Configure the auto negotiation setting.

- To enable automatic negotiation, choose **Yes**. This option sets the speed and duplex settings of the Ethernet network interface card (NIC) by using automatic negotiation. The **MTU Configuration** window displays. Skip the next step then continue.
  Note To use this option, your hub or Ethernet switch must support automatic negotiation.
- To disable automatic negotiation, choose **No**. The NIC Speed and Duplex Configuration window displays. Continue with the next step.

Step 2 If you chose to disable automatic negotiation, manually choose the appropriate NIC speed and duplex settings now and choose **OK** to continue.
The **MTU Configuration** window displays.

Step 3 In the **MTU Configuration** window, you can change the MTU size from the operating system default. The maximum transmission unit (MTU) represents the largest packet, in bytes, that this host will transmit on the network. If you are unsure of the MTU setting for your network, use the default value.

Caution If you configure the MTU size incorrectly, your network performance can be affected.

- To accept the default value (1500 bytes), choose **No.**
- To change the MTU size from the operating system default, choose Yes, enter the new MTU size, and choose **OK.**

The **DHCP Configuration** window displays.

Step 4 For network configuration, you can choose to either set up static network IP addresses for the node and gateway or to use Dynamic Host Configuration Protocol (DHCP). Static IP addresses are recommended. If you use DHCP, use static DHCP.

- If you have a DHCP server that is configured in your network and want to use DHCP, choose **Yes**. The installation process attempts to verify network connectivity.
- If you want to configure static IP addresses for the node, choose **No**. The Static Network Configuration window displays.

Step 5 If you chose not to use DHCP, enter your static network configuration values and choose **OK**.
The **DNS Client Configuration** window displays.

Step 6 To enable DNS, choose **Yes**, enter your DNS client information, and choose **OK**.
After the system configures the network and checks for connectivity, the Remote Patch Configuration window displays.

Step 7 Enter the location and login information for the remote file server. The system connects to the remote server and retrieves a list of available upgrade patches.
If the upgrade file is located on a Linux or Unix server, you must enter a forward slash at the beginning of the directory path. For example, if the upgrade file is in the patches directory, you must enter /patches

If the upgrade file is located on a Windows server, remember that you are connecting to an FTP or SFTP server, so use the appropriate syntax, including:

- Begin the path with a forward slash (/) and use forward slashes throughout the path.
- The path must start from the FTP or SFTP root directory on the server, so you cannot enter a Windows absolute path, which starts with a drive letter (for example, C:).

The **Install Upgrade Patch Selection** window displays.

Step 8 Choose the upgrade patch to install. The system downloads, unpacks, and installs the patch and then restarts the system with the upgraded software version running.
After the system restarts, the **Preexisting Configuration Information** window displays.

Step 9 To continue the installation, choose **Proceed.**
The **Platform Installation Wizard** window displays.

Step 10 To continue the installation, choose **Proceed** or choose **Cancel** to stop the installation.
If you choose **Proceed**, the **Apply Patch** window displays. Continue with the next step.

If you choose **Cancel**, the system halts, and you can safely power down the server.

Step 11 In the **Apply Patch** window displays, choose **No.**
The **Windows Upgrade** window displays

Step 12 Choose **No** and perform the configure basic installation procedure to configure the basic installation.

Related Topics

Configure Basic Installation, on page 48

Configure Installation

Use the procedures in this section to configure the servers and complete the installation.

Configure Basic Installation

Procedure

Step 1 In the **Timezone Configuration** window, choose the appropriate time zone for the server and then choose **OK**.
The **Auto Negotiation Configuration** window displays.

Step 2 The installation process allows you to automatically set the speed and duplex settings of the Ethernet network interface card (NIC) by using automatic negotiation. You can change this setting after installation.

- To enable automatic negotiation, choose **Yes**.

  The **MTU Configuration window** displays.

  Note To use this option, your hub or Ethernet switch must support automatic negotiation.

- To disable automatic negotiation, choose **No** and continue with the next step.

  The **NIC Speed and Duplex Configuration** window displays.

Step 3 If you chose to disable automatic negotiation, manually choose the appropriate NIC speed and duplex settings now and choose **OK** to continue.
The **MTU Configuration** window displays.

Step 4 In the **MTU Configuration** window, you can change the MTU size from the operating system default. The maximum transmission unit (MTU) represents the largest packet, in bytes, that this host will transmit on the network. If you are unsure of the MTU setting for your network, use the default value, which is 1500 bytes.

Caution If you configure the MTU size incorrectly, your network performance can be affected.

- To accept the default value (1500 bytes), choose **No.**
- To change the MTU size from the operating system default, choose Yes, enter the new MTU size, and choose **OK.**

The **DHCP Configuration** window displays.

Step 5 For network configuration, you can choose to either set up a static network IP address for the node or to use Dynamic Host Configuration Protocol (DHCP). Static IP addresses are recommended. If you use DHCP, use static DHCP.

- If you have a DHCP server that is configured in your network and want to use DHCP, choose **Yes**. The network restarts, and the **Administrator Login Configuration** window displays.
- If you want to configure a static IP address for the node, choose **No**. The Static Network Configuration window displays.

Step 6 If you chose not to use DHCP, enter your static network configuration values and choose **OK**.
The **DNS Client Configuration** window displays.

Step 7 To enable DNS, choose **Yes**, enter your DNS client information, and choose **OK**.
The network restarts by using the new configuration information, and the **Administrator Login Configuration** window displays.

Step 8 Enter your Administrator login and password.

Note The Administrator login must start with an alphabetic character, be at least six characters long, and can contain alphanumeric characters, hyphens, and underscores. You will need the Administrator login to log in to Cisco Unified Communications Operating System Administration, the command line interface, and the Disaster Recovery System.

The **Certificate Information** window displays.

Step 9 Enter your certificate signing request information and choose **OK.**
The **First Node Configuration** window displays.

Step 10 You can configure this server as either the publisher node in a Cisco Unified Communications Manager cluster or as a subscriber node.

- To configure this server as the first Cisco Unified Communications Manager node, choose **Yes** and continue with the procedure to set up the Cisco Unified Communications Manager publisher node.
- To configure this server as a subscriber node in the cluster, choose **No** and continue with the procedure to set up a subscriber node.
- To configure this server as a IM and Presence node, choose **No** and continue with the procedure to set up a subscriber node.

Related Topics

Set Up Cisco Cisco Unified Communications Manager Publisher Node, on page 49
Set Up Subscriber Node, on page 52

Set Up Cisco Cisco Unified Communications Manager Publisher Node

Follow this procedure to configure the first server where you install Cisco Unified Communications Manager software as the publisher node for the cluster. Perform this procedure after you have completed the basic installation and configured the basic installation.

Note You can configure Smart Call Home on the publisher node only. For more information on Smart Call Home, refer to Smart call home section in the Cisco Unified Serviceability Administration Guide.

Procedure

Step 1 The **Network Time Protocol Client Configuration** window appears.
Cisco recommends that you use an external NTP server to ensure accurate system time on the publisher node. Subscriber nodes in the cluster will get their time from the first node.

Step 2 Choose whether you want to configure an external NTP server or manually configure the system time.

- To set up an external NTP server, choose Yes and enter the IP address, NTP server name, or NTP server pool name for at least one NTP server. You can configure up to five NTP servers, and Cisco recommends that you use at least three. Choose Proceed to continue with the installation.

  The system contacts an NTP server and automatically sets the time on the hardware clock.

  Note If the **Test** button appears, you can choose Test to check whether the NTP servers are accessible.

- To manually configure the system time, choose **No** and enter the appropriate date and time to set the hardware clock. Choose **OK** to continue with the installation.

The **Database Access Security Configuration** window appears.

Step 3 Enter the Security password from Required Installation Information.

Note The Security password must start with an alphanumeric character, be at least six characters long, and can contain alphanumeric characters, hyphens, and underscores. The system uses this password to authorize communications between nodes, and you must ensure this password is identical on all nodes in the cluster.

The **SMTP Host Configuration** window appears.

Step 4 If you want to configure an SMTP server, choose **Yes** and enter the SMTP server name. If you do not want to configure the SMTP server, choose **No**, which redirects to Smart Call Home page. To go to previous page, choose **Back** and to see the information about the SMTP configuration, choose **Help**.

Note You must configure an SMTP server to use certain platform features; however, you can also configure an SMTP server later by using the platform GUI or the command line interface.

Step 5 Choose **OK**. The **Smart Call Home Enable** window appears.

Step 6 On the Smart Call Home Enable Page, perform one of the following.

a) Select **Enable Smart Call Home on System Start** to enable the Call Home, and then click **OK**. The Smart Call Home Configuration window appears.

1 Select the method for sending data to the Cisco Technical Assistance Center.

- Secure Web (HTTPS)
- Secure Web (HTTPS) through Proxy

  Enter the Hostname/IP Address and port number for Proxy

  - Hostname/IP Address—Enter the IP address or the hostname of the proxy server to send the Call Home messages through an indirect network connection.
  - Port—Enter the port number on which the proxy server is enabled.

- Email

  Note You must have configured the SMTP for Email to be sent successfully.

2 To send a copy of the Call Home messages to multiple email recipients, enter the email addresses separated with a comma. You can enter up to a maximum of 1024 characters.

3 Enter the email address of the customer in the Customer Contact Details field.

4 Click **Continue** to proceed, or select **Back** to return to the previous menu. If you click **Continue**, a message appears as `Cisco Call Home includes reporting capabilities that allow Cisco to receive diagnostic and system information from your Cisco Unified Communications Manager cluster. Cisco may use this information for proactive debugging, product development or marketing purposes. To learn more about this feature, please visit: http://www.cisco.com/en/US/products/ps7334/serv_home.html.`

Note If you select **Secure Web (HTTPS) through Proxy** and click **Continue**, Smart Call Home Proxy Configuration Page appears.

5 Click **Confirm** to proceeds with normal installation or select **Back** to return to the Smart Call Home Enable Page.

b) Select **Enable Anonymous Call Home on System Start** to enable the Anonymous Call Home, and then click **OK**. The Anonymous Call Home Configuration window appears.

1 Select the method for sending data to the Cisco Technical Assistance Center.

- Secure Web (HTTPS)
- Secure Web (HTTPS) through Proxy

  Enter the Hostname/IP Address and port number for Proxy

  - Hostname/IP Address—Enter the IP address or the hostname of the proxy server to send the Call Home messages through an indirect network connection.
  - Port—Enter the port number on which the proxy server is enabled.

- Email

  Note You must have configured the SMTP for Email to be sent successfully.

2 To send a copy of the Call Home messages to multiple email recipients, enter the email addresses separated with a comma. You can enter up to a maximum of 1024 characters.

3 Click **Continue** to proceed, or select **Back** to return to the previous menu. If you click **Continue**, a message appears as `To help improve the Cisco Unified Communications Manager experience, click Confirm to allow Cisco Systems to securely receive usage statistics from the server. This information will be used by Cisco to help understand how customers are using our product and ultimately drive product direction. If you prefer not to participate, you may choose to opt-out.`

Note If you select **Secure Web (HTTPS) through Proxy** and click **Continue**, Anonymous Call Home Proxy Configuration Page appears.

4 Click **Confirm** to proceeds with normal installation or select **Back** to return to the Smart Call Home Enable Page.

c) Select **Remind me Later to configure Smart Call Home** to configure the Smart Call Home service after installation, using Cisco Unified Serviceability pages.
A reminder message appears in Cisco Unified CM Administration.

```
Smart Call Home is not configured. To configure Smart Call Home or
disable the reminder, please go to Cisco Unified Serviceability > Call
Home.
```

d) Select **Disable All Call Home on System Start** to disable the Smart Call Home service. However, you can activate the Smart Call Home service after installation using Cisco Unified Serviceability pages.

Note You can reconfigure the service in Cisco Unified Serviceability page after installation. For more information, see the *Cisco Unified Serviceability Administration Guide*.

Step 7 Choose **OK**. The Application User Configuration window appears.

Step 8 Enter the Application User name and password from and confirm the password by entering it again.

Step 9 Choose **OK**. The Platform Configuration Confirmation window appears.

Step 10 To continue with the installation, choose **OK**; or to modify the platform configuration, choose **Back**.
The system installs and configures the software. The server reboots.

When the installation process completes, you are prompted to log in by using the Administrator account and password.

Related Topics

Access Cisco Unified CM Administration, on page 74

Set Up Subscriber Node

Use the following procedure to configure a subscriber node in the cluster.

Before You Begin

Before you configure subscriber nodes, you must associate each of the subscriber nodes in the cluster with its publisher node.

- For Unified Communications Manager subscriber nodes, associate each of the subscriber nodes in the cluster with the Unified Communications Manager publisher node using the Cisco Unified CM Administration interface.
- For IM and Presence subscriber nodes, associate each of the subscriber nodes in the cluster with the IM and Presence database publisher node.

For more information, see the *Cisco Unified Communications Manager Administration Guide*.

Procedure

Step 1 If you configured Network Time Protocol on the publisher node, ensure that it is synchronized with an NTP server before you install a subscriber node. From the Command Line Interface on the publisher node, enter utils ntp status. Ensure that the output indicates that the node is synchronized with an NTP server.

Note If the publisher node is not synchronized with an NTP server, installation of the subscriber node will fail.

Step 2 On the First Node Configuration window, read the Warning and make sure you have correctly configured the first node as the publisher node. To continue with the installation of the subscriber node, click **OK.**
The Network Connectivity Test Configuration window displays.

Step 3 During installation of a subscriber node, the system checks to ensure that the subscriber node can connect to the publisher node.

- To pause the installation after the system successfully verifies network connectivity, choose **Yes.**
- To continue the installation with a pause, choose **No.**

The First Node Access Configuration window displays.

Step 4 Enter the publisher node connectivity information and choose **OK.**
The system checks for network connectivity.

If you chose to pause the system after the system successfully verifies network connectivity, the Successful Connection to First Node window displays. Choose **Continue.**

Note If the network connectivity test fails, the system always stops and allows you to go back and reenter the parameter information.

The **SMTP Host Configuration** window displays.

Step 5 If you want to configure an SMTP server, choose **Yes** and enter the SMTP server name.

Note To use certain operating system features, you must configure an SMTP server; however, you can also configure an SMTP server later by using the operating system GUI or the command line interface.

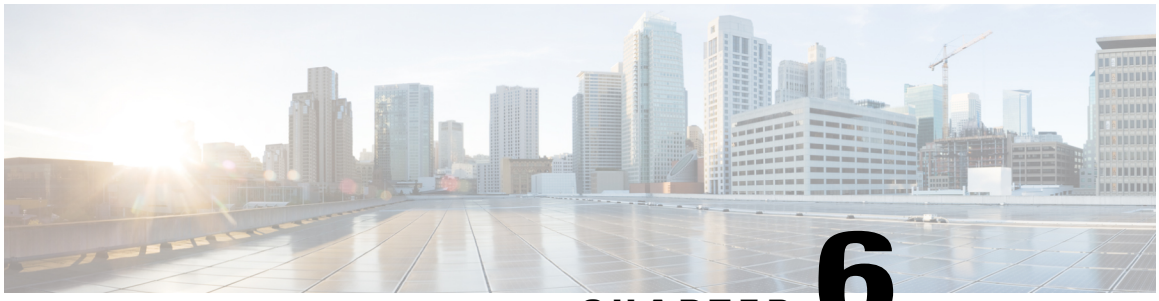
The Platform Configuration Confirmation window displays.

Step 6 To start installing the software, choose **OK**, or, if you want to change the configuration, choose **Back.**

Step 7 When the installation process completes, you get prompted to log in by using the Administrator account and password.

Related Topics

Access Cisco Unified CM Administration, on page 74
Access Cisco Unified CM IM and Presence Administration, on page 73



CHAPTER 6

Post-Installation Tasks for Cisco Unified Communications Manager

- Post-Installation Tasks for Cisco Unified Communications Manager, page 55
- COP Files, Dial Plans, and Locales, page 58

Post-Installation Tasks for Cisco Unified Communications Manager

After you install a Cisco Unified Communications Manager node, you must set some configuration parameters and perform other post-installation tasks before you can begin using it.

Procedure

Step 1 Log in as the Cisco Unified Communications Manager Application User and change the Application User passwords.

Step 2 Install Real Time Monitoring Tool.
You can use Real Time Monitoring Tool to monitor system health, and view and collect logs. For installation instructions and more information about Real Time Monitoring Tool, see the *Cisco Unified Real Time Monitoring Tool Administration Guide*.

Step 3 Configure the netdump utility, if you installed a cluster of servers.
The netdump utility allows you to send data and memory crash dump logs from one server on the network to another. For instructions for configuring the netdump utility, refer to the *Troubleshooting Guide*

Step 4 Install license files to the publisher node using the Enterprise License Manager application. For more information, see the *Enterprise License Manager User Guide*.

Step 5 Activate Cisco Unified Communications Manager feature services that you want to run.
Before you activate feature services, you must perform required preactivation tasks. For service activation requirements, refer to the *Cisco Unified Serviceability Administration Guide*.

Step 6 Configure the backup settings.
Refer to *Administration Guide for Cisco Unified Communications Manager* .

Step 7 Install new locales to the server if required. The locale English_United_States installs automatically on the server, and you can install other locales as needed.
Perform this task only after you have completed the installation for the entire cluster, and set up the database.
Refer to *Administration Guide for Cisco Unified Communications Manager*.

Step 8 Install COP enabler files for any custom device types that you want to use that do not ship with Cisco Unified Communications Manager.
Perform this task only after you have completed the installation for the entire cluster, and set up the database.

Step 9 If applicable, configure any network management systems in use at your site.
Refer to the *Cisco Unified Serviceability Administration Guide*.

Step 10 If you want to set up a secure cluster, you can run your Cisco IP Telephony network in mixed mode.
For more information, see the *Cisco Unified Communications Manager Security Guide*.

Step 11 Configure the system.
For more information, refer to the *System Configuration Guide for Cisco Unified Communications Manager* .

Step 12 Install Cisco Unified Communications Manager IM and Presence Service.

Change Default Application User Passwords

The installation sets all Application User passwords to the same Application User password that you entered during installation. Cisco recommends that you log in to Cisco Unified CM Administration and change these passwords. Refer to *Cisco Unified Communications Manager Administration Guide* for the procedure for changing a password.

Cisco Unified Serviceability

To access Cisco Unified CM Administration or Cisco Unified Serviceability, you will need to use a web browser from a PC with network access to the Cisco Unified Communications Manager server.

Even though all services are installed on each server in the cluster, you must manually activate the services that you want to run on each server in the cluster through Cisco Unified Serviceability. For service recommendations and more information, see *Cisco Unified Serviceability Administration Guide*.

Services Activation

Even though all services are installed on the server, you may need to use Cisco Unified Serviceability to manually activate services that you want to run. For service recommendations and more information, see *Cisco Unified Serviceability Administration Guide*.

Apply Security

Use the following procedure to apply security to a new node in a secure cluster after you have successfully added the node.

Note For more information, refer to the *Cisco Unified Communications Manager Security Guide*.

Procedure

Step 1 Activate the Cisco CTL Provider service on the new node.

Step 2 Use an etoken from the existing CTL file and run the CTL client again to get the certificates from all the servers in the cluster, including the new server, into the CTL file. You must be running the Cisco CTL Provider on all servers in the cluster to generate the certificates and update the CTL file.

Step 3 Restart the Cisco TFTP service on all TFTP servers.

Step 4 Restart the Cisco CallManager service on all the nodes.

Step 5 Reset all devices to distribute the new CTL file to the devices.

Install Licenses

See the *Cisco Prime License Manager User Guide* for information about generating and installing licenses for Cisco Unified Communications Manager.

Set Up Database

After installing Cisco Unified Communications Manager, you use Cisco Unified CM Administration to begin configuring the database. The Cisco Unified Communications Manager database contains information and parameters that relate to the system as a whole, to connected devices, and to individual users. The following list describes a few tasks that you must perform in Cisco Unified CM Administration or Cisco Unified Serviceability:

1. In Cisco Unified Serviceability, activate the services that you want to run on each server in the cluster.
2. Configure system-level settings, such as Cisco Unified Communications Manager Groups.
3. Design and configure your dialing plan.
4. Configure media resources for conferences, music on hold, and so on.
5. Configure systemwide features, Cisco Unified IP Phone services, Cisco Unified Communications Manager Extension Mobility, Cisco Unified Communications Manager Attendant Console, and Cisco Unified Communications Manager Assistant.
6. Install and configure the gateways.
7. Enable computer telephony integration (CTI) application support; then, install and configure the desired CTI applications.
8. Configure the users.
9. Configure and install the phones; then, associate users with the phones.

For more information about configuring the Cisco Unified Communications Manager database, see *Administration Guide for Cisco Unified Communications Manager* , System Configuration Guide for Cisco Unified Communications Manager , or online help in the Cisco Unified Communications Manager application.

COP Files, Dial Plans, and Locales

This section contains information about COP files, dial plans, and locales.

COP File Installation

The following guidelines apply to installing COP files. If the documentation for a specific COP file contradicts these general guidelines, follow the COP file documentation:

- Install the appropriate COP file on every node in a cluster. Perform this task before you install new software on each node in the cluster and set up the database.
- After you install a COP file, you must restart the node.
- Restart Cisco Unified Communications Manager to ensure that configuration changes that are made during the COP file installation get written into the database.
- Restart the IM and Presence Service to ensure that configuration changes that are made during the COP file installation get written into the database.

Dial Plan Installation

You can install dial plan files from either a local or a remote source by using the same process for installing software upgrades. See the *Upgrade Guide for Cisco Unified Communications Manager* for more information about upgrading from a local or remote source.

After you install the dial plan files on the system, log in to Cisco Unified CM Administration and then navigate to **Call Routing** > **Dial Plan Installer** to complete installing the dial plans.

Locale Installation

You can configure Cisco Unified Communications Manager and IM and Presence Service to support multiple languages. There is no limit to the number of supported languages you can install.

Cisco provides locale-specific versions of the Cisco Unified Communications Manager Locale Installer and the IM and Presence Service Locale Installer on www.cisco.com. Installed by the system administrator, the locale installer allows the user to view/receive the chosen translated text or tones, if applicable, when a user works with supported interfaces.

For upgrades of Cisco Unified Communications Manager or the IM & Presence Service, you must install locales after you have completed all of your upgrades and migrations. For upgrades, you must reinstall any locales that you are using, with the exception of US-English, which is installed by default. Install the latest version of the locales that match the major.minor version number of your Cisco Unified Communications Manager node or IM and Presence Service node.

Install locales after you have installed Cisco Unified Communications Manager on every node in the cluster and have set up the database. If you want to install specific locales on IM and Presence Service nodes, you must first install the Cisco Unified Communications Manager locale file for the same country on the Cisco Unified Communications Manager cluster.

Use the information in the following sections to install locales on Cisco Unified Communications Manager nodes and on IM and Presence Service nodes after you complete the software upgrade.

User Locales

User locale files contain language information for a specific language and country. They provide translated text and voice prompts, if available, for phone displays, user applications, and user web pages in the locale that the user chooses. These files use the following naming convention:

- `cm-locale-language-country-version.cop` (Cisco Unified Communications Manager)
- `ps- locale-language_country-version.cop` (IM and Presence Service)

Network Locales

Network locale files provide country-specific files for various network items, including phone tones, annunciators, and gateway tones. The combined network locale file uses the following naming convention:

- `cm-locale-combinednetworklocale-version.cop` (Cisco Unified Communications Manager)

Cisco may combine multiple network locales in a single locale installer.

You can install locale files from either a local or a remote source by using the same process for installing software upgrades. You can install more than one locale file on each node in the cluster. Changes do not take effect until you reboot every node in the cluster. Cisco strongly recommends that you do not reboot the nodes until you have installed all locales on all nodes in the cluster. Minimize call-processing interruptions by rebooting the nodes after regular business hours.

Locale Files

Install locales after you have installed Cisco Unified Communications Manager on every node in the cluster and have set up the database. If you want to install specific locales on IM and Presence Service nodes, you must first install the Cisco Unified Communications Manager locale file for the same country on the Cisco Unified Communications Manager cluster.

You can install more than one locale file on each node in the cluster. To activate the new locale, you must restart each node in the cluster after installation.

When you install locales on a node, install the following files:

- User Locale files—These files contain language information for a specific language and country and use the following convention:

  `cm-locale-language-country-version.cop` (Cisco Unified Communications Manager)

  `ps-locale-language_country-version.cop` (IM and Presence Service)

- Combined Network Locale file—Contains country-specific files for all countries for various network items, including phone tones, annunciators, and gateway tones. The combined network locale file uses the following naming convention:

`cm- locale-combinednetworklocale-version.cop` (Cisco Unified Communications Manager)

Install New Locales

Use this procedure to install a new locale on Cisco Unified Communications Manager or IM and Presence Service. If you are installing a locale for both products, install the locale on all cluster nodes in the following order:

1. Cisco Unified Communications Manager publisher node
2. Cisco Unified Communications Manager subscriber nodes
3. IM and Presence database publisher node
4. IM and Presence subscriber nodes

Before You Begin

Make sure that you have completed your installation or upgrade of Cisco Unified Communications Manager or IM and Presence Service on all cluster nodes before you attempt to install a new locale.

Procedure

Step 1 Find the locale installer for your release on cisco.com:

- For Cisco Unified Communications Manager, go to https://software.cisco.com/download/navigator.html?mdfid=268439621&i=rm
- For IM and Presence Service, go to https://software.cisco.com/download/navigator.html?mdfid=280448682&i=rm

Step 2 Download your release's locale installer to a server that supports SFTP.

Step 3 Log in to Cisco Unified OS Administration using the administrator account.

Step 4 Choose **Software Upgrades** > **Install/Upgrade**.

Step 5 Complete the following fields in the **Software Installation/Upgrade** window:

- For the **Source**, choose **Remote file System**.
- From the **Directory**, enter the path to the directory where you saved the locale installer.
- From the **Server** field, enter the server name for the remote file system.
- Enter the credentials for the remote file system.

- From the **Transfer Protocol** drop-down list, choose **SFTP**. You must use SFTP for the transfer protocol.

Step 6 Click **Next**.

Step 7 Download and install the locale on the server.

Step 8 Restart the server. The updates take effect after the server restarts

Step 9 Repeat this procedure on all Cisco Unified Communications Manager and IM and Presence Service cluster nodes in the prescribed order.

Note Do not reset user locales for your end users until the new locale is installed on all cluster nodes. If you are installing the locale for both Cisco Unified Communications Manager and IM and Presence Service, you must install the locale for both products before you reset user locales. If you run into any issues, such as could occur if an end user resets a phone language before the locale installation is complete for IM and Presence Service, have your users reset their phone language in the Self-Care Portal to English. After the locale installation is complete, users can reset their phone language, or you use Bulk Administration to synchronize locales to the appropriate language by bulk.

What to Do Next

After the locale installation is complete for all cluster nodes, your end users can begin using the new user locale.

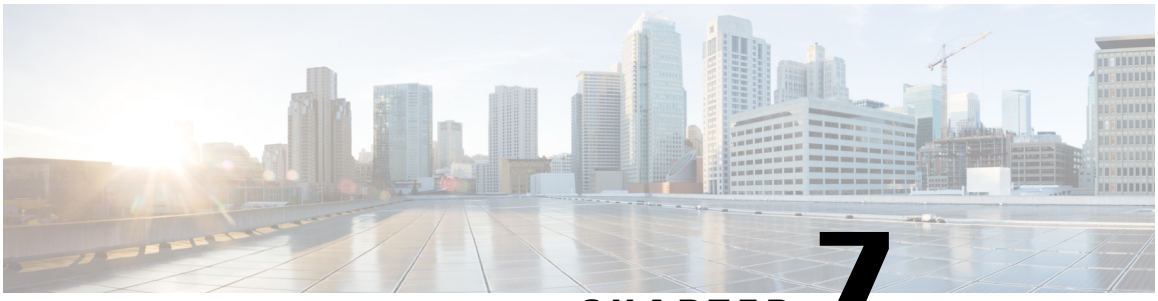
Error Messages

See the following table for a description of the messages that can occur during Locale Installer activation. If an error occurs, you can view the messages in the installation log.

Table 6: Locale Installer Error Messages and Descriptions

Message	Description
[LOCALE] File not found: <language>_<country>_user_locale.csv, the user locale has not been added to the database.	This error occurs when the system cannot locate the CSV file, which contains user locale information to add to the database. This indicates an error with the build process.
[LOCALE] File not found: <country>_network_locale.csv, the network locale has not been added to the database.	This error occurs when the system cannot locate the CSV file, which contains network locale information to add to the database This indicates an error with the build process.

Message	Description
[LOCALE] Communications Manager CSV file installer installdb is not present or not executable	This error occurs because a Cisco Unified Communications Manager application called installdb must be present; it reads information that is contained in a CSV file and applies it correctly to the Cisco Unified Communications Manager database. If this application is not found, it either was not installed with Cisco Unified Communications Manager (very unlikely), has been deleted (more likely), or the node does not have Cisco Unified Communications Manager installed (most likely). Installation of the locale will terminate because locales will not work without the correct records that are held in the database.
[LOCALE] Could not create /usr/local/cm/application_locale /cmservices/ipma/com/cisco/ipma /client/locales/maDialogs_<ll>_<CC>.properties.Checksum. [LOCALE] Could not create /usr/local/cm/application_locale/cmservices/ipma/com/cisco/ipma/client/locales/maMessages_<ll>_<CC>.properties.Checksum. [LOCALE] Could not create /usr/local/cm/ application_locale/cmservices/ipma/com/cisco/ ipma/client/locales/maGlobalUI_<ll>_<CC>.properties.Checksum. [LOCALE] Could not create /usr/local/cm/ application_locale/cmservices/ipma/ LocaleMasterVersion.txt.Checksum.	These errors could occur when the system fails to create a checksum file; causes can include an absent Java executable, `/usr/local/thirdparty/java/j2sdk/jre/bin/java`, an absent or damaged Java archive file, /usr/local/cm/jar/cmutil.jar, or an absent or damaged Java class, com.cisco.ccm.util.Zipper. Even if these errors occur, the locale will continue to work correctly, with the exception of Cisco Unified Communications Manager Assistant, which cannot detect a change in localized Cisco Unified Communications Manager Assistant files.
[LOCALE] Could not find /usr/local/cm/application_locale/cmservices/ipma/LocaleMaster Version.txt in order to update Unified CM Assistant locale information.	This error occurs when the file does not get found in the correct location, which is most likely due to an error in the build process.
[LOCALE] Addition of <RPM-file-name> to the Cisco Unified Communications Manager database has failed!	This error occurs because of the collective result of any failure that occurs when a locale is being installed; it indicates a terminal condition.



CHAPTER 7

Post-Installation Tasks for IM and Presence Service

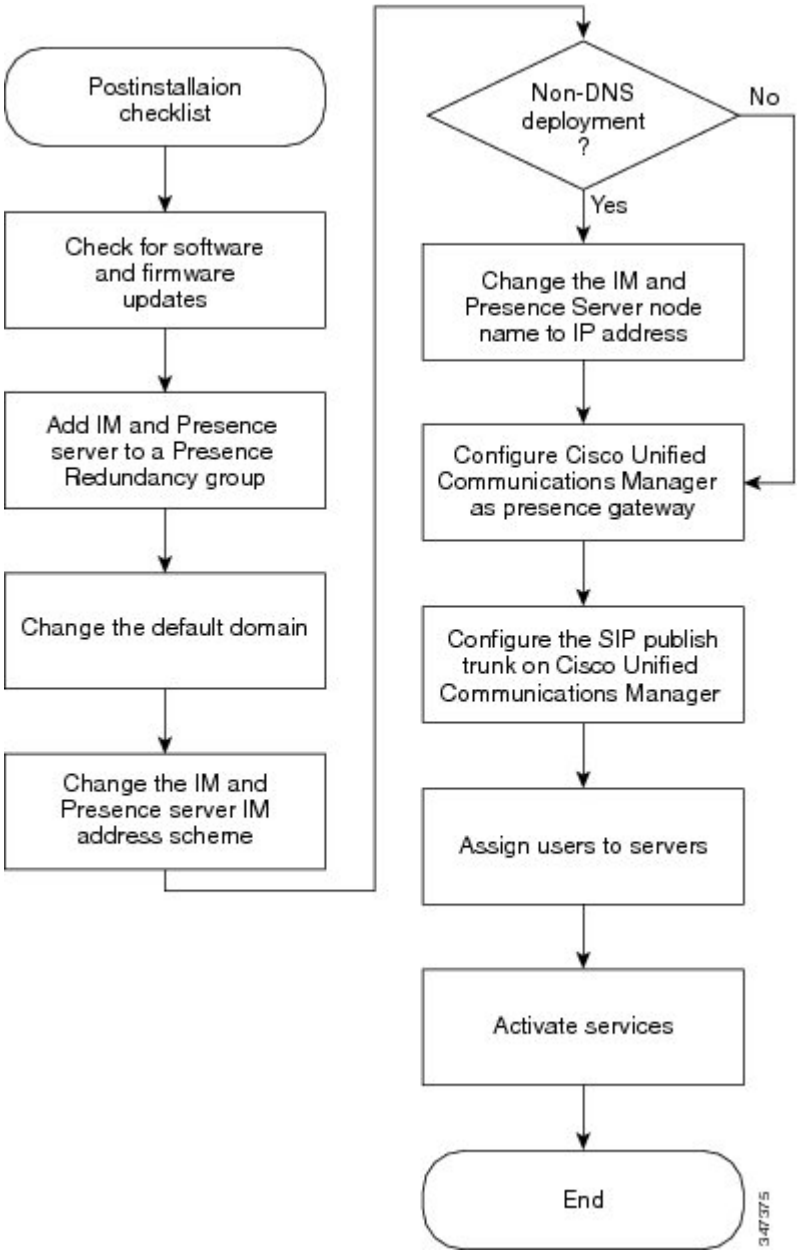
This chapter provides information about the following topics:

- Perform Post-Installation Tasks, page 64
- Presence Redundancy Groups and High Availability, page 66
- Change Default Domain Name, page 67
- IM Address Scheme, page 67
- Change of IM and Presence node name to resolvable value, page 69
- Configure Cisco Unified Communications Manager as Presence Gateway, page 69
- Configure SIP Trunk on Cisco Unified Communications Manager, page 70
- User and Server Assignments, page 70
- Activate services, page 70

Perform Post-Installation Tasks

Complete the following tasks, in sequence, on each server that you install in an IM and Presence Service cluster.

Figure 1: Post-Installation Flowchart



Procedure

Step 1 Check for software and firmware updates for IM and Presence Service on Cisco.com.

Step 2 Add the IM and Presence Service server to a presence redundancy group.

Step 3 Change the default domain name.

Note For non-DNS deployments, this step is mandatory. For DNS deployments, this step is optional.

Step 4 (Optional) Change the IM and Presence Service IM address scheme.

Step 5 (Optional) Change the IM and Presence Service node name.

Step 6 Configure Cisco Unified Communications Manager as a Presence Gateway.

Step 7 Configure a SIP Publish trunk on Cisco Unified Communications Manager.

Step 8 Assign users to servers.

Step 9 Activate services.

Caution Ensure that you complete this post-installation checklist on the IM and Presence Service database publisher node before you install IM and Presence Service subscriber nodes.

Software Updates

After you install IM and Presence, check to see if Cisco has released software updates, critical patches or Service Updates.

Check for software upgrades

Software upgrades contain fixes that were unavailable at the time of the original release. They often include service updates, security fixes, firmware updates, critical patches or other software fixes that can improve operation.

Complete the following procedure to check for software upgrades.

Procedure

Step 1 Browse to www.cisco.com.

Step 2 Select **Support** > **Download Software**.

Step 3 Navigate to **Products** > **Voice and Unified Communications** > **Unified Communications Applications** > **Cisco Unified Presence** > **Cisco Unified Presence Version** > **<the version for your deployment>**.

Step 4 If there are any software upgrades, follow the instructions to download the software.

What to Do Next

Configure the Cisco Unified Communications Manager as a Presence Gateway.

Related Topics

Configure Cisco Unified Communications Manager as Presence Gateway, on page 69

Presence Redundancy Groups and High Availability

A presence redundancy group is comprised of two IM and Presence Service nodes from the same cluster and provides both redundancy and recovery for IM and Presence Service clients and applications. Use **Cisco Unified CM Administration** to assign nodes to a presence redundancy group and to enable high availability.

- Failover - Occurs in a presence redundancy group when one or more critical services fails on an IM and Presence Service node in the group or a node in the group fails. Clients automatically connect to the other IM and Presence Service node in that group.
- Fallback - Occurs when a fallback command is issued from the Command Line Interface (CLI) or Cisco Unified Communications Manager during either of these conditions:
  - The failed IM and Presence Service node comes back into service and all critical services are running. The failed over clients in that group reconnect with the recovered node when it becomes available.
  - The backup activated IM and Presence Service node fails due to a critical service failure, and the peer node is in the Failed Over state and supports the automatic recovery fallback.

Automatic FallbackIM and Presence Service supports automatic fallback to the primary node after a failover. Automatic fallback is the process of moving users back to the primary node after a failover without manual intervention. You can enable automatic fallback with the Enable Automatic Fallback service parameter on the Cisco Unified CM IM and Presence Administration interface. Automatic fallback occurs in the following scenarios:

- A critical service on Node A fails—A critical service (for example, the Presence Engine) fails on Node A. Automatic failover occurs and all users are moved to Node B. Node A is in a state called “Failed Over with Critical Services Not Running”. When the critical service recovers, the node state changes to "Failed Over." When this occurs Node B tracks the health of Node A for 30 minutes. If no heartbeat is missed in this timeframe and the state of each node remains unchanged, automatic fallback occurs.
- Node A is rebooted—Automatic failover occurs and all users are moved to Node B. When Node A returns to a healthy state and remains in that state for 30 minutes automatic fallback will occur.
- Node A loses communications with Node B—Automatic failover occurs and all users are moved to Node B. When communications are re-established and remain unchanged for 30 minutes automatic fallback will occur.

If failover occurs for a reason other than one of the three scenarios listed here, you must recover the node manually. If you do not want to wait 30 minutes before the automatic fallback, you can perform a manual fallback to the primary node. For example: Using presence redundancy groups, Cisco Jabber clients will fail over to a backup IM and Presence Service node if the services or hardware fail on the local IM and Presence Service node. When the failed node comes online again, the clients automatically reconnect to the local IM and Presence Service node. When the failed node comes online, a manual fallback operation is required unless the automatic fallback option is set.

You can manually initiate a node failover, fallback, and recovery of IM and Presence Service nodes in the presence redundancy group. A manual fallback operation is required unless the automatic fallback option is set.

For instructions to set up presence redundancy groups and high availability, see *Cisco Unified Communications Manager Administration Guide*.

Change Default Domain Name

You are required to change the default domain name for non-DNS deployments. Changing the domain name is optional for DNS deployments.

If your IM and Presence Service deployment does not use DNS, the domain name for the IM and Presence Service node is set to DOMAIN.NOT.SET during installation. Cisco recommends that you change this value to the enterprise domain value after installation is complete.

You must stop the following services on all nodes in the cluster before you change the domain name, and then restart those services after the changes are made:

- Cisco Client Profile Agent
- Cisco Presence Engine
- Cisco SIP Proxy
- Cisco Sync Agent
- Cisco XCP Router

For information about how to change the default domain name, see the *Deployment Guide for IM and Presence Service on Cisco Unified Communications Manager*.

For information about using domain names with Cisco Unified Communications Manager and system managed components, see the *Cisco Unified Communications System Solution Reference Network Design (SRND)* guide for your release.

IM Address Scheme

You can select the scheme that the IM and Presence Service uses for IM addressing in the cluster. Use the Cisco Unified CM IM and Presence Administration GUI to set the IM address scheme. Two IM address schemes are available:

- *UserID@Default_Domain*
- Directory URI

Note The IM address scheme that you choose must be consistent across all IM and Presence Service clusters.

For more information about setting the IM address scheme for the IM and Presence Service cluster and Directory URI requirements, see the *Deployment Guide for IM and Presence Service on Cisco Unified Communications Manager*.

IM Address Using UserID@Default_Domain

The *UserID@Default_Domain* IM address scheme is the default option when you perform a fresh install or upgrade IM and Presence Service from an earlier version. To configure the default domain, choose **Cisco Unified CM IM and Presence Administration** > **Presence** > **Settings** > **Advanced Configuration**.

IM Address Using Directory URI

The Directory URI address scheme aligns a user's IM address with their Cisco Unified Communications Manager Directory URI.

The Directory URI IM address scheme provides the following IM addressing features:

- Multiple domain support. IM addresses do not need to use a single IM and Presence Service domain.
- Alignment with the user's email address. The Cisco Unified Communications Manager Directory URI can be configured to align with a user's email address to provide a consistent identity for email, IM, voice and video communications.
- Alignment with Microsoft SIP URI. The Cisco Unified Communications Manager Directory URI can be configured to align with the Microsoft SIP URI to ensure that the user's identity is maintained when migrating from Microsoft OCS/Lync to IM and Presence Service.

You set the Directory URI using Cisco Unified CM IM and Presence Administration GUI in one of two ways:

- Synchronize the Directory URI from the LDAP directory source.

  If you add an LDAP directory source in Cisco Unified Communications Manager, you can set a value for the Directory URI. Cisco Unified Communications Manager then populates the Directory URI when you synchronize user data from the directory source.

  Note If LDAP Directory Sync is enabled in Cisco Unified Communications Manager, you can map the Directory URI to the email address (mailid) or the Microsoft OCS/Lync SIP URI (msRTCSIP-PrimaryUserAddress).

- Manually specify the Directory URI value in Cisco Unified Communications Manager.

  If you do not add an LDAP directory source in Cisco Unified Communications Manager, you can manually enter the Directory URI as a free-form URI.

Caution If you configure the node to use Directory URI as the IM address scheme, Cisco recommends that you deploy only clients that support Directory URI. Any client that does not support Directory URI will not work if the Directory URI IM address scheme is enabled. Cisco recommends that you use the *UserID@Default_Domain* IM address scheme and not the Directory URI IM address scheme if you have any deployed clients that do not support Directory URI.

See the *Cisco Unified Communications Manager Administration Guide* for more information about setting up the LDAP directory for Directory URI.

Directory URI IM Address Considerations

Observe the following conditions when using the Directory URI IM address scheme:

- All users have a valid Directory URI value configured on Cisco Unified Communications Manager.
- All deployed clients must support Directory URI as the IM address.
- The IM address scheme must be consistent across all IM and Presence Service clusters.

See the *Deployment Guide for IM and Presence Service on Cisco Unified Communications Manager* for detailed Directory URI IM address requirements and interactions.

Change of IM and Presence node name to resolvable value

During installation, if you select not to use DHCP, you must enter a hostname and IP address for the IM and Presence server. The hostname cannot be null, localhost, or an IP address. The IM and Presence node name gets its value by concatenating the DNS domain to this hostname value to form a fully qualified domain name (FQDN). This FQDN must be resolvable. If you do not use DNS in your deployment, then the IM and Presence node name, which is set to the server's hostname by default, is not resolvable. To overcome this, you must change the IM and Presence node name to be the server's IP address after installation is complete.

For information about how to change the IM and Presence node name, see *Deployment Guide for IM and Presence Service on Cisco Unified Communications Manager*.

Configure Cisco Unified Communications Manager as Presence Gateway

Note You must complete this task on each server that you install in an IM and Presence cluster.

- You must configure Cisco Unified Communications Manager as a Presence Gateway on IM and Presence to enable the SIP connection that handles the availability information exchange between Cisco Unified Communications Manager and IM and Presence.
- For more information about how to configure a Presence Gateway on IM and Presence, see the *Deployment Guide for IM and Presence Service on Cisco Unified Communications Manager* .

What to Do Next

Configure a SIP Trunk on a Cisco Unified Communications Manager.

Related Topics

Configure SIP Trunk on Cisco Unified Communications Manager, on page 70

Configure SIP Trunk on Cisco Unified Communications Manager

After you configure Cisco Unified Communications Manager as a Presence Gateway, you must configure a SIP PUBLISH trunk on Cisco Unified Communications Manager. See the *Deployment Guide for IM and Presence Service on Cisco Unified Communications Manager* for more information.

When you have configured the SIP PUBLISH trunk on Cisco Unified Communications Manager, you must then enable SIP PUBLISH on IM and Presence.

See the *Deployment Guide for IM and Presence Service on Cisco Unified Communications Manager* for more information.

User and Server Assignments

The User Assignment Mode enterprise parameter is set to Balanced by default after an initial installation of IM and Presence Service. In balanced mode, users are automatically assigned to IM and Presence Service servers that are configured in a presence redundancy group when users are added to the cluster. No manual user assignment is required when the User Assignment Mode enterprise parameter is set to Balanced.

Note For end users to receive the availability and Instant Messaging (IM) services of IM and Presence Service, use Cisco Unified CM Administration to assign end users to IM and Presence Service servers on your nodes and clusters.

For more information about balanced and manual user assignments, and to set up IM and Presence Service servers for users, see the *Cisco Unified Communications Manager Administration Guide* .

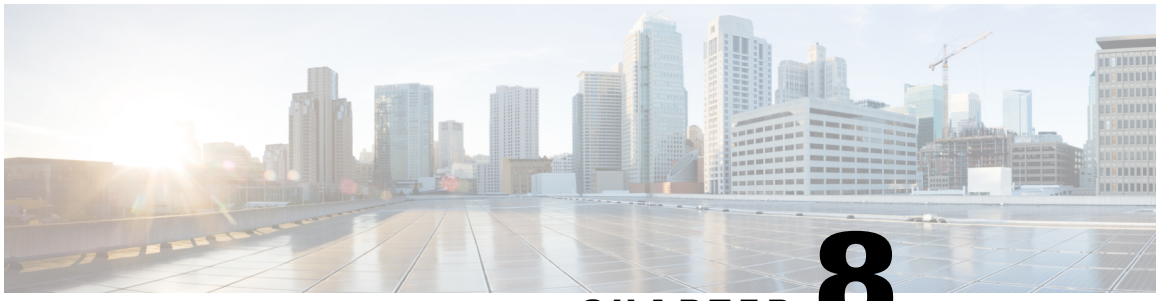
Activate services

You must activate the following services:

- Cisco SIP Proxy
- Cisco Presence Engine
- Cisco XCP Connection Manager
- Cisco XCP Authentication Service

To activate the services, select **Tools** > **Service Activation** in Cisco Unified Serviceability.

Note You must complete this task on each server that you install in an IM and Presence cluster.



CHAPTER 8

Troubleshooting

- Network Errors During Installation, page 71
- Log Files, page 71
- Unrecoverable IM and Presence Service Node, page 72

Network Errors During Installation

During the installation process, the installation program verifies that the server can successfully connect to the network by using the network configuration that you enter. If it cannot connect, a message displays, and you get prompted to select one of the following options:

— RETRY - The installation program tries to validate networking again. If validation fails again, the error dialog box displays again.

— REVIEW (Check Install) - This option allows you to review and modify the networking configuration. When detected, the installation program returns to the network configuration windows.

Networking gets validated after you complete each networking window, so the message might display multiple times.

— HALT - The installation halts. You can copy the installation log files to a USB disk to aid troubleshooting of your network configuration.

— IGNORE - The installation continues. The networking error gets logged. In some cases, the installation program validates networking multiple times, so this error dialog box might display multiple times. If you choose to ignore network errors, the installation may fail.

Log Files

If you encounter problems with the installation, you may be able to examine the install log files by entering the following commands in Command Line Interface.

To obtain a list of install log files from the command line, enter

file list install *

To view the log file from the command line, enter

file view install *log_file*

where log_file is the log file name.

You can also view logs by using the Real Time Monitoring Tool. For more information on using and installing the Real Time Monitoring Tool, refer to the*Cisco Unified Real Time Monitoring Tool Administration Guide*.

You can get more information about installation events by viewing or downloading the System History log. Refer to the following for more information:

- *Cisco Unified Real Time Monitoring Tool Administration Guide*
- *Troubleshooting Guide*

Unrecoverable IM and Presence Service Node

If a node is in a state that cannot be recovered you must reinstall the node.

Note If you reinstall a node in an intercluster deployment, you must delete and re-add the intercluster peer connections between the reinstalled node and the other nodes in the cluster.

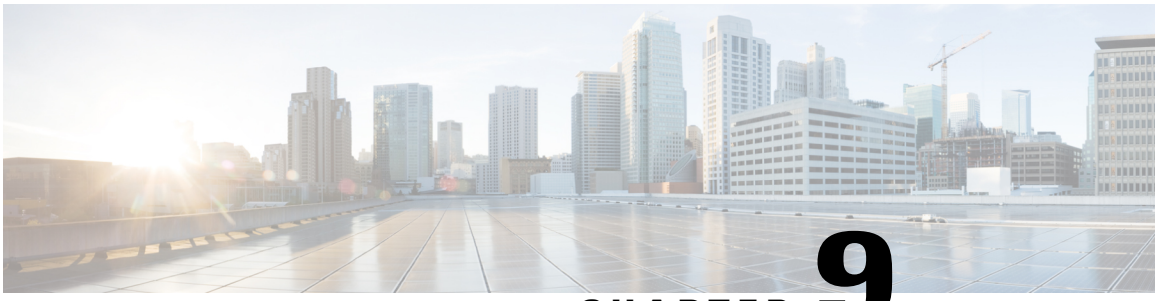
IM and Presence Service Database Publisher Node

Complete the following high-level procedure to reinstall an IM and Presence Service database publisher node.

1. Perform a fresh install of the IM and Presence Service database publisher node.
2. Perform a fresh install of each subscriber node.

IM and Presence Service Subscriber Node

If an IM and Presence Service subscriber node is in an unrecoverable state, reinstall the node.



CHAPTER 9

Reference Information

- Access Cisco Unified CM IM and Presence Administration, page 73
- Access Cisco Unified CM Administration, page 74

Access Cisco Unified CM IM and Presence Administration

Complete the following procedure to access the Cisco Unified CM IM and Presence Administration interface.

Procedure

Step 1 Open a browser and enter https://<server name or IP address>, where the server name or IP address equals the server where the IM and Presence Service is installed.

Step 2 From Administrative Applications, select Cisco Unified Communications Manager IM and Presence.

Step 3 If the system prompts you about certificates, you must enable HTTPS to secure communications between the browser client and the web server. See the *Release Notes for Cisco Unified Communications Manager* for more information about how to load the required certificates for the HTTPS connection.

Step 4 Enter the application username and application user password that you specified during installation when the system prompts you for a user name and password. The Cisco Unified CM IM and Presence Administration interface displays.

Step 5 To access other IM and Presence interfaces, select an interface from the Navigation drop-down list and select **Go**.

Access Cisco Unified CM Administration

Procedure

Step 1 Open a browser and enter https://<server name or IP address>, where the server name or IP address equals the server where Cisco Unified Communications Manager is installed.

Step 2 From the list of Installed Applications, select Cisco Unified Communications Manager.

Step 3 If the system prompts you about certificates, you must enable HTTPS to secure communications between the browser client and the web server.

Step 4 Enter the application username and application user password that you specified during installation and log in to the interface.

Step 5 To access other Cisco Unified Communications Manager interfaces, select an interface from the Navigation drop-down list and click **Go**.