Administration Guide for Cisco Unified Communications Manager Business Edition 3000

Release 8.6(2)

C O N T E N T S

Preface

This preface describes the purpose, audience, organization, and conventions of this guide and provides information on how to obtain related documentation.

The preface covers these topics:

Purpose

The *Administration Guide for Cisco Unified Communications Manager Business Edition 3000* provides conceptual information about Cisco Unified Communications Manager Business Edition 3000 and its components as well as tips for setting up features by using the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard and the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Audience

The *Administration Guide for Cisco Unified Communications Manager Business Edition 3000* provides information for network administrators who are responsible for managing the Cisco Unified Communications Manager Business Edition 3000 system. This guide requires knowledge of telephony and IP networking technology.

Organization

The following table shows the organization of this guide:

Part	Description
Part 1	"Introduction to Cisco Unified Communications Manager Business Edition 3000"
	Provides an overview of the Cisco Unified Communications Manager Business Edition 3000 system, including the components that you need to use the system; provides an overview of working in the GUIs; provides information on licensing
Part 2	"Configuration Checklists for Cisco Unified Communications Manager Business Edition 3000"
	Provides information on how to perform common tasks, such as setting up music on hold or configuring shared lines
Part 3	"Field Descriptions for the Graphical User Interfaces"
	Provides the descriptions for the fields that display in the various GUIs
Part 4	"Troubleshooting in Cisco Unified Communications Manager Business Edition 3000"
	Provides information on how to troubleshoot your Cisco Unified Communications Manager Business Edition 3000 system

Conventions

This document uses the following conventions:

Convention	Description
boldface font	Commands and keywords are in **boldface**.
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.
⟶	This pointer highlights an important line of text in an example.
^	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.**

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, 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

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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.

Further information regarding U.S. export regulations may be found at
http://www.access.gpo.gov/bis/ear/ear_data.html.

P ART 1

**Introduction to Cisco Unified
Communications Manager Business
Edition 3000**

Overview of Cisco Unified Communications Manager Business Edition 3000

This chapter contains information on the following topics:

Benefits of Deploying Cisco Unified Communications Manager Business Edition 3000

Cisco Unified Communications Manager Business Edition 3000, a system under the Cisco Unified Communications family of products, provides an IP telephony solution that enables:

- Easy setup of deployments
- Easy provisioning of users, phones, lines, and phone features
- Easy monitoring and troubleshooting
- Easy maintenance of your system (simplified backups, simplified restores, and so on)

The Cisco Unified Communications Manager Business Edition 3000 software is preinstalled on the server that is supported with your system so that you do not have to perform a software installation to get your server up and running. Deployment of the Cisco Unified Communications Manager Business Edition 3000 server, phones, and the gateway across an IP network provides a distributed, virtual telephony network. Quality of service is maintained across constricted WAN links, Internet, or VPN connections.

Your Cisco Unified Communications Manager Business Edition 3000 system is designed to support up to 300 users and 400 phones. Supplementary and enhanced services such as hold, transfer, forward, conference, multiple-line appearances, speed dials, last-number redial, and other features extend to the phones.

Web-browser interfaces allow configuration of the system. These interfaces also provide access to online help.

Components of the Cisco Unified Communications Manager Business Edition 3000 System

Your Cisco Unified Communications Manager Business Edition 3000 system consists of the following components:

- The Cisco Unified Communications Manager Business Edition 3000 Server, page 1-3
- USB Support, page 1-4
- Cisco-Provided .xls Data Configuration File, page 1-5
- Phones, page 1-6
- Attendant Console, page 1-7
- Video Support, page 1-8
- Voicemail, page 1-8
- Auto Attendant, page 1-9
- Gateway, page 1-10
- DHCP Usage for Acquiring IP Addresses, page 1-31
- DNS and Hostname Resolution, page 1-32
- SFTP Server, page 1-33

The Cisco Unified Communications Manager Business Edition 3000 Server

Cisco Unified Communications Manager Business Edition 3000 is installed for you on a standalone MCS7890-C1 with 4GB of RAM. When you plug in the server, the Cisco Unified Communications Manager Business Edition 3000 software is installed and ready for use. Cisco Unified Communications Manager, an internal component of the Cisco Unified Communications Manager Business Edition 3000 software that provides call processing for your system, resides on the Cisco Unified Communications Manager Business Edition 3000 server. Cisco Unity Connection, an internal component of the Cisco Unified Communications Manager Business Edition 3000 software that provides voicemail support for your system, also resides on the Cisco Unified Communications Manager Business Edition 3000 server. The Cisco Unified Communications Manager Business Edition 3000 server also contains the database where your configuration records are stored. Internal services that are part of the Cisco Unified Communications Manager Business Edition 3000 software allow you to troubleshoot, monitor, and perform maintenance tasks, such as backups, upgrades, and so on.

> **Tip** The Cisco Unified Communications Manager Business Edition 3000 server must use a static IP address.

Because you use web-browsable graphical user interfaces (GUIs) for configuration, monitoring, and troubleshooting, you need not connect a keyboard and mouse to the Cisco Unified Communications Manager Business Edition 3000 server. The following graphical user interfaces (GUIs) exist on the server so that you can perform tasks to support your system:

Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard

The Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard guides you through the deployment steps that are necessary to complete an initial configuration. From this wizard, you can upload a Cisco-provided .xls data configuration file that contains data that you can use to configure your system, or you can manually configure settings by moving throughout the wizard. After you log in to the Cisco Unified Communications Manager Business Edition 3000 server for the first time, the First Time Setup guides you through the set up of the application through prompts that display in the main content area. You complete the set up by clicking the appropriate responses. The Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard supports forward and back capability through Back and Next buttons that display on every page of the wizard.

> **Tip** If you click Next throughout the wizard without updating any of the settings, your system uses the default settings.

Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

After you complete the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, the next time that you log in to the server, you can access the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. The Cisco Unified Communications Manager Business Edition 3000 Administrative Interface allows you to perform the tasks that are described in this chapter. For example, in this GUI, you can monitor and troubleshoot the system, add, edit, delete configuration data, such as phones, users, sites, and so on, and perform maintenance tasks, such as backups, restorations, upgrades, add and view licenses, and so on.

The Cisco Unified Communications Manager Business Edition 3000 Administrative Interface uses a three-section layout, which consists of a top-level header, navigation menus that display on the left of the page that expand and collapse to display individual menu options, and a content section that displays on the right of the page where you can view, add, update, and delete data.

When you click an arrow next to a navigation menu, the navigation section displays the items that the belong to the navigation menu. To display the contents of an item in the navigation menu, click the item. The contents of that item display on the right side of the GUI.

Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface

When users that exist in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface log in to the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface, a web page displays where the user can manage user preferences for phone features; for example, the user can update Reach Me Anywhere, call forwarding, speed dials, the phone PIN for Cisco Extension Mobility, and the password for the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface. In addition, the user can use Cisco Web Dialer to place a call to an extension in the corporate directory.

Users can manage their user preferences settings for phone features by selecting check boxes and entering the appropriate information in the provided fields. Each user accesses his own Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface page, and this page is not shared by users.

Most settings that display in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface are dynamic; the settings display only if the user is allowed to use the feature (as configured by you, the system administrator). For example, if you do not enable Reach Me Anywhere in the usage profile that is assigned to the user, the user cannot see the Reach Me Anywhere setting in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface.

USB Support

Cisco Unified Communications Manager Business Edition 3000 gives you the option of using USB keys or a USB hard disk for the following functionality:

- Performing a reimage of the server through a USB DVD drive—Perform a reimage of the server only when your technical support team advises that you do so. You can copy the answer file, platformConfig.xml (www.cisco.com), to the USB DVD drive key and perform a reimage.

Tip   For MCS7890-C1, the default Answer File (platformConfig.xml) required for install configuration is packaged within the DVD.

- Updating the network parameters—You can copy the configure.xml file to a USB key to update the network parameters. The temporary network address allows you to log in to the First Time Setup Wizard through a browser. This is also an alternative method to connect a laptop to the server using a cable. You must update the network parameters before you can access the GUIs.

Note   After you run the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, designate a single USB DVD drive key for this function.

- Uploading a Cisco-provided country pack—You copy the Cisco-provided country pack to the USB key and then install the country pack through the Country/Locale page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard.

- Uploading the Cisco-provided.xls data configuration file—You can copy the Cisco-provided .xls data configuration file to the USB key and then upload the spreadsheet to the system through the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard.

- Backing Up and Restoring Your Data—You may store your backup tar file to a USB hard disk, and if you must restore you data for any reason, you can access the backup tar file on the USB hard disk to restore the data through the Restore page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

- Uploading an audio source file for Music On Hold—You can copy the .wav file that you want to use for music on hold to the USB key; after you insert the USB key in the Cisco Unified Communications Manager Business Edition 3000 server, you can upload the file through the Music On Hold page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

- Uploading Cisco User Connect licenses—Cisco User Connect license allow you to track the users and phones that are in your system. You may use a USB key to upload licenses.

Note Some operating systems do not allow you to copy an entire file that is larger than 4 GB to the USB key. The system silently copies only 4 GB of the file to the USB key. Hence, Cisco recommends that you use USB keys that are formatted as FAT32 in the Cisco Unified Communications Manager Business Edition 3000.

Linux platform supports USB keys formatted with FAT32.

- Exporting your configured data—By using the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, you can export all of your configured data to a storage device that is connected to a USB port or to a SFTP server. You may store the exported configuration to a USB key or USB hard disk.

- Using the Cisco Diagnostic Tool—The Cisco Diagnostic Tool allows you to diagnose your system if you cannot access the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. You copy the diagnose.xml file that is used with the Cisco Diagnostic Tool to a USB key.

Note Make sure that you designate a USB key just for this purpose. Do not use the USB key for other functions.

For More Information

Cisco-Provided .xls Data Configuration File

The data configuration file, which is a Cisco-provided .xls spreadsheet template where you can enter the majority of your configuration data, provides the following support:

- Allows you to plan your configuration before you begin your first day of deployment.

- Allows you to insert users and phones in bulk through the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface after your initial deployment.

To quickly import (add) your configuration data to Cisco Unified Communications Manager Business Edition 3000 after you plug in your Cisco Unified Communications Manager Business Edition 3000 server, you can enter your data and then upload the Cisco-provided .xls data configuration file to the server from a USB key or your desktop when you run the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard. If you upload the file, you bypass the configuration pages in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, and the wizard immediately takes you to the Summary page where you can confirm your data.

After the server restarts at the end of the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, you can log into the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface and verify that you data got added to Cisco Unified Communications Manager Business Edition 3000. If you include user and phone data in the Cisco-provided .xls data configuration file, the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface allows you to import the users and phones and then informs you of import errors for users and phones.

Tip If you do not want to upload the Cisco-provided .xls data configuration file when you run the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, consider entering your data in the file and using it as a guide when you manually enter the information in the GUIs.

For example, during your initial deployment, you inserted 25 users and phones; now, you must insert 25 more users and phones. To accomplish this task, you can modify the Cisco-provided .xls data configuration file that you used for automatic set up during the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard or you can obtain a new Cisco-provided .xls data configuration file and add your new users and phones to that new spreadsheet.

Caution Do not use the Cisco-provided .xls data configuration file to modify your configuration data. Cisco Unified Communications Manager Business Edition 3000 only supports the Cisco-provided .xls data configuration file for the initial deployment and for bulk insertion (adding) of users and phones after the initial deployment. For example, if you attempt to update existing user and phone information through the Cisco-provided .xls data configuration file, the updates fail.

For More Information

- Working with the Cisco-Provided .xls Data Configuration File, page 3-1

Phones

Cisco Unified Communications Manager Business Edition 3000 supports a variety of phones that are available through Cisco. If the phone model can support either SIP or SCCP, Cisco Unified Communications Manager Business Edition 3000 uses SIP with the phone.

The Cisco Unified Communications Manager Business Edition 3000 server sends a phone-specific configuration file to each phone in your system. (This file is not the same as the Cisco-provided .xls data configuration file that is described in the "Cisco-Provided .xls Data Configuration File" section on page 1-5.) This configuration file contains data that your phone requires to work; for example, the configuration file specifies whether the phone can use barge, whether phones can use phone applications, what the locale is for the system, and so on.

You can configure the phone for Cisco Unified Communications Manager Business Edition 3000 by using the following methods:

- Through the Cisco-provided .xls data configuration file in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (for initial deployment)

- Through the Cisco-provided .xls data configuration file in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (after initial deployment)

- Under **Users/Phones > Phones** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (after initial deployment)

Your phone requires an IP address and other network settings to work. For information on how your phone obtains its IP address and other network settings, refer to your phone administration documentation.

For your phone to work, you must install licenses. You cannot add a phone to the system if the appropriate license is not installed and available for use.

All features that are available with Cisco Unified Communications Manager Business Edition 3000 are not supported on all phone models. Before you configure your Cisco Unified Communications Manager Business Edition 3000, determine which features are supported on your phone by obtaining the phone administration documentation that is available with your phone and this version of Cisco Unified Communications Manager Business Edition 3000.

For More Information

Attendant Console

Cisco Unified Communications Manager Business Edition 3000 supports the Cisco Unified IP Phone 8961 which, can be used as an attendant console when a Cisco Unified IP Color Key Expansion Module (KEM) is attached to the phone. For information on connecting a KEM, see *Cisco Unified IP Phone 8961, 9951, and 9971 Administration Guide for Cisco Unified Communications Manager 8.5 (SIP)*.

The addition of the KEM expands the number of buttons that are available to the Cisco Unified IP Phone 8961 to 41 buttons for use as an attendant console. This provides the user with up to 40 buttons that can be used as speed dials, line buttons, or other features as required.

Note   Button number 1 is automatically designated as a line by the system because button number 1 is used to correlate the phone and user when the user extension is assigned to line 1 on the phone. You cannot update Line Button 1.

The system administrator uses the Usage Profile of the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface to set up a usage profile for an attendant console. Using the Phone Button Template, the administrator can configure the 40 buttons that are available when a KEM is attached to the Cisco Unified IP Phone 8961.

Note   The Phone Button Template is automatically provisioned with speed dials for the 40 buttons that are available. The system administrator can use the Phone Button Template to change the function of the 40 buttons that are available.

Note   During migration all speed-dial details are saved and migrated to the new system.

For more information about configuring the Usage Profile, see Chapter 40, "Usage Profiles Settings."

Video Support

Cisco Unified Communications Manager Business Edition 3000 supports point-to-point video calls between two video-capable, nonteleworker phones (for example, Cisco Unified IP Phones 8941 and 8945) within the same site or when calling between sites that are configured with network interfaces of at least T1 capacity or larger and with video services between sites enabled.

Note   Point-to-point video is not supported within the teleworker site or between the teleworker site and any other site that is connected to the teleworker site.

Note   Cisco Unified Communications Manager Business Edition 3000 does not support video conferencing.

Caution   The number of video calls is expected to be small. Because, bandwidth is usually limited between sites, the system does not reserve video bandwidth for infrequent video calls so that this bandwidth can be used for the audio-only calls. Thus, if a large number of video calls are made (relative to the number of video calls between sites as shown on the sites page), audio and video quality can suffer between the sites. If you encounter poor quality due to a large number of video calls, you may find it necessary to disable video to and from that particular site.

The system administrator accesses **System Settings > Sites** on the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface to configure the system for point-to-point video.

For More Information

Sites, page 1-36

Voicemail

Cisco Unity Connection, an internal component of the Cisco Unified Communications Manager Business Edition 3000 software that provides voicemail support for your system, resides on the Cisco Unified Communications Manager Business Edition 3000 server. With Cisco Unified Communications Manager Business Edition 3000, users can perform the following tasks:

- Call into the voice messaging system
- Send voice messages by using the phone keypad

- Check voice messages by using the phone keypad

- Reply to voice messages by using the phone keypad

- Forward voice messages by using the phone keypad

- Manage receipts by using the phone keypad—Receipts indicate when a voice message was played by an intended recipient, when it was received by the intended recipient, and if it was received by the intended recipient.

Tip   Voicemail support requires the use of voicemail licenses. You must install one voicemail license for each user that requires voicemail.

For More Information
- Setting Up Voicemail, page 8-12
- Cisco User Connect Licensing, page 4-1

Auto Attendant

In Cisco Unified Communications Manager Business Edition 3000, the auto attendant serves as the "virtual receptionist;" that is, the caller receives an automated greeting and series of prompts in order to successfully transfer the call to a user without the assistance of an operator. The following options describe the auto attendant support.

Note   Auto attendant uses the same internal components as voicemail. Auto attendant is turned on by default, and you cannot turn it off. The system can handle up to 12 simultaneous calls to voicemail and auto attendant.

- The auto attendant uses a single menu for both business and closed hours (default); the auto attendant plays the same greeting and set of prompts during both business and nonbusiness hours. Cisco Unified Communications Manager Business Edition 3000 automatically comes with a sample menu that provides the following functionality. If you do not want to use the sample menu, you can upload another menu that can be used by the system.
    - The auto attendant plays a greeting announcing that the corporate directory has been reached.
    - The auto attendant requests that the caller enter the extension on the phone to transfer the call.
    - If the caller does not enter the extension quickly, the auto attendant requests that the caller enter the extension again.
    - The auto attendant transfers the call to the user of the extension.
    - The auto attendant requests that the caller reenter the extension of the user when the system cannot find the extension.
    - The auto attendant plays a farewell prompt.
- The auto attendant uses a different menu for business hours and for closed hours; for example, the auto attendant plays a greeting and set of prompts during regular business hours, but, when the company is closed, the auto attendant plays an announcement that the business is closed and then automatically ends the call. (On the Auto Attendant page, you specify when the company is closed and when it is open.) For this option, you must upload a file that contains your greeting, set of prompts, and your message for nonbusiness hours.

Tip The auto attendant does not support a different menu for holidays.

To use the auto attendant, you must first configure the Voicemail and Auto Attendant Extension setting in the dial plan. You can configure this setting

- Through the Cisco-provided .xls data configuration file in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (for initial deployment)

- On the Dial Plan page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (during initial deployment if you do not use the Cisco-provided .xls data configuration file)

- Under **System Settings > Dial Plan** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (after initial deployment)

After you configure the Voicemail and Auto Attendant Extension setting in the dial plan, configure the Auto Attendant page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. (Select **System Settings > Auto Attendant**.) After you set it up, remember to test your auto attendant functionality.

Note Auto attendant uses an internal user called operator. You cannot edit or delete this user, and it does not display in the Search User page. In addition, you cannot add a user with the user ID of operator. (User IDs should indicate who the user is, not the functions or tasks that the user perform.)

Do not assign the Voicemail and Auto Attendant Extension that you configure in the dial plan to the user that is your operator.

For More Information

Gateway

For all calls that go through the PSTN, the Cisco Unified Communications Manager Business Edition 3000 uses the following gateways:

- Gateway built in to Cisco Media Convergence Server 7890C1 (MCS7890-C1)
- Cisco 2901 Integrated Services Router (ISR2901)
- SPA8800
- SIP Trunk

Table 1-1 shows the supported PSTN connections for Cisco Unified Communications Manager Business Edition 3000.

Table 1-1   Supported PSTN Connections

SI No.	Gateway Type	Connection Type	Max Number of ports	Usage
1	MCS7890-C1	• MGCP T1 PRI • MGCP T1 CAS	2	Central Site Only
2	Cisco ISR2901	• MGCP T1 PRI • MGCP T1 CAS	Unlimited for Provisioning	Central Site and/or Remote Site
3	SPA8800	FXO	Unlimited for Provisioning	Central Site and/or Remote Site
4	SIP Trunk	SIP trunk	Unlimited for Provisioning	Central Site and/or Remote Site

The gateways serve as your connection to the PSTN; that is, the gateway allows all of your users to place and receive calls that go through the PSTN.

Note   For Cisco ISR2901, ensure that you connect the T1/E1 PSTN connections to slot 0 only.

The Cisco ISR2901 that you use with Cisco Unified Communications Manager Business Edition 3000 cannot be used for any IP routing functions other than those that are supported with Cisco Unified Communications Manager Business Edition 3000.

The Cisco Unified Communications (UC) Technology Package License must be purchased with the order of Cisco ISR2901.

Note   Install the Cisco Unified Communications Technology Package License before you configure any Voice features on the Cisco Unified Communications Manager Business Edition 3000.

When you order a new router, it is shipped preinstalled with the software image and the corresponding permanent licenses for the packages and features that you specified. You do not need to activate or register the software before use. For more informations, see http://www.cisco.com/en/US/docs/routers/access/sw_activation/SA_on_ISR.html#wp1057952.

To verify if the Cisco Unified Communications Technology Package License is installed and activated, see Chapter 25, "License Settings".

The Cisco MCS7890-C1 supports approximately 300 users and 400 devices.

For MCS78901-C1, you can create an internal gateway during the First Time Setup using the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard.

For the Cisco MCS7890-C1 gateway, you can configure the general settings, such as the Media Resource IP address and the hostname. The settings that you configure for the gateway allows the gateway, the Cisco Unified Communications Manager Business Edition 3000 server, and the phones to interact with each other for calls that go through the PSTN connection.

Ensure that you assign a static IP address for the Cisco MCS7890-C1 internal gateway. However, there is no such restriction of a static IP address for ISR2901 gateways. If you plan to use DHCP, see the "DHCP Usage for Acquiring IP Addresses" section on page 1-31.

You can configure the gateway for Cisco Unified Communications Manager Business Edition 3000 by using one of the following methods:

- Through the Cisco-provided .xls data configuration file in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (for initial deployment).

- On the Gateway page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (during initial deployment if you do not use the Cisco-provided .xls data configuration file).

Under **Connections > PSTN Connections > Add PSTN Connection > Connection Type > Device > Device > Add Device** in Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (after initial deployment).

Tip After you add the Cisco ISR2901 gateway configuration to Cisco Unified Communications Manager Business Edition 3000, you must update the gateway with the appropriate CLI commands. See **Generate CLI Commands, page 20-1**.

For More Information

- SPA8800 Gateway, page 1-12
- SIP Trunking, page 1-24
- DHCP Usage for Acquiring IP Addresses, page 1-31
- IP Addressing, page 1-32
- DNS and Hostname Resolution, page 1-32
- Working with the Cisco-Provided .xls Data Configuration File, page 3-1
- Checklists for Configuring the Gateway, page 7-1

SPA8800 Gateway

SPA8800 is a small business analog gateway that supports the following:

- Analog trunking (FXO) to the PSTN
- Devices such analog phones and fax machines

Cisco Unified Communications Manager Business Edition 3000 is not responsible for upgrading SPA8800 firmware. Therefore, users must upgrade SPA8800 to the latest firmware (version 6.1.7 or later) prior to setting up analog trunks and lines on the Cisco Unified Communications Manager Business Edition 3000. Firmware can be downloaded from http://wwwin.cisco.com/voice/products/callcontrol/cmbe/3000/index.shtml.

Note The user interface for SPA8800 gateway interface is supported in English only. When the user interface on the Cisco Unified Communications Manager Business Edition 3000 is changed to another language, the options in the Advanced Options drop-down menu for the device or gateway remain in English.

Note Cisco Unified Communications Manager Business Edition 3000 supports connection to SPA8800 using static IP addresses only.

Overview

Perform the following actions, in sequence, to correctly configure the SPA8800:

1. Cisco Unified Communications Manager Business Edition 3000 Configuration

    a. Configure the Related Connections on the Cisco Unified Communications Manager Business Edition 3000 GUI, page 1-13

    b. Configure the SPA8800 Analog Phones on the Cisco Unified Communications Manager Business Edition 3000 GUI, page 1-17

2. SPA8800 Configuration

    a. Perform the Initial Setup on the SPA8800 for IP Addresses using SPA Interactive Voice Response, page 1-21

    b. Configure settings for TFTP on the SPA8800 GUI, page 1-22

Configure the Related Connections on the Cisco Unified Communications Manager Business Edition 3000 GUI

You must configure the SPA8800 device in the Cisco Unified Communications Manager Business Edition 3000 first, and then add Phone 1 or Line 1 for the SPA8800 device.

Use the following procedures to add, edit, or delete SPA8800 connections on the Cisco Unified Communications Manager Business Edition 3000 GUI.

Add SPA8800 connections from the PSTN Connections page

Perform the following procedure to add SPA8800 connections from the PSTN Connections page:

Procedure

Step 1   From the PSTN Connections page, click the **Add PSTN Connection...** button below the PSTN table as shown in Figure 1 on page 1-13.

Figure 1   PSTN Connections table
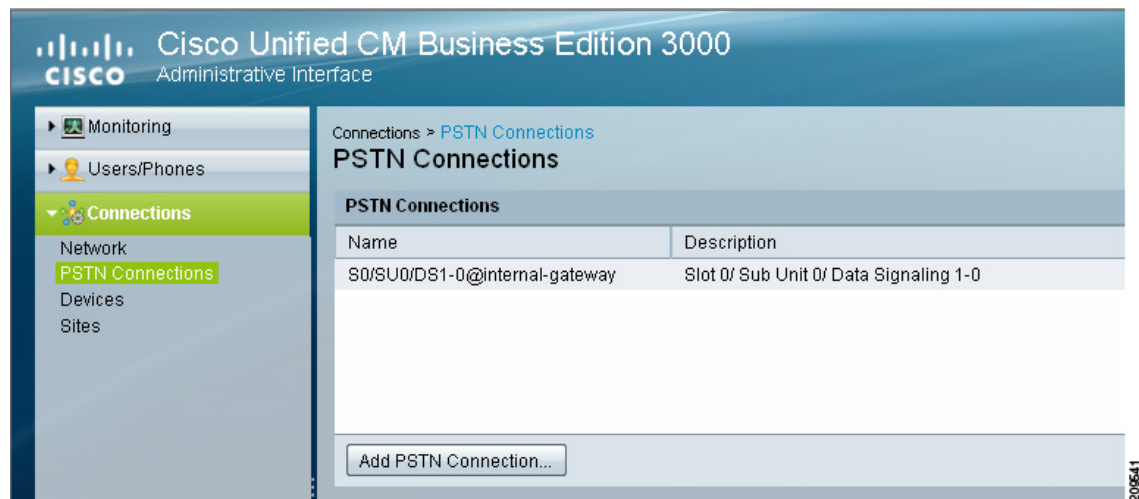
Step 2   The Add PSTN Connection window appears. Choose the connection type **FXO**, and then click **Next**.

Step 3 The Device options appear. Select **SPA8800** from the Device Type drop-down menu, and choose **Add Device** from the Device drop-down menu.

Figure 1-2   *Device options*

Step 4 The Add SPA8800 Device window opens, as shown in Figure 3 on page 1-14. Enter the MAC address, IP address, and description. The name is derived from the MAC address. Click **OK**.

Figure 3   *Add Device window*

Note If at this point you click Cancel, the connection is cancelled but the device you added in the previous step remains in the system.

Step 5 The new device is now listed as an option under Device in the Add PSTN Connection window. Select the new device from the drop-down list and click **Next**.

Step 6 From the drop-down menu, select a service provider. Click **Next**.

Step 7 The Connection Settings appear, as shown in Figure 4 on page 1-15. Enter the appropriate connection settings and advanced settings. Refer to Table 31-11 on page 31-32 for information on each of these settings.

Figure 4 ***Connection Settings***

Step 8 Click **Finish** to complete the addition of the device.
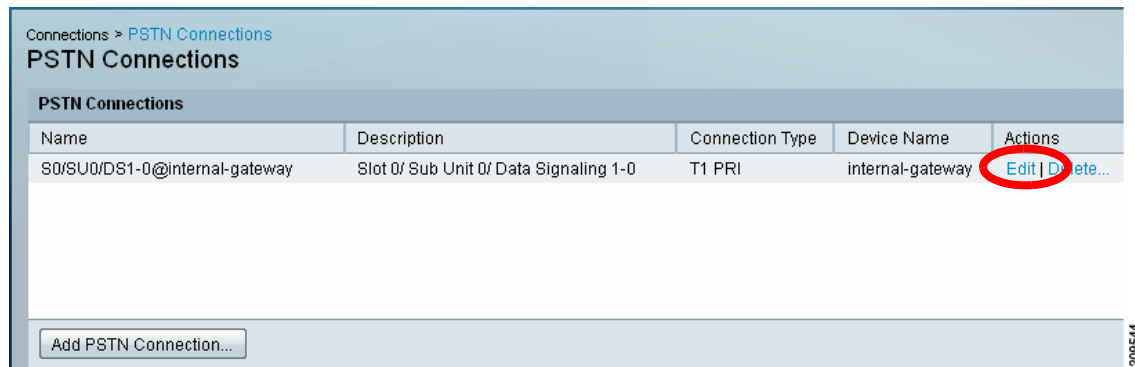
Note Any changes that you make on the SPA8800 connection and phone causes the SPA8800 to reboot. Reboots for configuration changes can take several minutes to take effect.

Edit SPA8800 connections from the PSTN Connections page

Procedure

Step 1 To edit a connection, choose **Edit** for that connection, as shown in Figure 5 on page 1-16.

Figure 5   Edit PSTN Connections

Step 2   The Edit window appears. From this window, you can edit the Description, Direct Inward Dial (DID) Number, Line Usage fields, and Advanced Settings. Refer to Table 31-11 on page 31-32 for information on each of these settings.

Step 3   Choose **Save** in the Edit window to save your edits. The device reset dialog appears to notify the user that the SPA8800 device is being reset and that all calls for the associated phones and PSTN connections will be disconnected.

Note   Any changes that you make on the SPA8800 connection and phone causes the SPA8800 to reboot. Reboots for configuration changes can take several minutes to take effect.

Delete SPA8800 connections from the PSTN Connections page

Procedure

Step 1   To delete a connection, choose **Delete** for that connection from the PSTN Connection table.

Note   A warning appears for connections that are configured for Emergency Calls Only, indicating that the DID used for the connection can no longer be used as an ELIN.

Step 2   The deletion will not occur for Line 1 if Phone 1 is not configured, and the user will get a message saying that the port is a master port and it can be deleted only as part of the SPA8800 device deletion. In all other cases the device reset dialog will appear notifying the user that the SPA8800 device will be reset and all calls of the associated phones and PSTN connections will be disconnected.

The connection is removed from the PSTN Connections list.

Note   An associated device is not deleted as a result of removing the connection. A device can be deleted only from the Devices page.

![note icon] **Note**   Any change made on the SPA8800 connection and phone results in a reboot of the SPA8800. Reboots for configuration changes can take several minutes to take effect.

Configure the SPA8800 Analog Phones on the Cisco Unified Communications Manager Business Edition 3000 GUI

Use the following procedures to add, edit, or delete SPA8800 analog phones and other devices from the Cisco Unified Communications Manager Business Edition 3000 GUI.

Add a SPA8800 analog phone from the Phones page

Procedure

Step 1   From the Phones page, click the **Add Phone** button, as shown in Figure 6 on page 1-17.

Figure 6   Add Phone
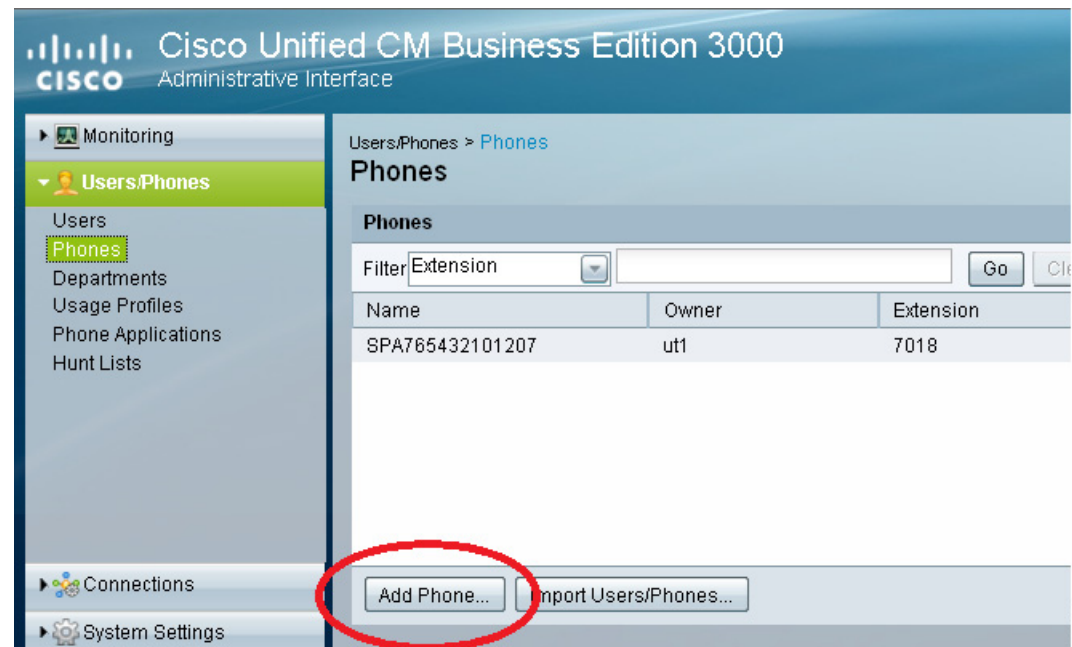
Step 2   The Add Phone window appears. Choose **Analog Phone (SPA8800)** from the drop-down menu, as shown in Figure 7 on page 1-18.

Figure 7   Phone Type

Step 3   Choose **Add Device** from the Device Name drop-down menu. This is necessary only if the gateway does not currently exist. You can choose the **SPA8800 Gateway** if it is already listed in the drop-down menu.

Step 4   The Add Device window appears. Enter the MAC address and the IP address (name is derived from the MAC address). Click **OK**. Devices are added through modal dialog box, with a value returned to Add Phone dialog box. The gateway-specific properties (for example: available/used ports) are then loaded into the Add Phone dialog box.

Step 5   If you added a new device, the Device Name now appears in the Add Phone window, along with the Device Port, as shown in Figure 8 on page 1-19. Only available ports are listed in the Device Port field. If certain ports are unavailable, the Device Port field defaults to the next available port.

Figure 8

Step 6   Choose an extension from the drop-down menu. All configured extensions are listed in the drop-down menu.

Step 7   Click **OK** to add the phone and return to Phones table.

✎
Note   Any change made on the SPA8800 connection and phone results in a reboot of the SPA8800. Reboots for configuration changes can take several minutes to take effect.

Edit a SPA8800 analog phone from the Phones page

Procedure

Step 1   To edit an analog phone, click the **Edit** button for that phone in the Phones table, as shown in .

Figure 9

Step 2   The Edit window appears. From this window, you can edit the description and extensions.

Step 3   Click **Save** in the Edit window to return to the Phones table. The device reset dialog box will appear notifying the user that the SPA8800 device will be reset and all calls of the associated phones and PSTN connections will be disconnected.

Note   Any change made on the SPA8800 connection and phone will cause the SPA8800 to reboot. Reboots for configuration changes can take several minutes to take effect.

Delete a SPA8800 analog phone from the Phones page

Procedure

Step 1   To delete a phone, click the **Delete** button for that phone in the Phones table.

Step 2   The delete will not occur for Phone 1 if Line 1 is not configured and the user the user will get a message telling them that the port is a master port and it can only be deleted as part of the SPA8800 device deletion. In all other cases the device reset dialog box will appear notifying the user that the SPA8800 device will be reset and all calls of the associated phones and PSTN connections will be disconnected.

The phone is removed from the Phones page.

Note   Any change that you make on the SPA8800 connection and phone causes the SPA8800 to reboot. Reboots for configuration changes can take several minutes to take effect.

Edit SPA8800 devices from the Devices page

Procedure

Step 1   In the Devices page, locate the SPA8800 you wish to edit and click the **Edit** button under the Actions column.

Step 2   The Edit window appears. From this window, you can edit the MAC address, IP address, description, and advanced settings.

Step 3   Click **Save** in the Edit window to return to the Devices page. Any change made on the SPA8800 connection and phone will cause the SPA8800 to reboot. Reboots for configuration changes can take several minutes to take effect.

Delete SPA8800 devices from the Devices page

Procedure

Step 1 To delete an SPA8800, locate the SPA8800 you wish to delete and click the **Delete** button in the Actions column.

Step 2 The Confirm Delete window appears. Listed in this window are all phones and PSTN connections associated with this SPA8800.

Step 3 Click **Delete** to confirm deletion of the SPA8800.

Note If the SPA8800 you wish to delete has one or more FXO connections that are configured for emergency calling, any associated ELINs will be removed.

Note Any change made on the SPA8800 connection and phone will cause the SPA8800 to reboot. Reboots for configuration changes can take several minutes to take effect.

DID and ELIN configuration

DIDs for the trunks must be configured elsewhere as translation patterns, attendant numbers, directory numbers, or hunt lists in order to route incoming calls. Simply placing a DID on a trunk does not allow it to associate with a particular station within the system. In the case of the All Call Types option, customers are responsible for determining how calls on a trunk are routed (for example: attendant number or directory number).

In the case of Emergency Calls Only, a call-back pattern is set up that ensures that incoming calls are routed to the last number that called out on that particular gateway.

If an ELIN is associated with an analog trunk, Cisco recommends that it be configured on that analog trunk. If the ELIN is using a digital gateway (example: T1 or PRI connection), Cisco recommends that it be configured on the site.

To confirm that the configuration for emergency calling is successful, after the SPA8800 is configured, go to the site page and confirm that the DID for that trunk is listed as an ELIN. If it is not listed as an ELIN, check the other sites to see if it appears on one of them—it may have been set up on the wrong site. If this happens, check the IP address and subnet settings in Cisco Unified Communications Manager Business Edition 3000 to ensure that the gateway is registering at the correct site.

Note The manner in which a particular SPA8800 is associated with a site is based on the IP address and the subnets that have been set up for that site.

PSTN Connection Settings

Table 31-11 on page 31-32 defines the connection settings and advanced setting that are required to edit SPA8800 connections.

Perform the Initial Setup on the SPA8800 for IP Addresses using SPA Interactive Voice Response

The SPA8800 requires setup through the SPA Interactive Voice Response (IVR) menu to locate the Cisco Unified Communications Manager Business Edition 3000.

Use the following procedure to perform this setup.

Procedure

Step 1   Connect an analog phone to port 1.

Step 2   Go off hook and enter the configuration menu by pressing the * (star) key four times.

Step 3   Enter **101** followed by the # (pound) key to set the Internet connection type, followed by **1#** to set it to static IP addressing.

Step 4   Enter **111#** to set the static IP address.

> **Note**   DHCP must be set to Disabled; otherwise you hear "Invalid option" if you try to set this value. A password is required.

Step 5   Enter IP address using numbers on the telephone key pad. Use the * (star) key to enter a decimal point, followed by the # (pound) key. Press 1 to save the configuration change.

> **Note**   If, while entering a value (for example, an IP address), you decide to exit without saving any changes, you must press the * (star) key twice within a half-second window of time. Otherwise, the entry of the * (star) key will be treated as a dot (decimal point).

> **Tip**   To enter IP address, use numbers 0 – 9 on the telephone key pad and use the * (star) key to enter a decimal point.

Step 6   Check the subnet mask by entering **120#**.

Step 7   If necessary, change the subnet mask by entering **121#**.

Step 8   Set the default gateway IP address by entering **131#**, and then check the gateway IP address by entering **130#**. Hang up the phone for the values to take effect.

Configure settings for TFTP on the SPA8800 GUI

Procedure

Step 1   Enter the web interface using the following URL: **http://IP_Address_Of_SPA/admin/advanced**.

> **Note**   If you have problems accessing the SPA8800 device using the web interface, the issue may be a problem with Cisco Discovery Protocol (CDP).
>
> By connecting your laptop directly to the SPA8800 using an Ethernet cable, you can access the SPA8800 administrative interface to enable/disable CDP by choosing **Network > Wan Status > VLAN Settings > Enable CDP**.

Step 2   Set the default password.

Step 3   Set the TFTP address for syncing the SPA8800 configuration from the Cisco Unified Communications Manager Business Edition 3000. Click the **Voice** button on the upper left corner and then click the **Provision** tab, as shown in .

Figure 10

Step 4   In the Profile Rule field, specify the TFTP protocol and the IP address of the Cisco Unified Communications Manager Business Edition 3000. In the example in , **tftp://192.168.2.251/spa$MA.cnf.xml** is the TFTP protocol where 192.168.2.251 is the IP address of the Cisco Unified Communications Manager Business Edition 3000.

> **Note**   Only TFTP is supported in the current release.

Step 5   Click the **Submit All Changes** button.

Step 6   Reboot the SPA8800 now. This can be done by unplugging the power cord for the SPA8800 and plugging it back in.

SPA8800 Feature Codes

Table 2 lists the feature codes that are supported for SPA8800.

Table 2   Supported Feature Codes

Feature	Code Number
Call Redial	*07
Call Back	*66

Feature	Code Number
Call Back Deactivate Code	*86
Call Waiting	*56
Call Waiting Deactivate Code	*57
Call Waiting Per Call Act Code	*71
Call Waiting Per Call Deact Code	*70
Call Return	*69
Attn-Transfer	*84
Conference	*85

SPA8800 Limitations

1. The Do Not Disturb (DND) setting cannot be configured for SPA8800 analog phones.

2. Music On Hold (MOH) is not supported on the SPA8800 analog phones.

3. Blind Transfer is not supported on the SPA8800 analog phones.

4. Call Forwarding must be set from the Cisco Unified Communications Manager 3000 and not from the SPA8800.

5. In a clear call scenario, such as the updating of phones or PSTN connections on the SPA8800 gateway, Cisco IP Phones with active PSTN calls receive a fast busy tone when a corresponding active FXO line is cleared.

SIP Trunking

In the Cisco Unified Communications Manager Business Edition 3000, the SIP trunk serves as a connection to the SIP service provider network for PSTN connectivity. To interact with the SIP trunk connection, the Cisco Unified Communications Manager Business Edition 3000 requires SBE (Session Border Elements) to provide security, topology hiding, and ALG (Application Level Gateway) functionalities.

To achieve SIP trunking, use the following operations:

- Provision Cisco Unified Communications Manager Business Edition 3000 to interact with the SBE. You can achieve this by the installation of Connection Packs, and by adding the SIP trunk connection through Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

  For information on connection packs, see .

- Provision SBE to interact with Cisco Unified Communications Manager Business Edition 3000. You can achieve this using the configurations provided by the service provider.

- Provision SBE to interact with the service provider. You can manage this using the service provider.

The following are the different types of SIP trunk connections for Cisco Unified Communications Manager Business Edition 3000:

- Standard Cisco SIP trunk connection—SIP trunk is connected to the service provider through the Cisco Unified Border Element (CUBE) on Cisco ISR8xx Series (Integrated Services Router). The parameters on the Cisco Unified Communications Manager Business Edition 3000 for the SIP trunk connection are preconfigured to support general SIP trunk functionalities.

- Service Provider SIP trunk connection—SIP trunk is connected to the service provider through other SBEs. The parameters of the Cisco Unified Communications Manager Business Edition 3000 SIP trunk connection is preconfigured based on the inter-operational tests with specific service provider. The service provider for provisioning is available after the installation of the SIP trunk connection pack that is customized for the service provider.

If the Cisco Unified Communications Manager Business Edition 3000 deployment requires SIP trunk connection in your site, deploy an SBE in the site to route PSTN calls. This SIP trunk connection can also be used to route the PSTN calls from other sites.

Cisco Unified Communications Manager Business Edition 3000 also supports multiple SIP trunks to the service provider through a single or multiple session border elements.

Note   If a remote site needs to deploy a SIP trunk connection to its local SIP service provider, deploy a session border element on the remote site, rather than using the SIP trunk on the central site. The SIP trunk configured on the central site can also be used.

To add, edit, or delete SIP trunk connections, sign in to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**Connections > PSTN Connections**).

Additionally, you must bind a SIP trunk/SBE with a site using the service provider IP address specified on the SIP trunk connection and provision the subnet on the site (**Connections > Sites > General** tab).

Figure 1-11   *Provisioning Scope for SIP Trunk with Cisco Unified Communications Manager Business Edition 3000*
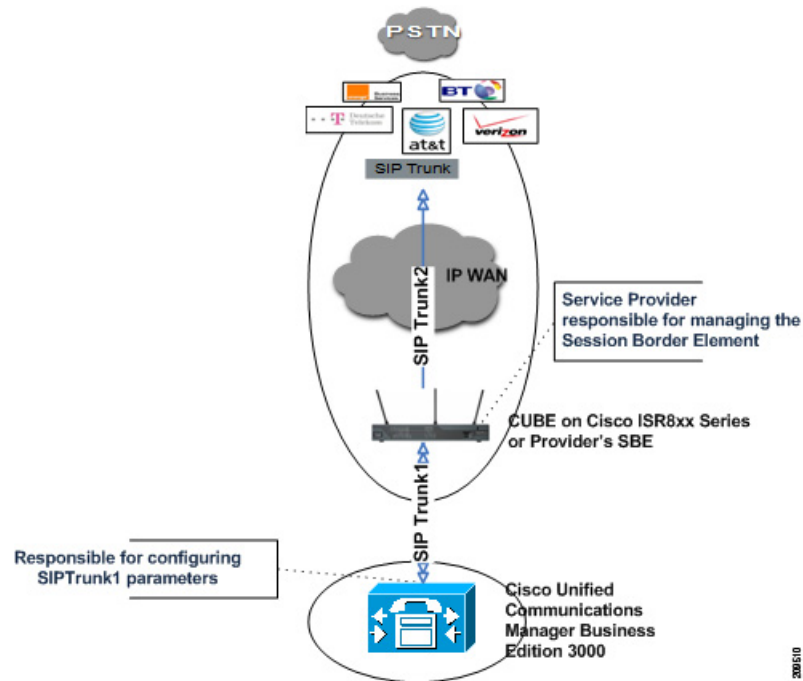
Note   SIP Trunk is another PSTN connection type along with T1/E1 PRI, T1 CAS, and FXO connections.

Based on the requirement of PSTN connections for Cisco Unified Communications Manager Business Edition 3000, provisioning is performed for routing of PSTN calls using the gateway on **Connections > Sites > Add Site > PSTN Access**.

Limitations of SIP Trunking

Cisco Unified Communications Manager Business Edition 3000 does not support the following features on SIP trunk to service providers:

- Digest authentication
- QSIG
- TLS
- IME
- MLPP
- IPV6
- MTP
- Raw DTMF
- RSVP

Cisco Unified Communications Manager Business Edition 3000 does not support the following functionalities on SIP trunk:

- pTime—This media-based parameter cannot be configured on Cisco Unified Communications Manager Business Edition 3000. However, a fixed value will be used.

- DTMF—The PSTN calls with SIP trunk connection encountering DTMF incompatibility requires an MTP to normalize the DTMF. As Cisco Unified Communications Manager Business Edition 3000 does not support MTP, the call fails.

- Early media on 180—For SIP trunk connections, Cisco Unified Communications Manager Business Edition 3000 signals calling phone to play local ringback as it does not receive SDP in the 180 response. However, the system receives as SDP in the 183 response.

Connection Pack

The provisioning of SIP trunks to SBE from Cisco Unified Communications Manager Business Edition 3000 is supported through the installation of connection packs. The connection pack is a Cisco Options Package (COP) file signed by Cisco.The main advantage of using the connection pack is that it allows quick and easy configuration of the SIP Trunk with minimal or no errors.

The connection pack is bundled with the Provider XML file, and Logical Unit Application (LUA) scripts necessary for the operation of SIP Trunks.

- Provider XML— A configuration file detailing the connection definition for a particular SIP trunk on the Cisco Unified Communications Manager Business Edition 3000.

  The provider XML file controls the default values and the display of Administrative Interface elements for PSTN Connection configurations for provisioning the SIP trunk.

- LUA script—(Optional) A mechanism supports transparency and normalization of SIP messages for interacting with the service provider.

For the service provider SIP trunk connection, the provider XML is defined and bundled with the connection pack. The connection pack must be installed before provisioning the service provider SIP trunk.

The mechanism to upgrade the connection pack is through the **Maintenance > Upgrade** page on the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. For more information, see Installing the Connection Pack File, page 1-28.

The connection pack is used to upgrade the following SIP trunk connections:

- Cisco Standard SIP Connection—The connection pack bundles the provider XML for configuring the SIP trunks using CUBE on Cisco ISR8xx as the service provider.

  You can edit the parameters through the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

- Service Provider SIP Connection—The connection pack bundles the provider XML for configuring the SIP trunks using other service providers. This ensures that the Cisco Unified Communications Manager Business Edition 3000 SIP trunk interworks with the service provider through SBEs (including third-party session border elements). The new parameter definitions are effective for the SIP trunks using service provider SIP Connection.

After the installation of a connection pack for a service provider, create SIP trunk using the service provider. The SIP parameters of the SIP trunk connection are preconfigured with the values in the connection pack automatically. When a SIP trunk connection is created, a minimal set of parameters, as

designed by the service provider, is editable through the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**PSTN Connections > Add PSTN Connection > Connection Settings > Configure Connection Settings**).

> ✎
>
> **Note**   The parameters in the SIP trunk connection pack are preconfigured based on the inter-operability tests between the Cisco Unified Communications Manager Business Edition 3000 SIP trunk and the service provider. Therefore, the SIP trunk that is created with the service provider connection type will be configured correctly to inter-operate with the service provider.

When you edit a SIP trunk connection, a minimal set of parameters, as designed by the service provider, is editable through the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**PSTN Connections > Add PSTN Connection > Connection Settings > Configure Connection Settings**). For more information, see Connection Type: SIP Trunk, page 31-24.

Versioning of the Connection Pack file

The naming convention of the connection pack is based on the Cisco Unified Communications Manager Business Edition 3000 version and the service provider version.

cm-conp-<Cisco Unified Communications Manager Business Edition 3000-version>-<serviceprovidername>-<version>.cop.sgn

```
For example:
    cm-conp-CP-8.6.2-foo-1.cop.sgn
    cm-conp-CP-8.6.2-foo-2.cop.sgn
```

Installing the Connection Pack File

You can upgrade the connection pack through the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. For instructions on how to import the connection pack file, see Chapter 38, "Upgrade Settings."

Upgrading the Cisco Unified Communications Manager Business Edition 3000 with the SIP trunk connection pack includes the following steps:

1. Download—Download the SIP trunk connection pack (.cop.sgn) file. You can burn the file to a DVD or save it on SFTP location for uploading. You can click Cancel to terminate the upgrade process on the progress bar.

> ✎
>
> **Note**   You can get the connection pack (.cop.sgn) file from your Service Provider or from www.cisco.com.

2. Validation—The Cisco Unified Communications Manager Business Edition 3000 validates the connection pack and the version based on the checksum before upgrade.

3. Installation—The connection pack is installed on the Cisco Unified Communications Manager Business Edition 3000. A progress bar depicts the status of the upgrade. You cannot cancel the upgrade process after the installation process is initiated.

The Cisco Unified Communications Manager Business Edition 3000 Administrative Interface notifies the status of installation as a progress bar.

If there are PSTN connections using the connection pack that is upgraded, the Administrative Interface notifies that the connection will be reset and all the calls associated with SIP trunk using that connection pack are dropped. The Cisco Unified Communications Manager Business Edition 3000 Administrative

Interface will request confirmation. If you choose to cancel, the installation process will be terminated and there will be no impact on the current connection and service provider. If you confirm to upgrade, the upgrade process begins.

After you upgrade the connection pack successfully, a confirmation message appears indicating that the connection pack was successfully installed. The connection pack upgrade process takes 2 to 7 minutes if you confirm to upgrade, and 2 to 4 minutes if you choose to cancel the upgrade.

The advance settings of the SIP trunk connections will be updated with the new set of parameters through the connection pack file. After the connection pack upgrade is complete, the SIP trunk connection will be reset and active calls will be dropped.

Upgrade failure handling

If the upgrade fails during validation (for example, if you have a corrupt .cop.sgn file) or installation (for example, if you have an invalid provider XML file), the upgrading process stops and the Administrative Interface displays a message to reboot the system. It is mandatory to reboot the system if this error is encountered. For more information, see Chapter Troubleshooting Issues, page 47-51.

The Cisco Unified Communications Manager Business Edition 3000 allows you to revert to the previous version of the connection pack. You can achieve this by upgrading the system using the connection pack of the desired version.

Impact during Cisco Unified Communications Manager Business Edition 3000 Upgrade

The SIP trunk connection will be reset while the Cisco Unified Communications Manager Business Edition 3000 is upgrading. All the active calls will be dropped.

The upgrading of the new Cisco Unified Communications Manager Business Edition 3000 may result in change of various parameters on the Administrative Interface. Some parameters can be removed and new parameters may be introduced. The user-configured SIP trunk parameter settings will be saved after upgrade also.

Significant Behavior of SIP Trunk

SIP trunk exhibits significant behavior while processing PSTN calls in Cisco Unified Communications Manager Business Edition 3000. The following sections detail the behavior of SIP trunk.

- Incoming 302—Moved Temporarily, page 1-29
- Incoming OOD REFER Message Handling, page 1-30
- Calling Party Transformation, page 1-30
- Connected Party Transformation, page 1-31

Incoming 302—Moved Temporarily

In "Redirect by Application" configuration, the SIP trunk passes the control to the Redirecting Application layer for handling the rerouting. The "Rerouting Calling Search Space" configured on SIP trunk is passed to allow further check on class of service and privilege of the calling user for redirection to the new contact. To set these parameters, refer Connection Type: SIP Trunk, page 31-24.

The Redirect by Application feature of the SIP trunk allows the Cisco Unified Communications Manager Business Edition 3000 to do the following:

- Apply digit analysis to the redirected contacts to ensure that the calls are routed correctly

- Prevent DOS attack by limiting the number of redirection (recursive redirection) that a service parameter can set

- Allow other features to be invoked while the redirection is taking place

Calls get redirected to a restricted phone number (such as an international number) due to handling redirection at the stack level to route the calls without blocking. This behavior occurs when the Redirect by Application check box is not checked in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

In case of multiple redirections before final redirection over SIP trunk, the maximum of two Redirection headers will be sent over SIP trunk: the original called party and last called party information.

Incoming OOD REFER Message Handling

Out-of-dialog REFER (OOD-R) enables remote applications to establish calls by sending a REFER message to Cisco Unified Communications Manager Business Edition 3000 without an initial INVITE. After the REFER is sent, the remainder of the call setup is independent of the application and the media stream does not flow through the application. The application using OOD-R triggers a call setup request that specifies the Referee address in the Request-URI and the Refer-Target in the Refer-To header.

Cisco Unified Communications Manager Business Edition 3000 handles the incoming REFER from a SIP trunk service provider.

Calling search spaces determine the partitions that calling devices can search when they attempt to complete a call. The out-of-dialog calling search space is used when a Cisco Unified Communications Manager refers a call (B) that is coming into SIP user (A) to a third party (C) when no involvement of SIP user (A) exists. In this case, the system uses the out-of-dialog calling search space of SIP user (A). The third party (C) is either an internal extension or an auto attendant client.

CUBE on Cisco ISR8xx, the session border element in the Cisco Standard Connection Pack file, does not support the OOD REFER inter-operability. The service provider cannot send OOD REFER through CUBE on Cisco ISR8xx through Cisco Unified Communications Manager Business Edition 3000.

Calling Party Transformation

The mid-call SIP messages, namely reINVITEs, UPDATE, or 200 OK sent from the calling party direction on SIP Trunk from Cisco Unified Communications Manager Business Edition 3000, carry the URI identity containing a number in user portion. This occurs during Hold/Resume, Transfer and so on, which result in transactions inside a SIP dialog.

By default, the Cisco Unified Communications Manager Business Edition 3000 sends configured extension number only, whereas the expected number for inter-operability with the SIP service provider is the DID or full number (e.g: Office code + Subscriber code).

The Cisco Unified Communications Manager Business Edition 3000 preconfigures the "Calling party Transformation" on SIP Trunk used to connect to the session border elements.

By provisioning the "Calling Party Transformations" feature for a SIP Trunk, the SIP dialogs established as part of outbound SIP Trunk calls always use the transformation for upsizing the number sent in P-Asserted ID or Remote Party ID headers of an outbound SIP message.

Note For the calling party transformation to function correctly, ensure that the External Caller ID is defined for the user. You can edit the **External Caller ID** on **Users/Phones > Users > Edit User > General** page.

Connected Party Transformation

The backward direction SIP messages, namely 183, 200 OK or mid-call UPDATE/INVITE messages from the connected party SIP trunk on Cisco Unified Communications Manager Business Edition 3000, carry the URI identity containing a number in user portion.

By default, the Cisco Unified Communications Manager Business Edition 3000 sends configured extension number only, while the expected number for inter-operability with the SIP service provider is the DID or full number (for example: Office code + Subscriber code).

To send the full number (DID and so on) on SIP trunk, the Cisco Unified Communications Manager Business Edition 3000 preconfigures the "Connected Party Transformation" on SIP trunk used to connect to the session border element. By provisioning the "Connected Party Transformation" feature for a SIP trunk, the SIP dialogs that are established as part of inbound SIP trunk calls always use the transformation for upsizing the number sent in PAI/RPID headers of an outbound SIP message.

> **Note** For the Connected Party Transformation to function correctly, ensure that the External Caller ID is defined for the user. You can edit the **External Caller ID** on **Users/Phones > Users > Edit User > General** page.

DHCP Usage for Acquiring IP Addresses

This document does not provide detailed information on DHCP; you should have a thorough understanding of DHCP before you use it with your Cisco Unified Communications Manager Business Edition 3000 system. Typically, the IT support staff for the company or the Internet service provider handles your DHCP setup. DHCP may be run on a computer or on a router. Before you implement DHCP with Cisco Unified Communications Manager Business Edition 3000, consider the following information:

- Use custom option 150 or option 66.
- You can use a DHCP server to issue IP addresses to the phones.

  If DHCP is enabled on a phone, which is the default for the phone, DHCP automatically assigns an IP address to the phone after you connect it to the network. The DHCP server directs the phone to the Cisco Unified Communications Manager Business Edition 3000 server, which serves a phone-specific configuration file to the phone.

  If DHCP is not enabled on a phone, you must manually assign an IP address to the phone and configure the IP address or the hostname of the Cisco Unified Communications Manager Business Edition 3000 server locally on the phone (configure it under the TFTP server option on the phone).

- The Cisco Unified Communications Manager Business Edition 3000 server must use a static IP address that you assign to it. If you use a DHCP server to issue IP addresses to computers and other network devices, make sure that the IP address for the Cisco Unified Communications Manager Business Edition 3000 server is not in the active range of IP addresses on the DHCP server. Make sure that you configure your DHCP server so that it does not hand out the IP address for the Cisco Unified Communications Manager Business Edition 3000 server to a different network device.

- Cisco strongly recommends that you assign a static IP address to the gateway. If you use a DHCP server to issue IP addresses to computers and other network devices, make sure that the IP address for the gateway is not in the active range of IP addresses on the DHCP server. Make sure that you configure your DHCP server so that it does not hand out the IP address for the gateway to a different network device.

If DHCP is enabled on a gateway, DHCP automatically assigns an IP address to the gateway after you connect it to the network.

- Before you configure your sites and DHCP, Cisco strongly recommends that you determine the number of sites that you need and determine how many phones will be located at each site. Configure your DHCP server so that it correctly distributes the IP addresses to the phones at the various sites.

For More Information

- Phone administration documentation that supports your phone model
- (for subnet and subnet mask information for sites)

IP Addressing

The Cisco MCS7890-C1 uses two external IP addresses. The main IP address is the published IP address on the MCS7890-C1 device. This is the system IP address of the Cisco Unified Communications Manager Business Edition 3000. This IP address is set by your administrator during the First Time Setup of Cisco Unified Communications Manager Business Edition 3000. You can configure this IP address using DHCP or static. The second IP address is the IP address of the media resource used for transcoding and conferencing. Cisco recommends that the media resource IP address be static and unique for MCS7890-C1.

> **Note**   For Cisco ISR2901 gateway, the media resource IP address is the same as the ISR2901 gateway IP address.

DNS and Hostname Resolution

This document does not provide detailed information on DNS. You should have a thorough understanding of DNS before you use it with your Cisco Unified Communications Manager Business Edition 3000 system. DNS is optional; you do not have to use a DNS server unless you plan to resolve hostnames for your Cisco Unified Communications Manager Business Edition 3000 server or gateway. If you include a hostname for the server or gateway on the Network or Gateway page and you must use DNS, make sure that you map the hostname(s) to the IP address(es) on the DNS server for both forward and reverse DNS resolution. Cisco recommends that you perform this task before you add or edit the hostname in the Cisco Unified Communications Manager Business Edition 3000 GUIs.

The current version of the Cisco Unified Communications Manager Business Edition 3000 does not require a DNS server; however, it is configured for future requirements such as SIP trunks.

> **Note**   Cisco recommends that you do not configure Cisco Unified Communications Manager Business Edition 3000 to use DNS.

SFTP Server

Cisco allows you to use any SFTP server product but recommends SFTP products that are certified with Cisco through the Cisco Technology Developer Partner program (CTDP). CTDP partners, such as GlobalSCAPE, certify their products with a specified release of your software. For information on which vendors have certified their products with your version of software, refer to the following URL:

http://www.cisco.com/pcgi-bin/ctdp/Search.pl

For information on using GlobalSCAPE with supported Cisco Unified Communications versions, refer to the following URL:

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 (refer to http://sshwindows.sourceforge.net/)
- Cygwin (refer to http://www.cygwin.com/)
- Titan (refer to http://www.titanftp.com/)

> ⚠ **Caution**   Cisco does not support using the SFTP product, freeFTPd, because of the file size limit on this SFTP product. For issues with third-party products that have not been certified through the CTDP process, contact the third-party vendor for support.

You can use a SFTP server to complete the following tasks:

- Upload the upgrade file from the SFTP server to the Cisco Unified Communications Manager Business Edition 3000 server before you perform an upgrade
- Store your backup file to a SFTP server, and if you must restore your data, restore the data from the SFTP server
- Export your configuration data to a SFTP server

Support for Computer Telephony Integration

Computer Telephony Integration (CTI) allows you to use computer-processing functions while making, receiving, and managing telephone calls. CTI can allow you to perform such tasks as retrieving customer information from a database on the basis of information that caller ID provides.

Cisco Unified Communications Manager Business Edition 3000 provides user support for CTI applications. Cisco Unified Communications Manager Business Edition 3000 automatically gives all users the ability to run CTI applications, including Cisco Jabber clients. Cisco Jabber clients are configured as phones in the Phone Configuration window. During the configuration process, the Cisco Jabber client must be given a unique name or identifier and the client must then be associated with a user.

During the Cisco Jabber client registration process, the Cisco Unified Communications Manager Business Edition 3000 TFTP service sends the following three XML files from Cisco Unified Communications Manager Business Edition 3000 to the Cisco Jabber client. These files contain the registration details, application dial rules, and directory lookup dial rules:

- Identifier.cnf.xml (file is named according to naming of Identifier field during configuration)
- AppDialRules.xml
- DirLookupDialRules.xml

Cisco Unified Communications Manager Business Edition 3000 listens on port 2748 for requests from CTI applications. All telephone calls that are placed through the CTI application must use the E.164 number format. The dial rules that are sent during registration convert the following phone number formats to an E.164 format of +{country code}{area code}{local number}, thereby allowing the CTI application to support the Click to Call phone feature.

- {area code}{local number} for example, 972 813 0000

- {country code}{area code}{local number} for example, 1 972 813 0000

- {national access code}{area code}{local number} for example, 1 972 813 0000

- {out of country code}{country code}{area code}{local number} for example, 011 8621 972 813 0000

Common Configuration Concepts in Cisco Unified Communications Manager Business Edition 3000

This section describes common configuration concepts in Cisco Unified Communications Manager Business Edition 3000. In addition, this section describes considerations that you should review before you configure the items:

- Network Settings, page 1-34

- Dial Plans, page 1-35

- Sites, page 1-36

- Usage Profiles, page 1-39

- Users, Departments, Phones, and Lines, page 1-42

- Example of Typical Deployment Model, page 1-47

Network Settings

Your network settings include the IPv4 address or hostname of the server, the subnet mask and default gateway for the server, the primary and secondary DNS server (if you use DNS), the link speed for the Network Interface Controller (NIC) on the server, and the Message Transmission Units (Maximum Transmission Units, MTU) for the network.

- Through the Cisco-provided .xls data configuration file in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (for initial deployment)

- On the Network page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (if you are not using the Cisco-provided .xls data configuration file during initial deployment)

- Under **System Settings > Network** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (after initial deployment)

- Through the configure.xml file (used primarily for troubleshooting when you cannot access the GUIs)

For More Information

- Working with the Cisco-Provided .xls Data Configuration File, page 3-1

- Network Settings, page 27-1 (for the Network page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard and Cisco Unified Communications Manager Business Edition 3000 Administrative Interface)
- Using the Cisco Network Configuration USB Key, page 6-4

Dial Plans

Your Cisco Unified Communications Manager Business Edition 3000 Dial Plan allows you to allocate phone numbers and translation rules for your system. You can choose the country where you are installing the Cisco Unified Communications Manager Business Edition 3000. The Cisco Unified Communications Manager Business Edition 3000 installs a Dial Plan based on the regulations in your country.

Cisco Unified Communications Manager Business Edition 3000 supports a local gateway in every site and multiple gateways in any site; therefore the installation of Routing Dial Plan is required.

For load balancing and backup purposes, the routing is set up such that if a local gateway is not available, the calls can be routed to the gateway on the other site.

You can install or update the Dial Plan during the following instances:

- First Time Setup
- Upgrade
- Country Pack installation
- Site creation, update and deletion

Information about Dial Plans is available in the following files:

- Numbering Plan file—Specifies information about Dial Plan tags.
- Cisco-provided .xml file—Specifies the metadata information to set up a Dial Plan for your country. It includes XML elements for Route Filters, Route Filter Members, Translation Patterns, Route Patterns, and Called and Calling Party Transformation Patterns.
- Route Filters .xsd—Specifies XML definition.

For the default countries, the United States, India, and Canada, the dial plans are available with the installation file. For all other countries, you can install Dial Plans using the Country Pack.

For more information, see Country/Locale Settings, page 15-1.

Phone Numbers

For your dial plan, you specify the main business number, the area codes, the length of the extension, the extension ranges, and dialing prefixes for the outside dialing code (access code), operator dialing code, and the feature codes, which a user presses on the phone for certain features, including Meet-Me Conferences, call pickup, and so on.

After you set up your default extension range, you cannot change it. You can change other settings for your dial plan in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

The extension length and range that you set in the dial plan impact the extensions that you can assign to your users, departments, and pilot extensions for your hunt lists and voicemail and auto attendant. You cannot add an extension to a user or department that does not belong in the extension range. (Pilot extensions for hunt lists must also be in the extension range, but pilot extensions do not get assigned to users or departments.)

Your system can support internal, local, long distance, and international calls. Toll-free calls are also supported. You can set the level of access for a site on the Sites page; you can set the level of access authorized for the user in the Usage Profile. When a user places a call from a phone in a particular site, the call gets connected if the phone at that site is allowed to make that level of call and if the user that owns the line is also authorized to make that level of call.

Translation Rules

Translation rules allow Cisco Unified Communications Manager Business Edition 3000 to manipulate an incoming phone number that is part of your system and transform it to an extension before routing the call. The following list provides examples of when you would configure translation rules:

- To translate the Meet-Me conference number to an extension
- To translate a toll-free number, such as an 800 number, to an extension
- To translate an extension to a pilot extension in a hunt list

For More Information

- Working with the Cisco-Provided .xls Data Configuration File, page 3-1
- Dial Plan Settings, page 22-1 (for the Dial Plan page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard and Cisco Unified Communications Manager Business Edition 3000 Administrative Interface)
- Checklists for Users, Departments, Lines, and Phones, page 8-1

Sites

Cisco Unified Communications Manager Business Edition 3000 supports PSTN calls from every site through a local Gateway or a gateway located in other sites.

Your Cisco Unified Communications Manager Business Edition 3000 system may contain multiple sites, which are geographical locations that define where the users are working.

- Central Site—The central site contains the Cisco Unified Communications Manager Business Edition 3000 server and the gateway that allows access to the PSTN. In most cases, the central site is the location where the majority of users work; in most cases, the company headquarters is the central site. You can have only one central site, and you cannot delete the central site.
- Remote Sites—Remote sites are branch offices that work with the central site; a dedicated WAN link or Internet connection must exist between the remote and central sites. You can have up to nine remote sites.
- Teleworker Site—The teleworker site is for workers who do not work only at the central site or branch offices; these employees (users) use VPN connections to connect to the central site. A router is not required to contact the central site because their Internet connection provides access to the central site. You can have only one teleworker site.

When you configure a site, you must specify the maximum bandwidth that is required between sites, the maximum bandwidth that is required for internal calls that take place within the site, calling privileges for the site as a whole, and so on. You can configure the bandwidth between the remote site and the central site.

You can configure a site through the following methods:

- Through the Cisco-provided .xls data configuration file in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (for initial deployment)

- On the Sites page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (if you are not using the Cisco-provided .xls data configuration file during initial deployment)

- Under **Connections > Sites** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (after initial deployment)

A phone gets associated with a site through the subnet and subnet masks that are configured on the Sites page. If you are using DHCP to assign IP addresses to the phones, the values that you enter for the subnet and subnet mask depend on your DHCP configuration. In this case, the subnet and subnet mask translate to a range of IP addresses that get distributed to the phones that are associated with the site.

Considerations for Configuring Sites

Before you configure your sites and DHCP, Cisco strongly recommends that you determine the number of sites that you need and how many phones will be located at each site. Configure your DHCP server so that it correctly distributes the IP addresses to the phones at the various sites.

If you do not configure the subnet and subnet masks for any site, the phones automatically get assigned to the central site.

If no teleworker site exists and Cisco Unified Communications Manager Business Edition 3000 cannot determine where the phone is located, Cisco Unified Communications Manager Business Edition 3000 automatically places the phone in the central site.

By default, subnet address 192.168.1.0 with a subnet mask of 24 are displayed on the central site page. You may update this information if it does not apply to your setup.

If you enable Reach Me Anywhere in the usage profile, the call privileges for the Reach Me Anywhere call are always based on the highest calling privileges that are selected for the central site.

To associate phones with the remote sites, you must configure the subnet and subnet masks on the Sites pages for the remote sites.

If you have a teleworker site, you must configure the subnet and subnet masks for the central site and all remote sites. For the teleworker site, you cannot specify the subnet and subnet masks.

You cannot enter the same subnet and subnet mask for multiple sites. In addition, Cisco recommends that your subnet and subnet masks do not overlap. If you configure multiple subnet and subnet masks on the Sites page, Cisco Unified Communications Manager Business Edition 3000 selects the subnet and subnet mask that is most clearly defined and associates the phone with that site.

It is not uncommon to disallow emergency calls for the teleworker site. If you disallow emergency calls for the teleworker site, make sure that the users understand that they cannot place emergency calls from their work phone that is outside of the office.

Device Mobility

When you do not configure any remote site in the Cisco Unified Communications Manager Business Edition 3000, the endpoints will register with the central site even when the endpoint is situated in a different subnet. The gateway configured in a different subnet will not register with the central site automatically. You can configure the gateway manually in the central site.

Routing Calls Through Gateways

The calls are routed through the Cisco Unified Communications Manager Business Edition 3000 sites based on the PSTN access settings at **Connections > Sites > Add Site > PSTN Access**. Setting the gateway usage allows you to control the routing of PSTN calls through various gateways.

You can select certain local gateways or all the gateways to route the PSTN calls as required. You can also custom select the gateways. The PSTN calls are routed in a top-down order among the gateway groups.

"All Gateways" feature is available in countries that allow toll bypass. When All Gateways is selected, the order of the gateways for routing the PSTN calls is as follows:

1. Local Site gateways

2. All nonlocal gateways of the same type ordered based on the Site name

3. Gateway within a site

    a. SIP trunk

    b. E1/T1 PRI

    c. T1 CAS

    d. FXO

4. Multiple gateways of the same type sorted based on Connection Description

When Local Gateways is selected, the order of the gateways for routing the PSTN calls is as follows:

1. SIP trunk

2. E1/T1 PRI

3. T1 CAS

4. FXO

When Custom selection is selected, the options allows you to select and order the gateway connection from the complete gateway list in Cisco Unified Communications Manager Business Edition 3000.

Note   Ensure that you understand the regulations of your country before you configure call routing. Configuring call routing incorrectly may violate the toll bypass rules in your country.

The list of the gateways selected is sorted in the following order of precedence:

1. Site

2. Connection

3. Description

Note   The connection and the description that correspond to a gateway are input in the PSTN Connection flow while provisioning PSTN Connections.

When a site does not have access to any PSTN gateway, the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface displays an error.

Error Message   `This site does not have access to any PSTN gateway. Phones on this site will be unable to make/receive PSTN calls.`

Recommended Action   Ensure that you select the gateway correctly.

Logical Partitioning

The Logical Partitioning feature is required for countries with telecom restrictions, such as India.

Logical Partitioning prevents toll bypass of the PSTN calls through the Cisco Unified Communications Manager Business Edition 3000 for countries that adhere to telecom regulations. Logical Partitioning is enabled in the Country Pack for countries that have regulations.

The Logical Partitioning feature is not available for countries that do not have regulations. Currently, the Logical Partitioning feature is enabled for India.

You can select one of the following features for Logical Partitioning:

- Default—Allows you to enable default policies such that each site can route calls using the local gateway. This is a basic requirement for deployments and is provided by default.

- Custom—Allows you to choose the required gateways such that multiple sites located in the same trunk area can share a common gateway. This allows provisioning of a Policy matrix between any sites.

For More Information

Usage Profiles

A usage profile allows you to configure most of the user settings for a phone in one place. You can edit an existing usage profile, duplicate an existing usage profile to create a new profile, or add an entirely new usage profile. Each usage profile has a unique name. After you configure your usage profiles, you can assign them to users or to departments, so that the settings in the usage profile apply to the phones that belong to an individual user or to a department.

In the usage profile, you can configure calling privileges for users, phone features, such as barge, Cisco Extension Mobility, and so on, phone hardware functionality, phone applications that may display on the phone, and the phone button template, which controls the order of the buttons and the feature buttons that display on the phone.

You can configure a usage profile through the following methods:

- Through the Cisco-provided .xls data configuration file in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (for initial deployment)

- On the Usage Profile page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (if you are not using the Cisco-provided .xls data configuration file during initial deployment)

- Under **Users/Phones > Usage Profiles** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (after initial deployment)

The usage profiles are not phone model specific; all settings that are available in the usage profile do not support all phone models. Before you add or edit an existing usage profile and assign it to a user, determine whether the phone model that is assigned to the user supports the features and functionality that is available in the usage profile. If you configure a setting that is not supported by the phone, the phone ignores the value in the configuration file, and the user cannot use the feature or functionality on the phone.

Note   Cisco Unified Communications Manager Business Edition 3000 supports a maximum of 30 usage profiles.

The usage profiles in Table 1-3 come with your system by default; that is, they display on the Usage Profile page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (and in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, unless you delete them from the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard). You can delete these usage profiles, you can edit these profiles, or you assign them to your users without modification.

Table 1-3   Default Usage Profiles

Type	Considerations
Standard	Consider applying this usage profile to most of your users. If you use the default values in the usage profile: • The user can place and receive local and internal calls; if the site where the phone resides allows these types of calls. • The user can make emergency calls to the local center that handles emergencies for the municipality; if the site where the phone resides allows emergency calls. • The user can use barge if the phone supports barge; barge allows a user to interrupt a call without permission from other participants on the call. • The user can use call pickup if the phone supports call pickup; call pickup allows the user to pick up calls for another user. • The user can create speed dials if the phone has 3 or more buttons on it. • The user can use the speakerphone and a headset if the phone supports that functionality.
Manager	Consider applying this usage profile to the managers in the company. If you use the default values in the usage profile: • The user can place and receive all types of calls, including long distance and international calls; if the site where the phone resides allows these types of calls. • The user can make emergency calls to the local center that handles emergencies for the municipality; if the site where the phone resides allows emergency calls. • The user can use barge, call pickup, and call park if the phone supports these features. Call park allows a user to park a call on one phone and then pick up the call on another phone. • The user can create speed dials if the phone has 3 or more buttons on it. • The user can use the speakerphone and a headset if the phone supports that functionality.

Table 1-3   Default Usage Profiles (continued)

Type	Considerations
Assistants	Consider applying this usage profile to the assistants that support the managers in the company. If you use the default values in the usage profile: • The user can place and receive internal, local, toll free, and long distance calls; if the site where the phone resides allows these types of calls. • The user can make emergency calls to the local center that handles emergencies for the municipality; if the site where the phone resides allows emergency calls. • The user can use barge and call pickup if the phone supports these features. • The user can create speed dials if the phone has 3 or more buttons on it. • The user can use the speakerphone and a headset if the phone supports that functionality.
Power	Consider applying this usage profile to the users that assist with administering the system; for example, to the IT support staff. If you use the default values in the usage profile: • The user can place and receive internal, local, toll free, and long distance calls; if the site where the phone resides allows these types of calls. • The user can make emergency calls to the local center that handles emergencies for the municipality; if the site where the phone resides allows emergency calls. • The user can use barge and call pickup if the phone supports these features. • The user can create speed dials if the phone has 3 or more buttons on it. • The user can use the speakerphone and a headset if the phone supports that functionality.
Common Area	Consider applying this usage profile to departments, which are for phones that are used in public spaces, such as break rooms, and so on. If you use the default values in the usage profile: • On the public space phone, the user that can place and receive internal calls. • The user can make emergency calls to the local center that handles emergencies for the municipality; if the site where the phone resides allows emergency calling. • On the public space phone, the user can use barge if the phone supports this feature. • As the administrator, you can add speed dials if the public space phone has 3 or more buttons on it. • On the public space phone, the user can use the speakerphone and a headset if the phone supports that functionality.

For More Information

• Working with the Cisco-Provided .xls Data Configuration File, page 3-1

• Usage Profiles Settings, page 40-7 (for the Usage Profile page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard and Cisco Unified Communications Manager Business Edition 3000 Administrative Interface)

• Checklists for Users, Departments, Lines, and Phones, page 8-1

Users, Departments, Phones, and Lines

Phones, users, and lines are closely related in Cisco Unified Communications Manager Business Edition 3000. A user, which is an employee from the company, uses the usage profile on a phone that is supported in Cisco Unified Communications Manager Business Edition 3000. Because phones and users are closely related, you cannot configure a phone without first configuring a user or department that has an extension (line) from the dial plan assigned to it.

In the Cisco Unified Communications Manager Business Edition 3000 system, a user becomes an owner of a phone when you assign the user extension to line 1 on the phone. If the user is an owner of the phone, the phone uses the usage profile that is assigned to the user.

Tip A department is a special kind of user that is reserved for public-space phones; this user is reserved for phones in cafeterias, lobbies, break rooms, and so on. A public-space phone cannot support Reach Me Anywhere. You do not configure passwords or phone PINs for departments, unlike users (**Users/Phones > Users**).

Example of How User or Department Ownership Works for a Phone

Step 1 If you have not already done so, add the user or department configuration; for example, add the user by selecting **Users/Phones > Users (or Department)** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

- When you add the user or department, you must assign a usage profile that you want to be available to the phone.

- When you add the user or department, assign an extension to the user or department, based on the dial plan that is set up for your system.

Step 2 Add the phone and assign the extension to line 1 on the phone. The user or department becomes the owner of the phone, and a user can use the features and functionality from the usage profile on the phone if the phone supports the functionality.

Tip You can create a shared line between an IP phone and an analog phone using the same user extension.

Note Refer to
http://www.cisco.com/en/US/docs/routers/access/vg224/software/configuration/guide/scgvoip.html for information on VG224 configuration.

On the User or Department page, you create lines for the user or department based on the dial plan that you set up; for example, if your dial plan is set up for 4-digit dialing with an extension range of 2000-2999, you can assign an extension such as 2555 to the user or department. You can set up to 6 extensions in a prioritized list for each user or department. The usage profile that you assign to the user or department applies to all extensions that are in the prioritized list.

You assign user extensions (lines) to the phone on the Phone page. You can set up to 6 lines as a prioritized list on the Phone page, even if the phone does not support 6 lines. For each line, you can define Call Forward All and External Caller ID.

The phone button template that is configured in the usage profile determines the order of line buttons and the types of functionality that displays next to the line buttons on the phone; for example, for all lines except line 1, which must be a line because of user-phone ownership, you can designate a line as a speed dial, line, or feature button (Mobility, Meet-Me Conference, and so on). When the phone button template that is configured in the usage profile designates the buttons as lines, the system orders the lines that are assigned on the Phone page based on the prioritized list, with the first line being designated for line 1, the second line in the list being used for the next button on the phone that is designated as line 2, and so on. In the Usage Profile, you must establish the purpose for 12 line buttons on the phone, even when the phone does not support 12 buttons.

The users can create up to 12 speed dials in a prioritized list in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface, even when the phone does not support 12 speed dials.

Significant Behavior of SIP Trunk

SIP trunk exhibits significant behavior while processing PSTN calls in Cisco Unified Communications Manager Business Edition 3000.

The SIP trunk supports the following features:

- Basic Outgoing/Incoming Call
- Early and Delayed Offer
- PRACK
- Session Timers
- PAI and RPID for Identity
- DTMF using RFC 2833, KPML, and Unsolicited Notify
- Hold/Resume, Transfer, Conference, Forwarding
- Diversion Header
- MWI
- Options Ping

The following sections details the behavior of SIP trunk specific to Cisco Unified Communications Manager Business Edition 3000.

Incoming 302—Moved Temporarily

The SIP service provider sends 302 message to the Cisco Unified Communications Manager Business Edition 3000 to reach to SIP Uniform Resource Identifier (URI) as specified in the Contact header field. By default, the SIP trunk will use the "Redirect by Application" feature to reroute the PSTN calls. The SIP trunk checks the class of service and the privilege of the calling user before redirecting the calls.

In a SIP environment, the two possible ways of forwarding or redirecting a call are sending SIP "302 Moved Temporarily" with one or more "Contact:" headers as response to an INVITE or are sending a new INVITE to the new destination.

Cisco Unified Communications Manager Business Edition 3000 sends an INVITE to the new destination upon reception of "302 Moved temporarily" but it cannot generate such a response. The "302 Moved temporarily" response is received when "call forward" is enabled on a SIP endpoint.

The service provider can be configured to react in different ways when a SIP call is forwarded or redirected by one of the call legs. Most often, a SIP peer sends a SIP response "302 Moved temporarily" with the new destination URI appearing in the "Contact:" header of the message.

Similar to Call Transfer Supplementary service, the service provider can be configured to pass along the "302 Moved Temporarily" to the originating call leg or to react to it and send a new INVITE on behalf of the forwarded (FWED) party.

In "Redirect by Application" configuration, the SIP trunk passes the control to Redirecting Application layer for handling the rerouting. The "Rerouting Calling Search Space" configured on SIP trunk is passed to allow further check on class of service and privilege of the calling user for redirection to the new Contact. To set these parameters, refer to Connection Type: SIP Trunk, page 31-24.

The Redirect by Application feature of the SIP trunk allows the Cisco Unified Communications Manager Business Edition 3000 to do the following:

- Apply digit analysis to the redirected contacts to ensure that the calls are routed correctly
- Prevent DOS attack by limiting the number of redirection (recursive redirection) that a service parameter can set
- Allow other features to be invoked while the redirection is taking place

Calls get redirected to a restricted phone number (such as an international number) due to handling redirection at the stack level to route the calls without blocking. This behavior occurs when the Redirect by Application check box is not checked in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Note   In case of multiple redirections before final redirection over SIP trunk, the maximum of two Redirection headers will be sent over SIP trunk, that is the original called party and last called party information.

Incoming OOD REFER Message Handling

Out-of-dialog REFER (OOD-R) enables remote applications to establish calls by sending a REFER message to Cisco Unified Communications Manager Business Edition 3000 without an initial INVITE. After the REFER is sent, the remainder of the call setup is independent of the application and the media stream does not flow through the application. The application using OOD-R triggers a call setup request that specifies the Referee address in the Request-URI and the Refer-Target in the Refer-To header.

Cisco Unified Communications Manager Business Edition 3000 handles the incoming REFER from a SIP trunk service provider.

Calling search spaces determine the partitions that calling devices can search when they attempt to complete a call. The out-of-dialog calling search space is used when a Cisco Unified Communications Manager refers a call (B) that is coming into SIP user (A) to a third party (C) when no involvement of SIP user (A) exists. In this case, the system uses the out-of-dialog calling search space of SIP user (A). The third party (C) is either an internal extension or an auto attendant client.

CUBE on Cisco ISR8xx, the session border element in the Cisco Unified Communications Manager Business Edition 3000 SIP trunking solution, does not support the OOD REFER inter-operability. The service provider cannot send OOD REFER through CUBE on Cisco ISR8xx through Cisco Unified Communications Manager Business Edition 3000.

Calling Party Transformation

The mid-call SIP messages, namely reINVITEs, UPDATE or 200 OK sent from the calling party direction on SIP Trunk from Cisco Unified Communications Manager Business Edition 3000, carry the URI identity containing a number in user portion. This occurs during Hold/Resume, Transfer and so on, which result in transactions inside a SIP dialog.

By default, the Cisco Unified Communications Manager Business Edition 3000 sends configured extension number only, while expected number for inter-operability with the SIP service provider is the DID or full number (for example: Office code + Subscriber code).

The Cisco Unified Communications Manager Business Edition 3000 preconfigures the "Calling party Transformation" on SIP Trunk used to connect to the session border elements.

By provisioning the "Calling Party Transformations" feature for a SIP Trunk, the SIP dialogs established as part of outbound SIP Trunk calls always use the transformation for upsizing the number sent in P-Asserted ID or Remote Party ID headers of an outbound SIP message.

Note   For the calling party transformation to function correctly, ensure that the External Caller ID is defined for the user. You can edit the **External Caller ID** on **Users/Phones > Users > Edit User > General** page.

Connected Party Transformation

The backward direction SIP messages namely 183, 200 Ok or mid-call UPDATE/INVITE messages from the connected party SIP trunk on Cisco Unified Communications Manager Business Edition 3000 carry the URI identity containing a number in user portion.

By default, the Cisco Unified Communications Manager Business Edition 3000 sends configured extension number only, while the expected number for inter-operability with the SIP service provider is the DID or full number (for example: Office code + Subscriber code).

To send the full number (DID and so on) on SIP trunk, the Cisco Unified Communications Manager Business Edition 3000 preconfigures the "Connected Party Transformation" on SIP trunk used to connect to the session border element. By provisioning the "Connected Party Transformation" feature for a SIP trunk, the SIP dialogs established as part of inbound SIP trunk calls always use the transformation for upsizing the number sent in PAI/RPID headers of an outbound SIP message.

Note   For the connected party transformation to function correctly, ensure that the External Caller ID is defined for the user. You can edit the **External Caller ID** on **Users/Phones > Users > Edit User > General** page.

Attendant Group

The Attendant Group page allows you to add or remove users who will be associated with all the phones in the phone list of Cisco Unified Communications Manager Business Edition 3000 (choose **Users/Phones > Attendant Group**). You can add until ten users to the Attendant Group. The system displays an error message when you click to add more than ten users.

Note   You must have administrator account, browser access, and Internet access to add or remove users.

Note Attendant Group requires an additional enhanced user license for each group member. If the number of licenses is insufficient, a new user will not get associated to the Attendant Group.

Attendant Group has an Available list of users, which displays all the users in the Cisco Unified Communications Manager Business Edition 3000 who are not associated with Attendant Group, and a Selected list, which displays all users who are associated to Attendant Group. You can move users from Available to Selected to associate a user to Attendant Group.

After adding a user to the Selected list you must save the user in the Selected list. You can also remove users from the Selected list. The users removed from the Selected list are moved to the Available list. For more information, see (Setting Up Attendant Group, page 8-13 and Attendant Group Settings, page 11-1).

Hunt Lists

A hunt list consists of a group of extensions that can answer calls. You set up hunt lists for the purpose of distributing calls amongst the users that belong to the group. For example, if the company does not have a receptionist and several users must answer calls, consider setting up a hunt list to ensure that calls are evenly distributed amongst the users that belong to the hunt list. For example, if several administrative assistants must share the call load for several managers, consider setting up a hunt list to ensure that all calls are answered quickly. You configure hunt lists on the Hunt Lists page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. (Select **Users/Phones > Hunt Lists**.) You can create as many hunt lists as you want.

Extensions in a hunt list can belong to users or departments. You can assign any user or department extension to a hunt list, but only those extensions that are assigned to phones can actually answer the calls. An extension may belong to more than one hunt list.

Pilot extensions for hunt lists must be in the extension range(s), but pilot extensions do not get assigned to users or departments.

For the members (extensions) that belong to the group, you can select one of the following distribution methods:

Tip An idle member is not servicing any calls. An available member is on an active call but is available to accept a new call. A busy member cannot accept calls.

- Top Down—Cisco Unified Communications Manager Business Edition 3000 distributes a call to idle or available members (extensions) starting from the first idle or available member of a hunt list to the last idle or available member.
- Circular—Cisco Unified Communications Manager Business Edition 3000 distributes a call to idle or available members starting from the (n+1)th member of a hunt list, where the nth member is the member to which Cisco Unified Communications Manager Business Edition 3000 most recently extended a call. If the nth member is the last member of a hunt list, Cisco Unified Communications Manager Business Edition 3000 distributes a call starting from the top of the hunt list.
- Longest Idle Time—Cisco Unified Communications Manager Business Edition 3000 only distributes a call to idle members, starting from the longest idle member to the least idle member of a hunt list.
- Broadcast—Cisco Unified Communications Manager Business Edition 3000 distributes a call to all idle or available members of a hunt list simultaneously.

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Caution   Do not put extensions that are shared lines in a hunt list that uses the Broadcast distribution algorithm. Cisco Unified Communications Manager Business Edition 3000 cannot display shared lines correctly on the phone if the extensions are members of a hunt list that uses the Broadcast distribution algorithm.

For More Information

Setting Up the System So that Incoming Calls Reach the Auto Attendant if the Operator is Not Available, page 8-15

Example of Typical Deployment Model

Figure 1-12 shows an example of a typical deployment model that includes the central site, two remote sites, and the teleworker site. The central site includes the gateway, server, several routers, a Cisco VG224 Analog Phone Gateway, and IP and analog phones. The remote sites include phones and routers. For more information on the example, see the following:

- Figure 1-12
- Table 1-4
- Central Site (Example)
- Teleworker Site (Example)
- Remote Site 1 (Example)
- Remote Site 2 (Example)

Figure 1-12   *Example of a Typical Deployment Model*
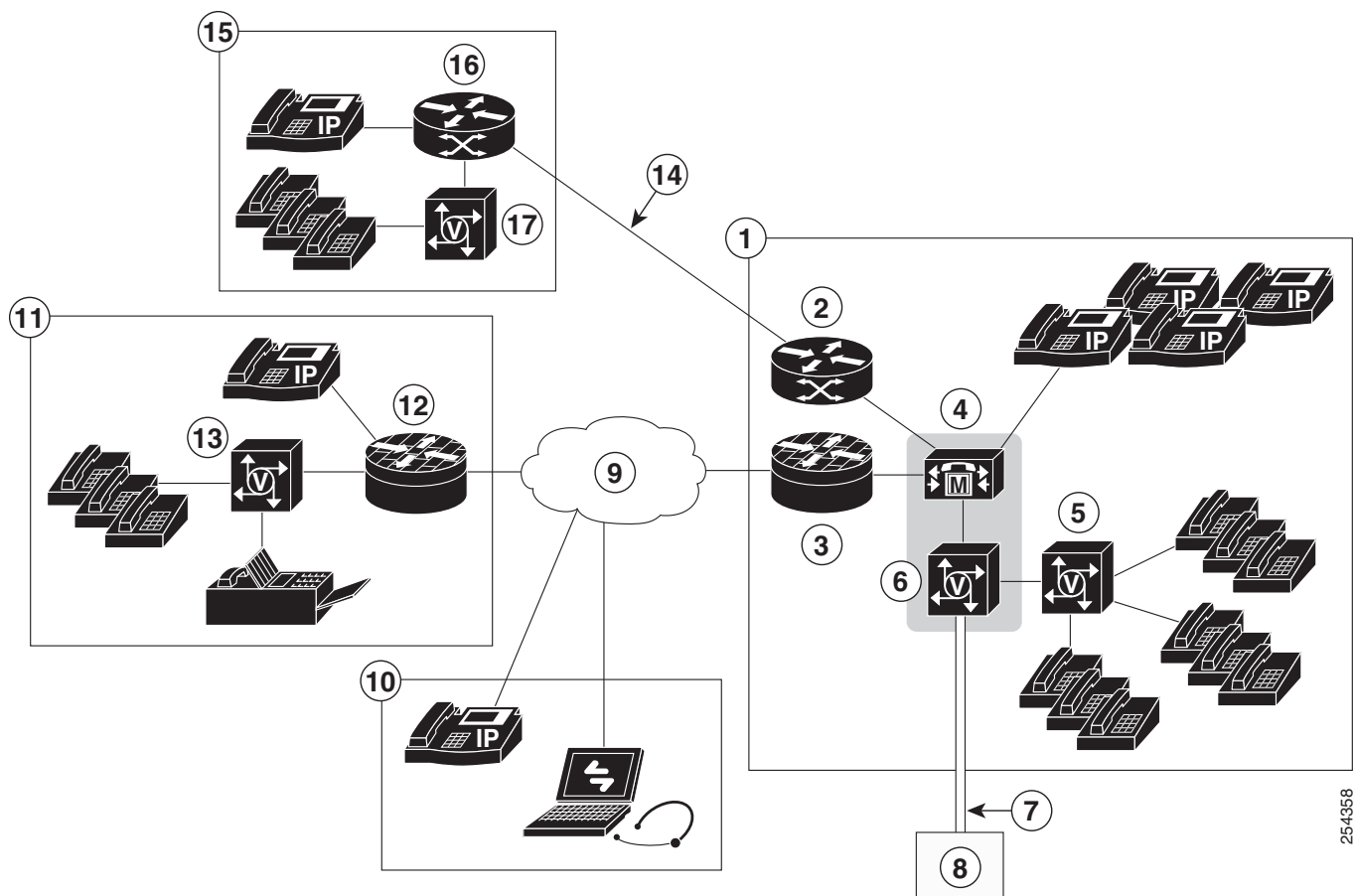
Table 1-4   *Components of a Typical Deployment Model*

Number	Description
1	Central Site
2	Router
3	Router with VPN
4	Cisco Unified Communications Manager Business Edition 3000 Server
5	Cisco VG224 Analog Phone Gateway
6	Cisco 2901 Integrated Services Router (ISR) (Gateway)
7	Dual E1/TI connection
8	Service Provider (Telecommunications Company)
9	Internet
10	Teleworkers Site
11	Remote Site 1
12	Router with VPN
13	Cisco VG224 Analog Phone Gateway
14	Dedicated WAN link

Table 1-4 *Components of a Typical Deployment Model (continued)*

Number	Description
15	Remote Site 2
16	Router
17	Cisco VG224 Analog Phone Gateway

Central Site (Example)

Figure 1-12 illustrates that the central site is where your server, gateway, and the majority of your phones/users are located. To use fax or analog phones at the central site, the Cisco VG224 Analog Phone Gateway is set up specifically for the central site. The gateway allows access to the PSTN through a dual T1/E1 connection that is provided by the service provider (telecommunications company).

Although not included in Figure 1-12, a switch exists between the server and the Cisco Unified IP Phones.

Teleworker Site (Example)

Figure 1-12 illustrates that the teleworker site has phones and personal computers that connect to the central site through the Internet. A router that supports VPN connects the teleworker site to the central site.

Tip Quality of service (QoS) may not be available for the teleworker site.

Remote Site 1 (Example)

Figure 1-12 illustrates that remote site 1 connects to the central site through a router that supports VPN (and connects to the Internet). Analog phones and fax are used at remote site 1, so the Cisco VG224 Analog Phone Gateway is set up for these phones and functionality specifically for this site. Fewer phones are included in remote site 1 than at the central site.

Remote Site 2 (Example)

Figure 1-12 illustrates that remote site 2 connects to the central site through a dedicated WAN link. Analog phones are used at remote site 2, so the Cisco VG224 Analog Phone Gateway is set up to support the analog phones at this site.

Frequently Asked Questions

This chapter contains a list of frequently asked questions (FAQs) and the answers to those questions. Use this chapter in conjunction with other chapters in this) guide.

- I cannot access the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard. Why not?, page 2-2
- How do I sign in to the interfaces?, page 2-2
- What browsers are supported?, page 2-5
- Does this product provide accessibility?, page 2-5
- What kind of security is provided?, page 2-6
- How do I view the version of software?, page 2-6
- How do I access online help?, page 2-7
- What is a country pack, and where do I install it?, page 2-7
- What is a locale?, page 2-7
- How do I update the administrator username and password?, page 2-8
- What is a strong password?, page 2-9
- Why do I need licenses? How do I install and view the licenses on my system?, page 2-9
- How do I find, add, update, delete, and copy configuration?, page 2-9
- When can I not perform configuration tasks?, page 2-13
- How do I configure my gateway?, page 2-13
- What is the Post-Setup Wizard?, page 2-14
- How do I upgrade software?, page 2-14
- How do I perform a backup of data?, page 2-15
- When would I need to restore my data?, page 2-15
- What are call detail records (CDRs), and how do I export them?, page 2-15
- Can I export my configuration? Where can I import it?, page 2-16
- When is the server going to automatically restart? How do I manually restart the server?, page 2-17
- How do I restart the phones?, page 2-18
- How do I know whether the phone is registered?, page 2-18
- How do I log out users from Cisco Extension Mobility-enabled phones?, page 2-18

Chapter 2   Frequently Asked Questions

I cannot access the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard. Why not?

- How do I configure the system so that the call goes to the operator or to the auto attendant?, page 2-18
- May I use auto attendant without using voicemail?, page 2-19
- What is Cisco Web Dialer?, page 2-19
- How does a user update the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface?, page 2-19
- How do I monitor and troubleshoot?, page 2-20
- MCS 7890-C1 will not power up. Why not?, page 2-20
- How do I connect or disconnect a USB DVD drive to an MCS 7890-C1?, page 2-21
- Is there a recovery disk available for MCS 7890-C1?, page 2-22
- How do I recover the system if I have lost the admin password?, page 2-22
- How do I configure a Cisco Jabber client?, page 2-22

I cannot access the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard. Why not?

Verify that you have set up the network correctly. See the following sections:

- Using a Cable to Set Up Server Access to the Network, page 6-3
- Using the Cisco Network Configuration USB Key, page 6-4

Tip Your server comes preinstalled with the default IP address of 192.168.1.250. Perform one of the procedures in the preceding bullets so that the server is recognized on the network.

How do I sign in to the interfaces?

To sign in to the interfaces, see one of the following sections:

- Signing in to the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, page 2-3
- Signing in to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, page 2-4
- Signing in to the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface, page 2-4

Tip Cisco Unified Communications Manager Business Edition 3000 uses HTTPS, so you must accept the certificate for the server during the login process before you can access the GUI. If you need assistance with accepting the certificate for the server, review your browser documentation.

Tip   To sign off the interfaces, click **Logout** that displays in the upper right corner of the page. The page redisplays with the sign-in fields.

Signing in to the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard

Perform the following procedure to sign in to the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard.

Procedure

Step 1   Before you sign in to the GUI for the first time, make sure that the server is recognized on your network.

Step 2   Start a supported web browser. For a list of supported web browsers, see the "What browsers are supported?" section on page 2-5.

Step 3   In the address bar of the web browser, enter either of the following case-sensitive URLs:

- https://*<IP address of the server>*:8443/cucmadmin/dayonelaunch
- https:// *<IP address of the server>*:8443

Note   The IP address that you enter depends on which procedure you performed to set up server access to the network. If you used a cable to set up server access to the network, you may enter the default IP address of the server. If you used the configure.xml file to set up server access to the network, you enter the IP address that you assigned in the configure.xml file.

Step 4   If the **Cisco Unified Communications Manager Business Edition 3000** link displays, click it.

Step 5   Enter your username and password; then, click **Sign In**.

Tip   The default username is **admin**. The default password is **BE-3000**.

The Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard displays.

You can save and exit Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard at any time, even if the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard is not complete. After you log in again, the system remembers where in the process you were when you logged off and continues with that step.

Tip   After you complete the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, you cannot access it again. After your initial deployment, you can update the majority of your settings and perform maintenance-related tasks in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. (Some settings cannot be changed, such as the country, locale, and default extension range.)

Signing in to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

Perform the following procedure to sign in to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Procedure

Step 1   Start a supported web browser. For a list of supported browsers, see the "What browsers are supported?" section on page 2-5.

> **Tip** You cannot sign in to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface until after you have completed the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard.

Step 2   Make sure that you have set your browser to the same language that was selected in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard.

Step 3   In the address bar of the web browser, enter one of the following case-sensitive URLs:

- https://<IP address or hostname of the Cisco Unified Communications Manager Business Edition 3000 server>:8443/cucmadmin

- https://<IP address or hostname of the server>:8443

Step 4   If the **Cisco Unified Communications Manager Business Edition 3000** link displays, click the link.

Step 5   After the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface displays, enter your username and password; then, click **Sign In**.

Signing in to the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface

All users that exist in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface can manage their user preferences settings through the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface if you give them the URL for the page.

> **Tip** Before a user can log in to the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface, the user configuration must exist in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. You can add the user by entering the user data in the Cisco-provided .xls data configuration file, or you can create a user in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface by selecting **Users/Phones > Users**.

The user can use the following procedure to browse into the server and log in to the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface.

Procedure

Step 1   Start a supported operating system browser. For a list of supported browsers, see the "What browsers are supported?" section on page 2-5.

Step 2   In the address bar of the web browser, enter the following case-sensitive URL:

https://<IP address or hostname of the Cisco Unified Communications Manager Business Edition 3000 server>:8443/cucmuser

Step 3   Enter your username and password; then, click **Sign In**.

Tip   Your default user and password are assigned to you by your system administrator.

The Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface displays.

Step 4   The first time that you sign into the interface, change your username and password, as described in the online help for the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface.

What browsers are supported?

Cisco Unified Communications Manager Business Edition 3000 supports the following operating system browsers on your server:

- Microsoft Internet Explorer (IE) 7 or 8 when running on Microsoft Windows XP or Windows 7
- Firefox 3.x when running on Microsoft Windows XP, Windows 7, or Apple Mac OS X
- Safari 4.x when running on Apple Mac OS X

Note   Cisco Unified Communications Manager Business Edition 3000 does not support the buttons or browser options in your browser. Do not use the browser buttons or browser options (for example, the Back button) when you perform configuration tasks.

Does this product provide accessibility?

The administrative interfaces provide functionality for you that allows you to access buttons or icons on a page without using a mouse. You can perform the following procedures from any point on the page so that you do not have to scroll or tab through various settings.

Accessing the Icons on the Page

Some of the pages include icons that display. To access these icons, perform the following procedure.

Procedure

Step 1   Press **Alt**, press **1**; then, press **Tab**. The cursor highlights the first icon from the left. To move to the next icon, press **Tab** again.

Step 2   Press **Enter**. The system performs the function of the icon.

Accessing the Buttons On the Page

Most of the pages have buttons that display at the bottom of the page. To access these buttons, perform the following procedure.

Step 1   Press **Alt**, press **2**, and then press **Tab**. The cursor highlights the first button from the left. To move to the next button, press **Tab** again.

Step 2   Press **Enter**. The system performs the function of the button.

What kind of security is provided?

Cisco Unified Communications Manager Business Edition 3000 uses HTTPS, so you must accept the certificate for the server during the login process before you can access the GUIs. If you need assistance with accepting the certificate for the server, review your browser documentation.

Cisco Unified Communications Manager Business Edition 3000 encrypts the passwords for all administrator and users.

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Caution   The secure shell username and password that is assigned in the Administrator page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**System Settings > Administrator**) is sent to the phone in clear text because there is no phone encryption supported with Cisco Unified Communications Manager Business Edition 3000; the configuration file that is sent to the phone does not include any encrypted values. Do not configure these secure shell username and password unless Cisco Technical Assistance Center (TAC) tells you to do so.

How do I view the version of software?

You can view the version of Cisco Unified Communications Manager Business Edition 3000 software that is running on your system by clicking **About** in the upper, right corner of the GUIs. In addition, in the Restart/Shutdown page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, you can view the active and inactive versions that are on your system. The active version is the version of software that you are currently running on your system; the active version matches the version that displays in the About dialog box. The inactive version, if available, is the last version of software that was running on the system before an upgrade.

Tip   To close the About box, click outside of the box.

How do I access online help?

When you access online help in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, you can view the field descriptions for each page that displays in the GUI. In addition, in the online help for Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, you can access some troubleshooting information for your system. To access online help documentation in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, click **Help** that displays in the upper right corner of each page.

What is a country pack, and where do I install it?

If your locale or country is not supported by default, as indicated in the Country/Locale page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, you can install a Cisco-provided country pack, which includes the dial plan, phone and network tones, language, and so on to support a country. You can only install the country pack during the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard. You can only install one country pack, and you cannot apply a country pack and select an option from the defaults.

Obtain the country pack from www.cisco.com. If you plan to upload it to the system from a USB key, copy the file to the USB key.

The Country/Locale page allows you to set up the support for the following items:

- The locale, which is the language that displays for text in the online help, in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, and the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface; the locale also impacts the tones that are used for the phones and gateway.

  The locale that you select impacts all users in the system; for example, all phones use the same network tones, and all users view the same language in the GUIs.

- The country where the Cisco Unified Communications Manager Business Edition 3000 server is located. The country that you select determines the dial plan that is used by the system.

The gateway only supports English text, so English is the language that is used for all gateway CLI commands. If you must reimage the server, the text during the installation displays in English.

For More Information

What is a locale?

A locale is the language that displays

- In the online help
- In the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard
- In the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface
- In the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface
- On the phones

The locale also provide localized tones that are used for the phones and gateway.

The locale that you select impacts all users in the system; for example, all phones use the same network tones, and all users view the same language in the GUIs and on the phones.

Some phases, including trademarks, display in English only. To obtain the latest localized text and tones, apply a locale update through the Upgrade page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface after the update is available.

Cisco recommends that all users set their supported browsers to the locale so that the text displays as expected. Cisco does not support other browser controls, including the Print, Back, Forward, Refresh buttons, with any Cisco Unified Communications Manager Business Edition 3000 GUIs.

Note   If you change the browser to the locale after you log into the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, close and reopen the browser so that the language displays as you expect.

Tip   When you configure the system, use only characters from the Modern Latin Alphabet or use Arabic numerals. For example, you can enter A-Z, a-z, 1, 2, 3 and some special characters.

For More Information

- What is a country pack, and where do I install it?, page 2-7
- Country/Locale Settings, page 15-1
- Upgrade of the Cisco Unified Communications Manager Business Edition 3000 software failed, page 47-73

How do I update the administrator username and password?

The Change Password page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard allows you to set the administrator username and password for your system. Administrators can perform all tasks in the Cisco Unified Communications Manager Business Edition 3000 GUIs, including but not limited to adding phones, users, monitoring the system, and so on. Anyone with access to this username and password can make updates in the GUIs.

Tip   The default username is **admin**. The default password is **BE-3000**. For security purposes, Cisco requires that you change the default password that comes with your system. Enter values that are difficult to guess, and remember your new username and password because the password does not display in the Password page.

To change the administrator username and password after you complete the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, select **System Settings > Administrator**.

Individual users with administrative privileges, as indicated in the User page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, should use their username and passwords that are established in the User page.

What is a strong password?

A non-trivial password meets the following criteria:

- Contains three of the four allowable characteristics: uppercase character, lowercase character, number, symbol.

- Does not include a character or number more than three times consecutively.

- Does not repeat or include the alias, username, or extension.

- Does not contain 3 consecutive characters or numbers (for example, passwords such as 654 or ABC).

Why do I need licenses? How do I install and view the licenses on my system?

Cisco User Connect Licensing (UCL) is a user-based licensing model where the number of users and phones that are added to the Cisco Unified Communications Manager Business Edition 3000 system get tracked and licensed for use. Several license types exist, but be aware that you may not be able to add a phone or enable certain features, such as voicemail, unless you install licenses. Your system comes with a certain number of starter licenses.

The Manage Licenses page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard and in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface allows you to perform such tasks as installing licenses and viewing details about installed licenses, including the license version, the type of licenses, and the number of licenses that you used and available.

For More Information

- Cisco User Connect Licensing, page 4-1

- License Settings, page 25-1

How do I find, add, update, delete, and copy configuration?

You can add your configuration through the following methods:

- Through the Cisco-provided .xls data configuration file during the initial deployment—Click **Automatic Setup** and upload the file through the desktop or through a USB key. (See the "Working with the Cisco-Provided .xls Data Configuration File" section on page 3-1.)

- Through the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard during the initial deployment (if you do not plan to use the Cisco-provided .xls data configuration file)—Add your data, and click **Next** or **Back** in the GUI.

- Through the Cisco-provided .xls data configuration file to add users and phones in bulk after the initial deployment—See the "Working with the Cisco-Provided .xls Data Configuration File" section on page 3-1.

- Through the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface after initial deployment—The following sections describe how to find, delete, add, edit, and copy your configuration in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface:

- – Finding Your Configuration, page 2-10
- – Deleting Your Configuration, page 2-11
- – Adding Your Configuration, page 2-11
- – Editing Your Configuration, page 2-12
- – Copying (Duplicating) Configuration, page 2-13

Tip   When add your add and edit your configuration, use only characters from the Modern Latin Alphabet or use Arabic numerals. For example, you can enter A-Z, a-z, 1, 2,3 and some special characters.

Finding Your Configuration

You can search for your configuration in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, as described in the following procedure.

Procedure

Step 1   For items other than phones, users, departments, usage profiles, phone applications, and sites, click the menu option to display the information. For example, to view your network settings or license information, click **Connections > Network** or **Maintenance > Manage Licenses**. After you click the menu option, the configuration page displays for these items.

Step 2   For phones, users, departments, hunt lists, usage profiles, phone applications, and sites, multiple configurations may exist for the items, so you can search for the specific configuration that you want to view. Navigate to the Search page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface for the configuration that you want to find.

- Users—Select **Users/Phones > Users**.
- Phones—Select **Users/Phones > Phones**.
- Departments—Select **Users/Phones > Departments**.
- Usage Profiles—Select **Users/Phones > Usage Profiles**.
- Phone Applications—Select **Users/Phones > Phone Applications**.
- Hunt Lists—Select **Users/Phones > Hunt Lists**.
- Sites—Select **Connections > Sites**.

Tip   You can also search for call detail records, which provide you with monitoring data about calls, in the Call Details Reports page (**Monitoring > Call Details Reports**).

Step 3   To find all configured items in the system, ensure that the Filter dialog box and the field next to the Filter drop-down list box are empty; go to Step 5.

Step 4   To filter or search for your configuration

- To narrow your search to find a particular configuration, select a search parameter from the Filter drop-down list box.
- To find a specific configuration, enter text in the field next to the Filter drop-down list box.

> ⌕
>
> **Tip**   Each search page allows you to filter on different criteria. For example, in the Users search page, you can search by last name, user ID, and so on. In the Phones search page, you can search by phone model, name of phone, line, and so on.

Step 5   Click **Go**.

All matching items display.

You can change the number of items that display on each page by choosing a different value from the Rows per Page drop-down list box. You can reverse the sort order, by clicking the arrow in the column header.

Deleting Your Configuration

You can delete the entire configuration for users, phones, usage profiles, remote sites, hunt lists, and phone applications in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. You can only delete one entry (one record) at a time from the Cisco Unified Communications Manager Business Edition 3000. For sites, you cannot delete the central site. In addition, you cannot delete call detail records that display under **Monitoring > Call Detail Reports** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. The system automatically deletes call detail records after a certain number of call detail records are generated (up to 2 months of CDRs are allowed).

Before you delete a usage profile that is assigned to users, reassign the users to a different usage profile. If you delete a usage profile and do not reassign the users, the phone may not behave as the user expects.

Use the following procedure to delete a configured entry (record) from the Cisco Unified Communications Manager Business Edition 3000.

Procedure

Step 1   Find the item that you want to delete, as described in the .

Step 2   For the item that you want to delete, click **Delete**.

A warning message displays.

Step 3   Repeat this procedure to delete another configured item.

Adding Your Configuration

To add configuration for users, phones, usage profiles, sites, hunt lists, and phone applications in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, perform the following procedure:

Procedure

Step 1   Navigate to the Search page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface for the type of item that you want to add.

- Users—Select **Users/Phones > Users**.

- Phones—Select **Users/Phones > Phones**.

- Departments—Select **Users/Phones > Departments**.

- Usage Profiles—Select **Users/Phones > Usage Profiles**.

- Phone Applications—Select **Users/Phones > Phone Applications**.

- Hunt Lists—Select **Users/Phones > Hunt Lists**.

- Sites—Select **Connections > Sites**.

Step 2   To add a new item, click **Add <*item*>**.

The Add page displays. Make the necessary changes, and click **OK**.

Editing Your Configuration

To edit configuration in Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, perform the following procedure:

Procedure

Step 1   For users, phones, departments, hunt lists, usage profiles, phone applications, and sites, which each use a Search page, navigate to the Search page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface for the type of item that you want to edit.

- Users—Select **Users/Phones > Users**.

- Phones—Select **Users/Phones > Phones**.

- Departments—Select **Users/Phones > Departments**.

- Usage Profiles—Select **Users/Phones > Usage Profiles**.

- Phone Applications—Select **Users/Phones > Phone Applications**.

- Hunt Lists—Select **Users/Phones > Hunt Lists**.

- Sites—Select **Connections > Sites**.

Step 2   To edit an item, click **Edit**.

The Edit page displays. Make the necessary changes, and click **Save**.

Step 3   You can edit the date and time for the server and phones, the network settings for the server, gateway configuration information, dial plan, administrator username and password, and voice features that impact the entire system through the System Settings menu; for example, to update the network settings for the server, select **Connections > Network**. The configuration page displays where you can edit the information. After you edit the information, click **Save**.

Copying (Duplicating) Configuration

You can copy (duplicate) the entire configuration from a usage profile so that you can easily add a new usage profile. You can make a copy of the usage profile, easily modify the settings to retain any configuration that you want to use, and then add the new usage profile to the GUI by using the following procedure. You cannot copy more than one usage profile at a time.

Procedure

Step 1   Find the usage profile that you want to copy, as described in the "Finding Your Configuration" section on page 2-10.

Step 2   For the usage profile that you want to copy, click **Duplicate**.

Step 3   The configuration displays where you can modify it. Make sure that you give the configuration a new name.

Step 4   To add the new usage profile, click **OK**.

When can I not perform configuration tasks?

You cannot perform configuration tasks under the following circumstances:

- After a backup has started
- After a restore has started; that is, the restoration of data has begun
- When the system is creating the export file during configuration export
- After an upgrade has started

Alert your users when any of these tasks are in progress. Your users cannot update the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface under these circumstances.

If another administrator starts these tasks in another browser session, you can manage the tasks that are in progress by clicking **Assume Control** when the button is presented in your browser session.

How do I configure my gateway?

See the following sections:

- Configuring the Gateway for the First Time, page 7-2
- Editing the Gateway Configuration, page 7-3
- Deleting the Gateway, page 7-5

What is the Post-Setup Wizard?

After you log in to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface for the first time, the Post-Setup wizard displays. Cisco Unified Communications Manager Business Edition 3000 displays the Post-Setup Wizard to ensure that you perform the most critical tasks immediately after the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard completes. The Post-Setup wizard allows you to perform the following tasks:

- Immediately import users and phones in bulk from the Cisco Provided .xls Data Configuration file

    If you selected automatic setup during the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, uploaded the Cisco-provided .xls data configuration file, and included users and phones in the configuration file, the Post-Setup wizard allows you to import the users and phones immediately after you log in to the GUI. After you import the users and phones, the system displays status of the import. If errors are reported, you can save the error report to a .csv file so that you can track the and correct the issues after the Post-Setup wizard completes.

- Immediately obtain the CLI commands that you must issue on the gateway

    The Post-Setup wizard displays the CLI commands that you must issue on the gateway. You can copy the commands directly onto the gateway if it is in enable mode, or you can save the commands to a file. (If you save to a text file, verify the text after you save it. The text should replicate the text from the GUI.)

- Perform other recommended tasks, such as backups

    The last page of the Post-Setup wizard displays tasks that Cisco recommends that you perform before you perform any other tasks in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

For More Information

- Post-Setup Wizard, page 30-1
- Checklists for Users, Departments, Lines, and Phones, page 8-1
- Checklists for Configuring the Gateway, page 7-1

How do I upgrade software?

The Upgrade page (**Maintenance > Upgrade**) in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface allows you to upload a valid file to upgrade the software that is running on your server. To upgrade your software, you can use either a DVD or SFTP server that has the upgrade file on it. You can use the Upgrade page to install ISO images for new releases, locale updates, device packs, phone firmware loads, updates for dial plans, or other Cisco-issued patches (.cop files) that are required for your Cisco Unified Communications Manager Business Edition 3000 system.

Cisco Unified Communications Manager Business Edition 3000 prevents you (and users) from making configuration changes during the upgrade.

For More Information

- Upgrading Cisco Unified Communications Manager Business Edition 3000, page 9-2
- Reverting to a Previous Version of Cisco Unified Communications Manager Business Edition 3000, page 9-5
- Upgrade Settings, page 38-1

How do I perform a backup of data?

Running a backup ensures that you store your important data to a remote location, such as a USB hard drive or SFTP server. To restore data after a system failure, for example, if you must reinstall or replace a server, you must have access to a backup tar file that matches the Cisco Unified Communications Manager Business Edition 3000 software version that is running on your server. To run a backup, select **Maintenance > Backup**, which allows you to immediately back up your data.

For More Information

- Backing Up Your Data, page 9-1
- Backup Settings, page 13-1

When would I need to restore my data?

The Restore page (**Maintenance > Restore**) in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface allows you to upload a backup tar file to restore data if you have a system failure; for example, you must replace your server or reinstall your server because of a system failure. Do not reinstall your server or replace your server unless your technical support team indicates that you must do so.

For More Information

- Backing Up and Restoring License Files, page 4-10

What are call detail records (CDRs), and how do I export them?

Call detail records (CDRs), which display under the Call Detail Reports page, provide important data about calls, including the date and time for the call, who made the call, the reason why the call ended, and so on. CDRs store information about the devices of the call and other call control/routing aspects. Call detail records are automatically generated with Cisco Unified Communications Manager Business Edition 3000; you do not need to perform any tasks for the system to generate these types of records. When a call is placed or received, the system automatically generates a call detail record when the call is terminated. In addition, the system generates a record when significant changes occur to a given call, such as ending the call, transferring the call, redirecting the call, splitting the call, and so on. For information on these reports, see the "Call Detail Reports" section on page 14-1.

From the Call Details Reports page, you can generate a summary report, generate a report that provides detailed information about your calls, or export your CDR data. When you export CDR data, consider the following information:

- Cisco Unified Communications Manager Business Edition 3000 exports all data that is available on CDRs to a .csv file. Cisco Unified Communications Manager Business Edition 3000 uses the same CDR framework as Cisco Unified Communications Manager, so the .csv file contains information that does not apply to Cisco Unified Communications Manager Business Edition 3000, including information on RSVP, MLPP, video, partitions, and so on.

- You can use the .csv file to import the CDRs to a third-party CDR conversion tool. This document provides no additional information on how to perform this task.

Chapter 2   Frequently Asked Questions

Can I export my configuration? Where can I import it?

- If you open and review the .csv file for any reason, you are viewing the same information that is available with Cisco Unified Communications Manager. To analyze your CDR data, refer to the *Cisco Unified Communications Manager Call Detail Records Administration Guide*, which is available in English only. (You must have an understanding of Cisco Unified Communications Manager in order to understand the information that is provided in this document.)

Note For information on call termination cause codes, refer to the *Cisco Unified Communications Manager Call Detail Records Administration Guide*.

For More Information

- Call Detail Reports, page 14-1

Can I export my configuration? Where can I import it?

Cisco Unified Communications Manager Business Edition 3000 allows you to export some of your configuration data through the Configuration Export page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. When you export your configuration data, the system creates a tar file that contains most of the data that your system is using. Before you export your data, review the following information:

- The export creates a tar file that includes the data that you configured for the system. The tar file does not include passwords, call detail records, or any configuration that is related to voicemail. You can export the tar file to a USB key or a SFTP server.

  Because Cisco Unified Communications Manager Business Edition 3000 uses Cisco Unified Communications Manager for call processing, the tar file includes Cisco Unified Communications Manager data that is used to make call processing work. Most of the Cisco Unified Communications Manager data that is included in the tar file does not display in the GUIs for Cisco Unified Communications Manager Business Edition 3000.

- You can use the tar file to import the data to a Cisco Unified Communications Manager Business Edition 5000 server. When you import, you use the Bulk Administration Tool that is automatically installed on the Cisco Unified Communications Manager Business Edition 5000 server. Bulk Administration displays as a menu option in Cisco Unified Communications Manager Administration.

Tip Cisco recommends that you do not change any data in the tar file, including the order of settings, if you plan to import the data to a Cisco Unified Communications Manager Business Edition 5000 server. If you need to update the configuration, Cisco recommends that you update the settings in the GUIs in Cisco Unified Communications Manager Business Edition 5000 after the import is completed.

- If you import the tar file, the Cisco Unified Communications Manager Business Edition 5000 server must run the *exact* same version of call-processing software as the Cisco Unified Communications Manager Business Edition 3000 server when you ran the export; for example, if the Cisco Unified Communications Manager Business Edition 3000 server runs 8.5(1) when you export the data, the Cisco Unified Communications Manager Business Edition 5000 server must run 8.5(1) when you import the data.

Chapter 2 Frequently Asked Questions

When is the server going to automatically restart? How do I manually restart the server?

- If you import the tar file to a Cisco Unified Communications Manager Business Edition 5000 server, you must configure Cisco Unity Connection Administration on the Cisco Unified Communications Manager Business Edition 5000 server because configuration export does not export Cisco Unity Connection data.

For More Information

- Exporting Your Data and Importing to Cisco Unified Communications Manager Business Edition 5000, page 9-5
- Configuration Export Settings, page 17-1

When is the server going to automatically restart? How do I manually restart the server?

After you complete the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, the server automatically reboots. After the reboot completes, you can log in to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

In the Restart/Shutdown page (**Maintenance > Restart/Shutdown**) in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, you can restart (reboot) the server or shut down the server.

To stop all processes on the server and then have the server restart, click **Restart**. When you restart the server, calls in progress may drop because the phones unregister from the system, re-register with the system, and then restart.

When you click **Shutdown**, the server stops all processes, shuts down, and does not restart. When you shut down the server, calls in progress drop because the phones unregister from the system, power down, and do not restart.

⚠️
Caution During a restart, the server may be unavailable for more than 10 minutes, and you cannot update any pages.

The server automatically restarts under the following circumstances:

- After you complete the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard
- When you update the time zone on the Date/Time page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**System Settings > Date/Time**)
- When you make updates to the Network Settings section on the Network page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**Connections > Network**)
- When you revert to a previous version of software
- When you upgrade the software

⚠️
Caution Cisco recommends that you do not press the power button on the server to shut down or to restart the server unless you absolutely must do so. If you do so, you may accidentally corrupt the file system, which may prevent you from being able to reboot your server.

How do I restart the phones?

If you restart the Cisco Unified Communications Manager Business Edition 3000 server, all phones that are configured in the system automatically restart; that is, they power down and then immediately boot up. (In the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, select **Maintenance > Restart/Shutdown**.) To restart specific phones, you (or the user) must press the appropriate reset key sequence on the phones themselves, as indicated in the phone documentation. (The user can also unplug and plug the phone back into the network.)

How do I know whether the phone is registered?

After you configure the phone and connect it to the network, the phone attempts to connect (or register) to Cisco Unified Communications Manager Business Edition 3000. When the phone attempts to register, the phone displays a message. (If the phone is working as expected, it is registered to the Cisco Unified Communications Manager Business Edition 3000.)

The Edit Phone page (**Users > Users/Phones**) in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface displays the registration status for the phones. You must click the phone configuration in the Search Phones page to display the Edit Phone page.

How do I log out users from Cisco Extension Mobility-enabled phones?

From the Phone Search page (**Users/Phones > Phones**) in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, you can log out a Cisco Extension Mobility user that is logged into a Cisco Extension Mobility-enabled phone. When the user is logged into the phone, the Logout link displays next to the phone entry in the Search Phones page. (The Logout link ensures that you do not need to go to the phone to manually log out the user.) Click the **Logout** link to log out the user from the phone.

How do I configure the system so that the call goes to the operator or to the auto attendant?

See the following sections:

May I use auto attendant without using voicemail?

Auto attendant and voicemail use the same internal components, but you may use auto attendant without using voicemail. To use voicemail, you must perform configuration tasks, including installing a voicemail license for each user that can use voicemail. Auto attendant requires that you perform configuration tasks, but it does not require licensing.

Note   You cannot use voicemail without also using the auto attendant functionality.

For More Information

- Voicemail, page 1-8
- Auto Attendant, page 1-9
- Setting Up Voicemail, page 8-12
- Setting Up Auto Attendant, page 8-13
- Setting Up the System So that Incoming Calls Reach the Operator, page 8-14
- Setting Up the System So that Incoming Calls Reach the Auto Attendant, page 8-14
- Setting Up the System So that Incoming Calls Reach the Auto Attendant if the Operator is Not Available, page 8-15

What is Cisco Web Dialer?

Cisco Web Dialer allows a user to place calls to people in the corporate directory from Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface. For example, Cisco Web Dialer uses hyperlinked telephone numbers in a corporate directory to allow users to make calls from Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface by clicking on the telephone number (extension) of the person that the user is trying to call.

Cisco Web Dialer is turned on by default, and you cannot turn it off. It always displays in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface for all users. To ensure that the user can call all employees in the corporate directory, verify that each user in Cisco Unified Communications Manager Business Edition 3000 Administrative Interface has an extension and phone assigned to him. (Only users with assigned extensions and phones can be called through Cisco Web Dialer.)

How does a user update the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface?

Remember that the settings that display in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface depend on your configuration. If you set up all of the features that are available in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface, the user can use the information in the "User Preferences Settings" section on page 42-23 to update their preferences.

How do I monitor and troubleshoot?

You monitor the system by accessing the Monitoring menu in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. Under this menu, you can view a summary of the health of your system, view a report for Cisco Extension Mobility usage in your system, view the call detail records that are being generated by the system, and collect diagnostics for your system.

For more information, see the following topics:

- Troubleshooting from the Health Summary Page, page 46-39
- Troubleshooting From the Diagnostics Page, page 46-41
- Troubleshooting When You Cannot Access the Graphical User Interfaces, page 46-44
- Troubleshooting Issues, page 47-51
- Call Detail Reports, page 14-1
- What are call detail records (CDRs), and how do I export them?, page 2-15
- Cisco Extension Mobility Report, page 16-1

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Caution   Additionally, the secure shell credential settings display on the Administrator page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. Do not update these fields unless Cisco Technical Assistance Center (TAC) instructs you to do so. Cisco Technical Assistance Center (TAC) uses secure shell for troubleshooting the phone. The credentials that you enter for the secure shell session get sent to the phone as unencrypted text. Immediately after TAC has completed troubleshooting, update this page to delete the secure shell credentials.

MCS 7890-C1 will not power up. Why not?

When starting the MCS 7890-C1 for the first time, or following a power outage, perform the following procedure.

Procedure

Step 1   Move the MCS 7890-C1 back panel power switch to the on position ("l").

Step 2   The front power button illuminates, as shown in Figure 2-1 on page 2-21. If the light fails to illuminate, press the front power button.

Chapter 2   Frequently Asked Questions

How do I connect or disconnect a USB DVD drive to an MCS 7890-C1?

Figure 2-1   MCS 7890-C1 Power Button
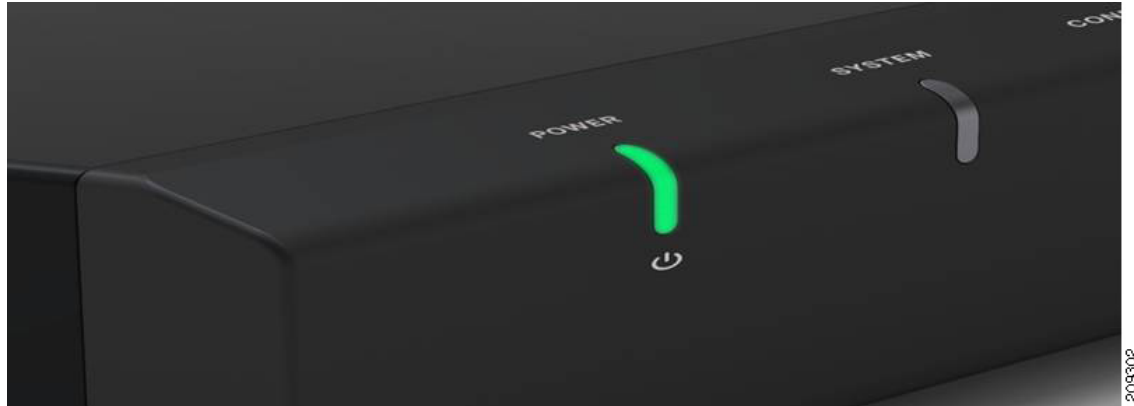
Step 3   Perform the procedure described in the "How do I sign in to the interfaces?" section on page 2-2.

Note   To shut down the MCS 7890 gracefully, press the front power button once and release immediately. If the system does not shut down using this method, press the front power button and hold for 5 seconds until the system is forced to power off.

How do I connect or disconnect a USB DVD drive to an MCS 7890-C1?

To connect or disconnect a USB DVD drive to an MCS 7890-C1, perform the following procedures:

- Connecting a USB DVD Drive, page 2-21
- Disconnecting a USB DVD Drive, page 2-22

Connecting a USB DVD Drive

To connect a USB DVD drive to the MCS 7890-C1, perform the following procedure:

Procedure

Step 1   Connect the USB DVD drive to its power source.

Note   For MCS7890-C1, ensure that you use only USB DVD drives with external power supply to install the iso-images for Cisco Unified Communications Manager Business Edition 3000. Ensure that you follow the manufacturer's instructions.

Step 2   Connect the USB DVD drive output to one of the USB input ports on the rear of the MCS 7890-C1.

Step 3   Insert the install DVD into the USB DVD drive.

Disconnecting a USB DVD Drive

To disconnect a USB DVD drive from the MCS 7890-C1, perform the following procedure:

Procedure

Step 1   Eject the DVD from the USB DVD drive. Store the DVD in an appropriate place.

Step 2   Disconnect the USB DVD drive from the rear of the MCS 7890-C1.

Is there a recovery disk available for MCS 7890-C1?

No, MCS 7890-C1 does not support the use of a recovery disk.

In the event of a hardware failure, contact TAC for a replacement (RMA). If it is not a hardware failure, you can reimage the system using the Cisco Unified Communications Manager Business Edition 3000 DVD that ships with the unit and then restore from backup. For information on how to reimage the MCS 7890-C1, refer to Reimaging an MCS 7890-C1, page 48-77.

How do I recover the system if I have lost the admin password?

Reimage the system using the Cisco Unified Communications Manager Business Edition 3000 DVD that ships with the unit and restore from backup. For information on how to reimage the MCS 7890-C1, refer to Reimaging an MCS 7890-C1, page 48-77.

How do I configure a Cisco Jabber client?

Cisco Jabber clients are configured as Phones in the Phones configuration window, which can be accessed by selecting **Users/Phones > Phones**. The Adding a Phone for a User, page 8-3 procedure describes how to add a phone within Cisco Unified Communications Manager Business Edition 3000.

For configuration specific to Cisco Jabber clients, make sure to do the following:

- Select **Cisco Unified Services Client** as the Phone Type
- Enter a unique name for the Cisco Jabber client in the Identifier field on the Add a Phone window. The Identifier is the name that Cisco Unified Communications Manager Business Edition 3000 assigns to the Cisco Jabber client. The XML device configuration file that the TFTP service sends to the Cisco Jabber client during the registration process is given the name you assign in this field.

Working with the Cisco-Provided .xls Data Configuration File

This chapter contains information on the following topics:

When You Can Use the Cisco-provided .xls Data Configuration File

The data configuration file, which is a Cisco-provided .xls spreadsheet template where you can enter the majority of your configuration data, provides the following support:

- Allows you to plan your configuration before you begin your first day of deployment.
- Allows you to insert users and phones in bulk through the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface after your initial deployment.

To quickly import (add) your configuration data to Cisco Unified Communications Manager Business Edition 3000 after you plug in your Cisco Unified Communications Manager Business Edition 3000 server, you can enter your data and then upload the Cisco-provided .xls data configuration file to the server from a USB key or your desktop when you run the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard. If you upload the file, you bypass the configuration pages in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, and the wizard immediately takes you to the Summary page where you can confirm your data.

After the server restarts at the end of the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, you can log into the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface and verify that your data got added to Cisco Unified Communications Manager Business Edition 3000. If you include user and phone data in the Cisco-provided .xls data configuration file, the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface allows you to import the users and phones and then informs you of import errors.

Tip If you do not want to upload the Cisco-provided .xls data configuration file when you run the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, consider entering your data in the file and using it as a guide when you manually enter the information on the GUI pages.

For example, during your initial deployment, you inserted 25 users and phones; now, you must insert 25 more users and phones. To accomplish this task, you can modify the Cisco-provided .xls data configuration file that you used for automatic setup during the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard or you can obtain a new Cisco-provided .xls data configuration file and add your new users and phones to that new spreadsheet.

Caution Do not use the Cisco-provided .xls data configuration file to modify your configuration data. Cisco Unified Communications Manager Business Edition 3000 only supports the Cisco-provided .xls data configuration file for the initial deployment and for bulk insertion (adding) of users and phones after the initial deployment. For example, if you attempt to update existing user and phone information through the Cisco-provided .xls data configuration file, the updates fail.

Considerations for Using the Cisco-provided .xls Data Configuration File

Before you complete the Cisco-provided .xls data configuration file, review the considerations in the following sections:

For Both the Initial Deployment and Bulk Insertion of Users and Phones After Initial Deployment

You must use the Cisco-provided .xls data configuration file, which is a Microsoft Excel spreadsheet. You can rename the file, but do not change the .xls extension. The file is translated into multiple languages.

Tip To include your configuration data, you can use any tool that supports the .xls format. When add your data to the Cisco-provided .xls data configuration file, use only characters from the Modern Latin Alphabet or use Arabic numerals. For example, you can enter A-Z, a-z, 1, 2,3 and some special characters.

Do not delete or change the order of the settings in the file. Do not rename the settings in the file. Do not add more settings to the file. In these cases, the system cannot read the file.

Only add new tabs at the end of the file; for example, you may add a new tab at the end of the file to include your notes. Do not delete or rename the tabs in the file. Do not change the order of the tabs in the file. In these cases, the system cannot read the file.

Some configuration settings are not in the file. For settings that are not in the file, the system uses the default values. To change the default values for these settings, you must access the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface and manually update the configuration.

Cisco Unified Communications Manager Business Edition 3000 does not check the integrity of the configuration data until after the Cisco-provided .xls data configuration file is inserted into the system.

For the Initial Deployment Only

When you use the file for automatic setup during the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, the system automatically uses the default values for the settings that are not considered mandatory in the file. For the automatic setup to succeed, you must update the following settings in the file:

- Network tab—IP Address (Enter the IP address that you want the server to use after the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard completes. Do not enter the default IP address that comes with the preinstalled server.)

- PSTN Gateway tab—IP Address or Obtain an IP Address Automatically (you must configure one of these two options)

- Dial Plan tab—Extension Length (because you cannot change this value in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface)

- If adding users and phones (optional)—You cannot add a phone unless you also add a user with a user extension and assigned usage profile. After you add the user information under the User tab, add the phone information under the Phone tab. Make sure that you assign a user extension from the User tab to the Line cell under the Phone tab. If you do not do this task, the phone configuration does not get added to the system.

- After you upload the Cisco-provided .xls data configuration file and click Next in the Setup Mode page, the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard displays a progress bar while the upload is occurring. As the upload progresses, each page of the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard displays with the data from the spreadsheet. If you click Cancel under the progress bar, you can modify any data on the pages, and click Next until the FTS wizard displays the Summary page. If you do not click Cancel, the Summary page displays after the upload completes. After the Summary page displays, verify your data in the summary tabs.

- The system validates most of the data from the Cisco-provided .xls data configuration file when you upload it in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard. User and phone configuration is not validated until after the server restarts.

- If you add user and phone information to the Cisco-provided .xls data configuration file for your initial deployment, the Post-Setup wizard, which displays after you log in to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, allows you to insert the user and phone configuration immediately in the system. (The configuration does not get inserted in the system until you click the button that initiates the insertion.)

Timesaver   Before you run the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, you can copy the configure.xml file, licenses, Cisco-provided .xls data configuration file, Cisco-provided country pack, localized greeting for auto attendant, and music on hold source audio file to a single USB key. Insert the key, and then run the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard. After you run the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard and the server restarts, you may keep the USB key inserted in the server, which allows you to perform additional tasks, such as uploading the greeting and music on hold source audio file to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

For More Information

- USB Support, page 1-4

For Bulk Insertion of Users and Phones After Initial Deployment

If you use the Cisco-provided .xls data configuration file to insert phones and users in bulk after the initial deployment, the system ignores all tabs except for the Users and Phones tabs.

To import users and phones in bulk after the initial deployment, you access the Search Users or Search Phones pages in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. (Click **Import Users/Phones**.)

You cannot add a phone unless the following criteria are met:

- A user with an assigned extension is already configured in the system
- A user with an assigned extension is added to the Cisco-provided .xls data configuration file (Make sure that you select a usage profile for the user, too.)
- Always verify that the user and assigned extension exist. If you plan to add a phone through the Cisco-provided .xls data configuration file, make sure that you add at least one user extension to the Line cell under the Phone tab. Otherwise, the phone configuration fails to get inserted into the system.

Network Tab Settings

The Network tab allows you to specify the hostname and IP address for the Cisco Unified Communications Manager Business Edition 3000 server, the subnet mask, default gateway, and DNS settings (if you plan to use DNS). To update the Link Speed and MTU size, as described in the "Network Settings" section on page 27-1, select **Connections > Network** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Table 3-1 describes the settings that display under the Network tab.

Table 3-1   Settings on the Network Tab

Setting	Description
System Host Name	Specify the hostname for the server. This value is an alias that is assigned to an IPv4 address to identify the server. The hostname cannot be more than 63 characters, can only contain alphanumeric characters (a, b, 1, 2) and hyphen (-), and must start with a letter.
	Tip To use DNS, make sure that you map the IPv4 address of the Cisco Unified Business Appliance server to the hostname on the DNS server. Cisco recommends that you update the DNS server before you add the hostname or IP address on the Network page.
System IP Address	You can only set a static IP address for the server. Enter an IPv4 address that identifies the server on this network.
	The IP address must be in the format ddd.ddd.ddd.ddd where ddd can be a value between 0 and 255 (except 0.0.0.0).
	⚠
	Caution Do not enter the default IP address that comes with your preinstalled server. Instead, enter the IP address that you want the server to use after the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard is complete.
Media Resource IP Address	Enter an IP address that identifies the internal gateway on the network. The Media Resource IP address must be in the same subnet as the System IP address.
Subnet Mask	Enter the subnet mask, which allows you to identify the part of an IP address reserved for the network. The subnet mask must be in the format ddd.ddd.ddd.ddd where ddd can be a value between 0 and 255 (except 0.0.0.0).
Default Gateway	Enter the default gateway, which represents a network point that acts as the entrance to another network. The default gateway must be in the format ddd.ddd.ddd.ddd where ddd can be a value between 0 and 255 (except 0.0.0.0).
Enable DNS Resolution	If you plan to use DNS for hostname resolution, select **Enable** to configure your Domain Name System (DNS) client and have one or more available DNS servers.

Table 3-1   Settings on the Network Tab (continued)

Setting	Description
Primary DNS Server	If you selected Enable for the Enable DNS Resolution setting, enter the IP address of the primary DNS server.The IP address must be in the format ddd.ddd.ddd.ddd where ddd can be a value between 0 and 255 (except 0.0.0.0).
Alternate DNS Server	If you selected Enable for the Enable DNS Resolution setting, enter the IP address of the secondary DNS server (optional). The IP address must be in the format ddd.ddd.ddd.ddd where ddd can be a value between 0 and 255 (except 0.0.0.0).
Domain	Enter the name of the domain where this node is located.

Date and Time Tab Settings

The Date and Time tab allows you to specify the country and time zone where your central site is located. This tab does not allow you to configure the date and time for the server. To update the date and time for the server, as described in the "Date and Time Settings" section on page 18-1, select **System Settings > Date/Time** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Table 3-2 describes the settings for the Date and Time tab.

Table 3-2   Settings on the Date and Time Tab

Setting	Description
Country	Select the country that you want to configure for the system. Select the country where your central site (server) is located.
System Time Zone	From the drop-down list box, select the time zone that supports your central site. Time Zone comprises a list of time zones for the selected region. Scroll through the list to select the appropriate time zone.

PSTN Gateway Tab Settings

The PSTN Gateway tab allows you to configure basic settings for the gateway, including the hostname, IP address, and the basic settings for the ports.

Table 3-3 describes the settings for the PSTN Gateway tab.

Table 3-3   Settings on the PSTN Gateway Tab

Setting	Description
Port 0/0/0 and Port 1	
Protocol Type	Select the communications protocol for the span. T1 PRI spans provide several options, depending on the carrier or switch. Determine the switch to which you are connecting and the preferred protocol.
PCM Type	Specify the digital encoding format. Select one of the following formats: • a-law: Use for Europe and other countries, except North America, Hong Kong, Taiwan, and Japan. • mu-law: Use for North America, Hong Kong, Taiwan, and Japan.
Line Coding	Select whether the line coding is Binary 8-zero substitution (B8ZS) or Alternate mark inversion (AMI).
Framing	Select the multiframe format of the span as Extended Superframe Format (ESF) or Superframe Format (SF).
Clock	Select Internal or External for the clock source.
Echo Cancellation Enable	Select whether to enable or disable echo cancellation.
Echo Cancellation Coverage (ms)	If an issue occurs with echo cancellation, select a value to address the issue.

Dial Plan Tab Settings

The Dial Plan tab allows you to configure the main business number for the company, the local area codes, the extension length and extension range, and access codes that the user presses to perform certain tasks, such as accessing the operator. To update these settings, as described in the "Dial Plan Settings" section on page 22-1, select **System Settings > Dial Plan** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Table 3-4 describes the settings for the Dial Plan tab.

Table 3-4   Settings on the Dial Plan Tab

Settings	Description
Main Number	Enter the main board or business number. This number cannot be lesser than the value selected for Extension Length. For example, if the Main Number is 24564 and the Extension Length is 8, you have to either change this number or the Extension Length value. The maximum length allowed is 11 digits.
Local Area Codes	Enter the local area code for your main number. You can enter multiple area codes separated by commas (,). The number should have a minimum of two digits and can have a maximum of four.
Extension Length	Select the value of the extension from the drop-down list. The values are from 4 to 11. The length of Main Number cannot be lesser than the value selected here.
	You cannot update this field in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.
Additional Allowed Extensions	Enter, if required, additional extension number range. For example, 5000-5999. You can enter more than one range separated by commas.
Voicemail and Auto Attendant	Enter the pilot extension that you want to use for voicemail and auto attendant. This value must exist in the dial plan, but it cannot be assigned to a user or department.

Dialing Prefixes

Dialing prefixes are the first digits that the user presses on the phone when the user contacts the operator, places a call over the PSTN, and uses some phone features. Ensure that each code is unique.

Operator Dial Code	Select the number that the user presses on the phone to contact the operator.
Outside Dial Code	Select the number that the user presses on the phone to place external calls (calls that are placed outside the company that go through PSTN).
Feature Dial Code	Select the number that the user must press on the phone when the user uses some features, such as call park, call pickup, and Meet-Me conferences.

Sites Tab Settings

Sites are the geographical locations where users (employees) work.

- Central Site—In most cases, the central site is the location where the majority of users work; in most cases, the company headquarters is the central site. In all cases, the Cisco Unified Communications Manager Business Edition 3000 server is located at the central site. The central site is mandatory; therefore, you cannot delete it. You can have only 1 central site.

- Remote Sites—Remote sites, which are optional, are branch offices that work with the central site; a WAN link or internet connection and routers must exist between the central and remote sites. You must have dedicated subnets for remote sites. You can have up to 9 remote sites.

- Teleworker Site—A teleworker site, which is optional, is a site that is for workers that do not work only at the central site or branch offices; teleworkers use VPN connections to connect to the central site, and no router is required to contact the central site because their internet connection provides access to the central site. You can have 1 teleworker site.

To update the advanced settings, as described in the "Sites Settings" section on page 36-1, select **System Connections > Sites** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. For more information on sites, see the "Sites" section on page 1-36.

Table 3-5 describes the settings for the Sites tab.

Table 3-5   Settings on the Sites Tab

Field	Description
Support Offsite Phones	If you plan to include a teleworker site, select **Enable**.
Name	Enter the name of the site. Enter alphanumeric characters, period (.), underscore (_), hyphens, or spaces.
Description	Enter the description of the site. Enter up to 128 characters, except for quotation marks ("), brackets (<>), ampersand (&), or percent sign (%).
Time Zone	The teleworkers site and central site do not require time zones. (You set the time zone for the central site in the Date and Time tab.) If you are configuring a remote site, select the time zone.
Calls Between Sites	
Bandwidth Between Sites	Select the amount of span that you are leasing from your service provider for your internet and intranet connectivity.
Bandwidth Allocation for Audio	Select the percentage of span that you want to make available for audio between sites; for example, between the central and remote site. The rest of the span gets used for data communication between sites.

Table 3-5 **Settings on the Sites Tab (continued)**

Field	Description
Quality/Quantity Tradeoff	Determine whether the quality of calls or the number of total calls is more important for calls between the sites; for example, between the central and teleworkers site or central and branch sites. The higher the value that you select, the better the quality of calls.
Calls Within Sites	
Quality/Quantity Tradeoff	Determine whether the quality of calls or the number of total calls is more important for calls within the site that you are configuring. The higher the value that you select, the better the quality of calls.
Call Privileges	
Access to PSTN	Select **Enable** to allow calls over the PSTN from this site. If you select Disable, users cannot place outgoing calls that go through the PSTN, and users cannot receive incoming calls that go through the PSTN.
Highest Privilege Allowed	Select the calling privileges for this site. The order goes from lowest privilege to highest privilege. For example, if you do not want the users at the sites to be able to make international calls but the users can make long distance calls, select Long Distance Calls.
	This value applies to the entire site, so select a value that accommodates all users. Because this setting applies to the entire site, you restrict whether some users can make certain types of calls by updating the Highest Level of Calls Allowed setting in the usage profile and then applying the usage profile to the users. If the value for the Highest Privilege Allowed does not match the value that you set for the Highest Level of Calls, the lowest level that is configured for the settings get applied to the users.
Emergency Calls	Select **Enable** to allow making emergency call from this site. Emergency calls are made to the center that addresses emergencies for your municipality.

Usage Profiles Tab Settings

Under the Usage Profiles tab, you can configure basic settings for the usage profiles, including the name, description, highest level of calls allowed, whether emergency calls are allowed, calling feature support, and phone security settings, such as PC port access.

To update other settings in the usage profile, as described in the "Usage Profiles Settings" section on page 40-7, select **Users/Phones > Usage Profiles** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Table 3-6 describes the settings for the Usage Profile tab.

Table 3-6   Settings on the Usage Profiles Tab

Setting	Description
Name	Enter a name that uniquely identifies the profile. The value that you enter displays in the Usage Profile drop-down list box on the Department and User pages in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.
	Enter up to 30 alphanumeric characters, periods (.), underscores (_), or hyphens.
Description	Enter a description of the profile. The description displays on the Search Usage Profile page.
	Enter up to 128 characters, except for quotation marks ("), brackets (<>), ampersand (&), or percent sign (%).
Highest Level of Calls Allowed	From the drop-down list box, choose the highest level of calls that are allowed for the users that use this usage profile. The list is ordered from lowest to highest privilege with International Calls being the highest level of calls that a user can place.
	This setting works in conjunction with the Highest Privilege Allowed setting that is on the Sites page. The Highest Privilege Allowed setting applies to the entire site. The Highest Level of Calls Allowed in the usage profile applies to specific users. If the values do not match for the usage profile and the site, the value for the settings that is the lowest level takes precedence and applies to the user.
Emergency Calls	To allow the user to make emergency calls to the local center that handles emergencies in your municipality, select **Enable**. In the United States, emergency calls use 911 or 9911.
	This setting works in conjunction with the Allow Emergency Calls setting on the Sites page. The Allow Emergency Calls setting on the site page applies to the entire site. The Emergency Calls setting in the usage profile applies to specific users. To allow certain users to make emergency calls, select **Enable**.

Table 3-6   *Settings on the Usage Profiles Tab (continued)*

Setting	Description
The available call features include Call Barge, Call Divert, Call Park, Call Pickup, Reach Me Anywhere, Cisco Extension Mobility, voicemail, and Call Forwarding functionality.	Select **Enable** for the features that you want to enable. For a description of the features, see the "Phone Features" section on page 5-1. **Tip** Enabling Cisco Extension Mobility in the Cisco-provided .xls data configuration file enables Cisco Extension Mobility on the phone. To allow a user to use Cisco Extension Mobility on the phone, access the usage profile in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface to enable rights for the user.
PC Port Access	For security purposes, you can prevent access to the PC port on the phone. To enable access to the PC port on the back of the phone, select **Enable**.
Web Access	For security purposes, you may want to disallow access to the web pages on the phone. To allow the phone to accept connections from a web browser or other HTTP client, select **Enable**. If this setting is disabled, the user cannot access the internal web pages on the phone.
Span to PC Port	Select **Enable** to allow the phone to forward packets that have been transmitted and received on the phone port to the PC port. You must enable this setting if you are running an application on the PC port that monitors traffic on the phone.

Table 3-6   *Settings on the Usage Profiles Tab (continued)*

Setting	Description
Forward Busy Calls/Divert To	Enter the phone number, including outside dial codes, area codes, and so on, where you want calls forwarded when the line is busy. (Enter a phone number as if you were placing a call from the phone.)
	Note If you enable call divert, you must enter a phone number or select voicemail where the call can be forwarded.
	For call divert, the user must press the divert softkey/button on the phone for the call to get transferred to the destination. For call forward busy, Cisco Unified Communications Manager Business Edition 3000 automatically transfers the call to the destination when the line is busy.
	Enter Voice Mail or enter a phone number, which may include up to 50 digits, asterisk, or octothorpe (#).
Forward No Answer Calls To	Enter the phone number, including outside dial codes, area codes, and so on, where you want calls forwarded when the user does not answer a call. (Enter a phone number as if you were placing a call from the phone.)
	If you leave the phone number blank, the phone continues to ring until the caller hangs up the phone.
	Enter Voice Mail or enter a phone number, which may include up to 50 digits, asterisk, or octothorpe (#).

Phones Tab Settings

The Phones tab allows you to configure the name of the phone, a description for the phone, the phone model, and extensions that you want to associate with the lines on the phone. To configure other settings, such as Do Not Disturb, as described in the "Phones Settings" section on page 28-1, select **Users/Phones > Phones** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Tip   Before you configure the settings in the Phone tab, configure the settings in the User tab. You cannot add a phone unless a user exists either in the Cisco-provided .xls data configuration file or in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. (The user must have a usage profile and at least one extension assigned to it).

Table 3-7 describes the settings for the Phones tab.

Table 3-7 **Settings on the Phones Tab**

Setting	Description
Name	This setting correlates to the MAC Address, Identifier, and Gateway MAC Address fields that display on the Phone page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.
	For most phones, for example, the Cisco Unified IP Phone 6961, enter SEP followed by the MAC address for the phone; for example, SEP123456789012. (Do not include a space or special characters in the name.) You can find the MAC address on the back of your phone hardware.
	For some phones, such as the Cisco IP Communicator or Cisco Unified Client Services Framework, you can enter any value up to a maximum of 16 characters.
	For the Cisco VG224 Analog Phone Gateway, enter AN:*<MAC address of the gateway>*:*<port numbe*r>. Enter a port number from 0 to 23. For the MAC address, enter 12 hexadecimal characters.
	Note Refer to http://www.cisco.com/en/US/docs/routers/access/vg224/software/configuration/guide/scgvoip.html for information on VG224 configuration.
	You cannot update this information on the Edit Phone page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.
Description	Enter a description that identifies the phone.
Model	From the drop-down list box, choose the phone model that you want to add. You cannot update this field on the Edit Phone page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Table 3-7   Settings on the Phones Tab (continued)

Setting	Description
Line	Enter at least one extension in the Extensions cell. The first extension that you enter in the cell assigns an owner to the phone. The user that is associated with that extension gets assigned to the phone, and if the phone supports the functionality in the usage profile, the user can use the features on the phone that the user owns.
	You can set up to six extensions.
	To create a shared line, which is a single extension that two or more phones share, enter an extension that will be assigned to two or more phones.
	To create a rollover line, which is the same line that is assigned to the same phone, enter the same extension more than once in the cell.
	⚠ **Caution** Always verify that the user and assigned extension exist. If you plan to add a phone through the Cisco-provided .xls data configuration file, make sure that you add at least one extension to the Line cell under the Phone tab. Otherwise, the phone configuration fails to get inserted into the system.In addition, if the extension is not assigned to a user, the phone configuration fails to get inserted into the system.

Users Tab Settings

Phones, users, and lines are closely related in Cisco Unified Communications Manager Business Edition 3000. A user, which is an employee from the company, uses the usage profile on a phone that is supported in Cisco Unified Communications Manager Business Edition 3000. Because phones and users are closely related, you cannot configure a phone without first configuring a user that has an extension (line) from the dial plan assigned to it.

In the Cisco Unified Communications Manager Business Edition 3000 system, a user becomes an owner of a phone when you assign the user extension to line 1 on the phone. If the user is an owner of the phone, the phone uses the usage profile that is assigned to the user.

To configure other settings, such as speed dials, external caller ID, and call forward all, as described in the "User Settings" section on page 41-17, select **Users/Phones > Users** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Table 3-8 describes the settings for the Users tab.

Table 3-8   *Settings on the Users Tab*

Setting	Description
User ID	Enter the unique identification name for the user. You can enter any character, including alphanumeric and special characters. No character restrictions exist for this field. Each user ID must be unique; that is, you cannot create two users that have the same user ID. **Note** Enter a user ID that identifies who the user is, not the function that the user performs. For example, enter an E-mail ID to identify the user. Do not enter a value that specifies a function, such as operator.
Password	The password that you enter in the Password cell is used the first time that the user logs in to the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface. Enter a password that contains alphanumeric or special characters. The system requires that the user change the password the first time that the user logs in to the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface. For the user to log in, you must communicate the user ID, password, and URL for the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface to the user. You can enter the same password for all users that you add.
First Name	Enter the first name of the user. Enter up to 64 characters, except for quotation marks (").
Last Name	Enter the last name of the user. Enter up to 64 characters, except for quotation marks (").
Usage Profile	Select the usage profile that you want to assign to the user. The usage profile that you select gives rights to the user, such as the ability to use certain calling features if the phone supports the feature.
Line Number	In the Line Number cell, enter a unique extension for the user. Enter an extension in the extension range as specified in the dial plan. (Extensions must be unique to this user.) For more information about extension length, see Dial Plan Tab Settings, page 3-7. **Note** You can configure a maximum of 10 line numbers for each user.

C H A P T E R 4

Cisco User Connect Licensing

Cisco User Connect Licensing (UCL) is a user-based licensing model where the number of users and phones that are added to the Cisco Unified Communications Manager Business Edition 3000 system get tracked and licensed for use.

This section covers the following topics:

Checklist for Licensing Before You Add a Phone to the System

Table 4-1 describes steps for licensing that you complete before you add a phone to the system.

Table 4-1   Checklist for Licensing Before You Add a Phone

Configuration Steps		Related Procedures and Topics
Step 1	Review the documentation on licensing.	Cisco User Connect Licensing, page 4-1
Step 2	With a new installation, Cisco Unified Communications Manager Business Edition 3000 automatically ships with 5 enhanced and 5 voicemail starter licenses on the server. Your system automatically runs with these licenses; you do not need to upload these licenses in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard or in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface for your system to work.	• Understanding The License Types, page 4-4 • Understanding How Borrowing and Loaning of Licenses Works, page 4-5
Step 3	Determine whether you need additional licenses. Determine if your users and phones are considered basic, enhanced, essential, and so on.	• Understanding The License Types, page 4-4 • Understanding How Borrowing and Loaning of Licenses Works, page 4-5 • Viewing Status for Licensing, page 4-9
Step 4	If necessary, obtain additional licenses.	Obtaining Licenses, page 4-7
Step 5	Install the additional licenses that you purchased. You can install the licenses in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard when you first set up your system, or you can install the licenses in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface(**Maintenance > Manage License**). After you install one permanent license of any type, Cisco Unified Communications Manager Business Edition 3000 invalidates all starter licenses that are on the server. ⚠ **Caution** Before you add a phone, access the Manage License page to make sure that you have installed enough licenses. You cannot add the phone if there are not enough licenses of a license type that the system will use.	• Installing a License File, page 4-8 • Understanding The License Types, page 4-4 • Understanding How Borrowing and Loaning of Licenses Works, page 4-5

Understanding How Licensing Works

Cisco User Connect Licensing (UCL) is a user-based licensing model where the number of users and phones that are added to the Cisco Unified Communications Manager Business Edition 3000 system get tracked and licensed for use. For each license type, which are described in the "Understanding The License Types" section on page 4-4, Cisco Unified Communications Manager Business Edition 3000 dynamically and automatically manages your licenses for you; the Manage License page in the Cisco

Unified Communications Manager Business Edition 3000 First Time Setup Wizard and the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface can indicate the following information about your licenses:

- How many licenses are used of each license type

- How many licenses are available for use—Available indicates that the license is installed but not used yet.

- Whether you need to consider installing additional licenses

- Whether you are using starter licenses

    Your Cisco Unified Communications Manager Business Edition 3000 server comes automatically installed with 5 starter enhanced licenses and 5 starter voicemail licenses. (A starter license is installed on the Cisco Unified Communications Manager Business Edition 3000 server by default.) Starter licenses do not expire. After you install one permanent license of any license type, Cisco Unified Communications Manager Business Edition 3000 invalidates all starter licenses on the server, although the phones and features continues to work as expected for existing users, even when starter licenses are invalid. If the starter licenses are invalid and you have not installed permanent licenses yet, you cannot perform the following tasks:

    – Assign a usage profile where Reach Me Anywhere, Cisco Extension Mobility, or voicemail are enabled to a user.

    – Enable those features in usage profiles where they are currently disabled.

    – Add more phones to the system.

- Whether you have oversubscribed a license type; that is, all licenses for a particular license type have been used, and you cannot borrow from another license type because the license type does not have any licenses to loan (or loaning and borrowing is not supported amongst the types). If oversubscription occurs, you cannot perform the following tasks:

    – Assign a usage profile where Reach Me Anywhere, Cisco Extension Mobility, or voicemail are enabled to a user.

    – Enable those features in usage profiles where they are currently disabled.

    – Add more phones to the system.

The following events may trigger Cisco Unified Communications Manager Business Edition 3000 to dynamically manage the licenses; that is, licenses may move from available to used or vice versa (from used to available).

- You add a user extension or department extension as line 1 on the phone.

- You disassociate the user from the phone.

- You delete the phone.

- You enable or disable Reach Me Anywhere in the usage profile of the user.

- You enable or disable voicemail in the usage profile of the user.

- You enable or disable Cisco Extension Mobility for the user in the usage profile.

- You assign more phones to the user.

- You install more licenses.

- Starter licenses or licenses that are used with same server recovery are marked as invalid by Cisco Unified Communications Manager Business Edition 3000.

For More Information

Understanding The License Types

Cisco Unified Communications Manager Business Edition 3000 manages the license types that are described in Table 4-2. Each license file for each type is associated with the MAC address of the Cisco Unified Communications Manager Business Edition 3000 server.

A primary phone for a user is the highest licensed phone that is associated with the user.

Tip For information on borrowing and loaning of licenses, see the "Understanding How Borrowing and Loaning of Licenses Works" section on page 4-5.

Table 4-2   License Types

License Type	Descriptions
Enhanced	This license type covers a user and the user's primary phone when the system classifies the primary phone as enhanced.
	• The Cisco Unified IP Phone 6941 and Cisco Unified IP Phone 6961 use an enhanced license if these phones are not set up as public space phones or adjunct phones.
	• The Cisco IP Communicator or Cisco Unified Client Services Framework use this license type if it is the primary phone for the user.
	• The Cisco Unified IP Phone 7937 uses this license type if it is the primary phone for the user.
	The enhanced license type allows a regular user (non-department user) to use voicemail, Reach Me Anywhere, and Cisco Extension Mobility if the features are enabled in the usage profile and supported on the phone model.
	Your Cisco Unified Communications Manager Business Edition 3000 server comes automatically installed with 5 starter enhanced licenses. After you install one permanent license of any type, Cisco Unified Communications Manager Business Edition 3000 invalidates all starter licenses on the server, although the phone and features continues to work as expected for existing users, even when starter licenses are invalid. If the starter licenses are invalid and you have not installed permanent licenses yet, you cannot assign a usage profile where the features are enabled to a user. In addition, you cannot enable the features in usage profiles where they are currently disabled. Finally, you cannot add more phones to the system.
Basic	This license type covers a user and the user's primary phone when the system characterizes the primary phone as basic. The Cisco Unified IP Phone 6921 and Cisco Unified IP Phone 6911 use this license type if the basic license is available and if the phone is not set up as an adjunct phone.
	This basic license type allows a regular user (non-department user) to use voicemail, Reach Me Anywhere, and Cisco Extension Mobility if the features are enabled in the usage profile and supported on the phone model.

Table 4-2 *License Types (continued)*

License Type	Descriptions
Essential	This license type supports a user and the user's phone when the system characterizes the phone as essential. The Cisco Unified IP Phone 6901 and Cisco VG224 Analog Voice Gateway fall into this category; for example, each analog port on a Cisco VG224 Analog Voice Gateway consumes a unit in the license file.
	Primary phones are not related to the analog/application only license type; that is, each phone that is classified by the system as analog or application only uses one license from this license type.
	This license type allows a regular user (non-department user) to use Cisco Extension Mobility on Cisco Extension Mobility-enabled phones if the feature is enabled in the usage profile and supported on the phone.
Adjunct	Adjunct licenses are used for a secondary phone; that is, the user has a primary phone assigned to him, and the user needs an additional phone. Adjunct licenses apply to phones that are characterized by the system as of equal or lesser value than the primary phone. For example, if the user has a Cisco Unified IP Phone 6961 and a Cisco IP Communicator and both types of license are available (enhanced and adjunct), the Cisco Unified IP Phone 6961 gets classified as enhanced, and a license unit from the enhanced license file gets used if it is available. The Cisco IP Communicator gets classified as adjunct, and a license unit from the adjunct license type gets used if it is available.
	The adjunct license must be available for the adjunct phone to get added to the system.
Voicemail	This license type allows a regular user (non-department user) to use voicemail and voicemail related features. A separate voicemail license is required for each regular user (non-department user). For example, if you have 150 users that require voicemail, you need 150 voicemail licenses. You enable voicemail in the usage profile; after you assign the usage profile to the user, a voicemail license gets used.
	Your Cisco Unified Communications Manager Business Edition 3000 server comes automatically installed with 5 starter voicemail licenses. After you install one permanent license of any license type, Cisco Unified Communications Manager Business Edition 3000 invalidates all starter licenses on the server, although voicemail continues to work as expected for existing users, even when starter licenses are invalid. If the starter licenses are invalid and you have not installed permanent licenses yet, you cannot assign a usage profile where voicemail is enabled to a user. In addition, you cannot enable voicemail in usage profiles where it is currently disabled.

Understanding How Borrowing and Loaning of Licenses Works

Your system automatically comes installed with a certain number of enhanced licenses, which may be borrowed by some other license types if the system determines that a particular license type needs additional licenses. Borrowing and loaning of licenses occurs without administrative interaction; the system does it automatically and dynamically without your assistance. Borrowing and loaning of licenses offers you flexibility with your system. In some cases, if a particular type of license is not available, then the license type that is not available can borrow from another license type that is available, as shown in Figure 4-1 and described in Table 4-3.

Figure 4-1   How Borrowing and Loaning Works
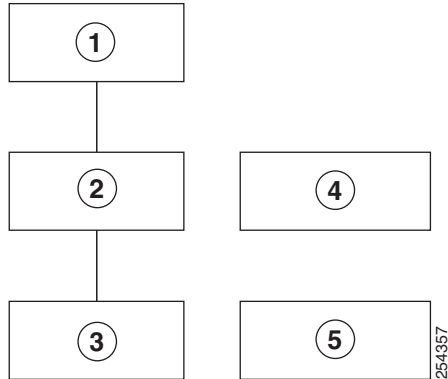
Table 4-3   How Borrowing and Loaning of Licenses Works

Number from Figure 4-1	License Type	Which license type gets used by the system when borrowing and loaning occurs?
1	Enhanced	Enhanced licenses cannot borrow from other license types. If enhanced licenses are available, the system can loan enhanced licenses, as described in Table 4-3.
2	Basic	If you do not have a basic license that is available, an enhanced license gets used by the system if an enhanced license is available.
3	Essential	If you do not have an essential license that is available, a basic license gets used by the system if the basic license is available. If a basic license is not available, the system uses an enhanced license if it is available.
4	Adjunct	Adjunct licenses cannot borrow or loan licenses. If you do not have an adjunct license available, you cannot add a secondary phone to a user that already has a primary phone assigned.
5	Voicemail	Voicemail licenses cannot borrow or loan licenses. If you do not have a voicemail license available, you cannot perform the following tasks: • Assign a usage profile where voicemail is enabled to a user. • Enable voicemail in usage profiles where it is currently disabled.

Interactions and Restrictions

The following interactions and restrictions exist for licensing:

• Cisco strongly recommends that you obtain the license by using Microsoft Outlook as your email client. Using other email clients to obtain the license file may cause additional characters to display in the license file.

- The system uploads the license file only if the version that is specified in the license file is greater than or equal to the call-processing software version that is running on the server. If the version check fails, obtain a new license file with the correct version. The system bases the version check only on major releases.

- The format of the license file that you receive specifies Volaris<timestamp>.lic. If you retain the .lic extension, you can rename the license file. You cannot use the license if you edit the contents of the file in any way.

- You cannot delete a license file from the server.

Working with Licenses

This section contains information on the following topics:

Obtaining Licenses

Cisco User Connect licensing enforces the licenses for Cisco Unified Communications Manager Business Edition 3000 users and phones. The Cisco Unified Communications Manager Business Edition 3000 system automatically comes with a certain number of licenses. If you need additional licenses for your system, use this section for information on obtaining license files.

Procedure

Step 1   Enter the Product Authorization Key (PAK) that you received with your software or phone order in the License Registration web tool at http://www.cisco.com/go/license.

Step 2   Click **Submit**.

Step 3   Follow the system prompts. You must enter the MAC address of the Ethernet 0 NIC of the Cisco Unified Communications Manager Business Edition 3000 server. You must enter a valid e-mail address as well as the number of servers (1) and licenses that you need.

Tip   If you need assistance with identifying the MAC address, select the Network page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard or Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. The MAC address displays as a read-only field on the Network page.

The system sends the license file(s) to you through email by using the email ID that you provided. The format of a license file specifies Volaris<*timestamp*>.lic. If you retain the .lic extension, you can rename the license file. You cannot use the license if you edit the contents of the file in any way.

Step 4 You must install the license file to the server with the matching MAC address that you provided in Step 3.

Installing a License File

Use the following procedure to install a license file to the server with the matching MAC address that is provided when a license file is requested. The server where the licenses are installed takes on tracks the number of licenses that are provisioned, borrowed, loaned, and so on.

Tip You can only install one license file at a time. Before you perform this procedure, make sure that the license is on your PC desktop or a USB key. For more information, see the "Interactions and Restrictions" section on page 4-6.

Procedure

Step 1 Perform one of the following tasks:

- If you are setting up your system for the first time in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, you can install a license file after you select your locale and change the username and password for the administrator.

- If you have completed the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, you must install licenses through the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. To access the License page, select **Maintenance > Manage License**.

- In the License page, click **Install Licenses**.

Step 2 You can either install the license from your PC desktop, or copy the license from the USB key that is inserted into the USB port on the Cisco Unified Communications Manager Business Edition 3000 server. Browse to the location of the license file; then, click **OK**.

Step 3 To determine whether the license file installed on the server, click the License File tab, which displays all licenses that you install on the server. (Starter licenses do not display under the License File tab.)

Viewing Contents of the License File

Example 4-1 describes the properties of the license files. The format of the license file that you receive specifies Volaris<*timestamp*>.lic. If you retain the .lic extension, you can rename the license file. You cannot use the license if you edit the contents of the file in any way.

The License File tab displays all licenses that you install on the server. Click **View** to view the contents of the license file.

Example 4-1   Permanent Adjunct License (Sample License File)

```
INCREMENT ADJUNCT cisco 8.0 permanent uncounted \

VENDOR_STRING=<Count>100</Count><OrigMacId>00237D920FC0</OrigMacId><LicFileVersion>1.0</Li
cFileVersion> \
    HOSTID=000e7feeebbd\
    NOTICE="<LicFileID>20100601114553335</LicFileID><LicLineID>1</LicLineID> \
    <PAK></PAK>" SIGN="168A 33D1 DC30 06D0 97EE 105D B91E DCD2 \
    2D4A 6C78 BB0D DC79 7502 6BFC 093B 0FF2 74AE 0321 848A 38C6 \
    4DAE 57B1 6734 9536 4BA7 209A E7EE BC93 600F C0F5"
```

The preceding license file includes the following information:

- No expiration date for this license exists as indicated by the keyword permanent. Permanent indicates that the license file is not temporary. A temporary license would have a date here instead.

- This license file provides 100 license units.

- The Original Mac Id specifies the Mac ID for which the license file was first issued.

- Host ID specifies the MAC ID of the server. This would differ from the OrigMacID only if a rehost procedure was done for the license file.

- The Cisco specific fieldLicFileID identifies this license file.

- SIGN represents the signature that FlexLM generates, and the FlexLM validation package uses it in Cisco Unified Communications Manager to detect whether license file tampering occurred.

- Multiple increment lines may display in the license file, even for the same feature. Ensure that none of the INCREMENT lines is identical, and ensure that each of them is signed independently.

Viewing Status for Licensing

On the Manage License page, you can view the general status for licensing; for example, in the upper, left corner of the page, the status may display as *Licensing is out of compliance*, which indicates that you need to purchase and install additional licenses.

The Manage License page can also indicate if you are using starter licenses.

Viewing the Number of Licenses That Are Used and Available

Use the license unit report to display the total license capacity and the number of licenses in use. Use the following procedure to generate a report for the number of licenses that are available.

Procedure

Step 1   In the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, select
Maintenance > Manage Licenses.

Step 2   See the bar chart to view the number of used and available licenses.

Backing Up and Restoring License Files

Because the license files exist in the database, these files are automatically backed up when you run a backup in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**Maintenance > Backup**). If you have a valid backup tar file and you restore your data to the same server, the license files automatically get restored to the server (**Maintenance > Restore**). When you replace a server and restore the data to the server, as described in the "Replacing the Cisco Unified Communications Manager Business Edition 3000 Server" section on page 48-84, Cisco Unified Communications Manager Business Edition 3000 classifies the licenses as unusable because the licenses are for the other server. After you restore the data on the replaced server, you have 30 days to install the new licenses on the replaced server. (Your phones work as expected during the 30-day grace period.)

Deleting License Files

Because licenses are specifically for the Cisco Unified Communications Manager Business Edition 3000 server, you cannot delete a license file that is installed on a Cisco Unified Communications Manager Business Edition 3000 server.

Understanding the Error Messages for Licensing

Table 4-4 describes error messages that may display when you perform licensing-related tasks in the Cisco Unified Communications Manager Business Edition 3000 GUIs. Recommended actions also display in Table 4-4.

Table 4-4   Error Messages for Licensing

Error Message	Recommended Action
Upload a valid *.lic file.	Verify that the name of the license file uses the .lic extension. Verify that the contents of the file have not been modified.
A license file with the same name exists.	The system does not allow you to install license files that use the same name, and the system has identified that the license is already installed. Install a different license file, if necessary.
The system detected that you have oversubscribed licenses for <type of licenses>. Install additional licenses.	Determine how many licenses you need to install; then, obtain and install the licenses.

Table 4-4   ***Error Messages for Licensing (continued)***

Error Message	Recommended Action
The file installation failed for <name of file>.	One of the following issues occurred: • The license file does not use the .lic extension. • The contents of the license file has been modified. • If you are using a USB key, the USB key cannot be read. • The license type is not valid. • The license version and the Cisco Unified Communications Manager Business Edition 3000 software version do not match. • The MAC address that is listed in the license file does not match the MAC address of the server. • The license file is expired or was issued for a later date. • You tried to install on an invalid server. • The host ID in the license file does not match the server where you are installing the license file.
The license file is empty.	Verify the contents of the license file to ensure that the file has not been modified.

Related Topics

C H A P T E R **5**

Phone Features

This chapter provides information, including feature interactions and restrictions, for the following phone features. Phone features may not be supported on all phones models that are available with Cisco Unified Communications Manager Business Edition 3000, so use this information in conjunction with the documentation that is available for your phone. Be aware that your phone may support additional features that are not described in this chapter.

Ad hoc Conference

Ad hoc conferences allow the conference controller to add specific participants to the conference. An Ad hoc conference is started by an initiator, and only the initiator of the conference, who is the conference controller, can add parties to the conference. Ad hoc conferences can support up to 4 participants.

Note   For Ad hoc conferences to work, you must enable the conference bridge in the Sites pages.

When a user initiates a conference call, Cisco Unified Communications Manager Business Edition 3000 places the current call on hold, flashes the conference lamp on the phone (if applicable), and provides dial tone to the user. At the dial tone, the conference controller dials the next conference participant and presses the conference softkey/button to complete the conference. Cisco Unified Communications Manager Business Edition 3000 then connects all parties. Each participating phone may display that the conference is occurring.

A conference participant can view the list of conference participants and can drop the last conference participant from the conference. If a conference participant transfers the conference to another party, the transferred party becomes the last conference participant in the conference. If a conference participant parks the conference, the participant becomes the last party in the conference when the participant picks up the conference. When only two participants remain in the conference, Cisco Unified Communications Manager Business Edition 3000 terminates the conference, and the two remaining participants reconnect directly as a point-to-point call.

Participants can leave a conference by simply hanging up. A conference continues even if the conference controller hangs up, although the remaining conference participants cannot add new participants to the conference.

Barge

Barge allows a user to interrupt a call without the permission of the participants that are on the call. Barge requires the use of shared lines. When a user barges into a call, the user presses the line button for the shared line or the barge softkey/button on the phone (depending on phone model). With barge, the system sets up a conference between the participants. When any participant leaves the call, the remaining participants may experience a brief interruption as the system sets up a point-to-point call.

If one participant presses the call divert softkey/button during the barged call, the system plays the outgoing greeting for the participant that pressed the softkey/button, and all participants can hear the greeting.

Call Back

Call back provides users with an audio and visual alert on the phone when a busy or unavailable party becomes available. Call back works only with extensions that are in the dial plan. To receive call-back notification, the user must press the call back softkey/button while receiving a busy, ringback, or reorder tone on the phone.

Note   Call back is available automatically with Cisco Unified Communications Manager Business Edition 3000, so you do not need to perform any configuration tasks to use it.

Call back only supports spaces and digits 0 through 9 for the name or number of the calling or called party. To work with call back, the name or number of the calling or called party cannot contain # or * (pound sign or asterisk).

If the phone of the calling party (User A) gets reset after call back has been enabled by the user, then call back gets automatically cancelled. User A does not receive an audio alert, and the call back notification does not display on the phone. If the phone of the called party (User B) gets reset, call back does not get cancelled. User A will receive an audio alert, and the call back notification displays after User B becomes available.

When a Cisco Extension Mobility user logs in or logs out of a Cisco Extension Mobility-enabled phone, any active call completion that is associated with call back automatically gets canceled.

If the user forwards all calls to voicemail, the user cannot use call back.

Example: User A calls User B, who is not available

User A calls User B. Because User B is busy or does not reply, User A activates the Call Back feature by using the call back softkey or button. After User B becomes available (phone becomes on hook after busy or completes an off-hook and on-hook cycle from idle), User A receives an audio alert, and call back notification displays on the phone. User A goes off hook and dials the extension of User B. User B answers the call. Users A and B go on hook.

Example: User A activates the Call Back feature for User B but is busy when User B becomes available

User A calls User B. User B does not answer. User A activates the Call Back feature by using the call back softkey or button. User C then calls User A, and users A and C go on hook in an active call. User B becomes available (phone becomes on hook after busy or completes an off-hook and on-hook cycle from idle) while User A is still on an active call. User A receives an audio alert, callback notification displays on the phone. User A can interrupt the active call to contact User B in either of the following ways:

*   Dial from the call back notification screen. The active call automatically gets put on hold while User A calls User B.

*   Exit the call back notification screen and then park (or otherwise handle) the active call. After the active call is handled, User A can press the CallBack softkey and select Dial to call User B).

Example: User A calls User B, who configured Call Forward No Answer to User C before call-back activation occurs

The call from User A gets forwarded to User C because Call Forward No Answer is configured for User B. User A uses call back to contact User C if User C is not busy; if User C is busy, User A contacts User B.

When User B or User C becomes available (on hook), User A receives an audio alert, and a message displays on the phone for User A that states that the user is available.

Example: User A calls User B, who configures call forwarding to User C after User A activates call back

User A calls User B. User A activates call back because User B is not available. Before User B becomes available to User A, User B sets up call forwarding to User C. User A may call back User B or User C, depending on the call-forwarding settings for User B.

Example: User A and User C call User B at the same time

User A and User C call User B at the same time, and User A and User C activate call back because User B is unavailable. A call-back activation message displays on the phones of User A and User C.

When User B becomes available, both User A and User C receive an audio alert, and a message displays on both phones that states that User B is available. The User, that is, User A or User C, that dials User B first connects to User B.

Call Divert

Call divert allows a user to transfer a ringing, connected, or held call directly to voicemail. After a call is diverted, the line becomes available to place or receive new calls. For call divert to work, the user must press the call divert softkey/button on the phone.

When a conference participant presses the call divert softkey/button on the phone, the remaining conference participants receive the voice mailbox greeting of the party that pressed the softkey/button.

Members of a hunt list can invoke call divert if the call is direct. They cannot invoke call divert if they are reached as a member of a hunt list, and a message 'Feature is unavailable' displays on the phone.

In some cases, call divert can detect a busy condition on the voice-messaging ports. (The call cannot divert to a busy voice-messaging system, but the original call gets maintained. Busy will display on the phone on which call divert was invoked to indicate that the call was not diverted.)

The calling and called parties may divert the call to their voice mailboxes if both simultaneously press the divert softkey/button. The voice mailbox of the calling party would contain a portion of the outgoing greeting of the called party. Similarly, the voice mailbox of the called party would contain a portion of the outgoing greeting of the calling party.

Example: Called Party Presses Divert Softkey

1. Party A calls Manager A.
2. Manager A presses the call divert softkey.
3. The call gets diverted to the voice mailbox of Manager A.
4. Party A receives the voice mailbox greeting of Manager A.

Example: Forwarded Call Gets Diverted to the Voicemail of Another Party

1. Party A calls Party B.
2. The call gets forwarded to the personal line of Assistant B.
3. Assistant B presses the Divert softkey.
4. The call gets diverted to the voice mailbox for Assistant B.
5. Party A receives the voice mailbox greeting of Assistant B.

Example: Manager A Forwards a Call to Manager B

1. Party A calls Manager A.

2. Manager A has line forwarded to Manager B.

3. Manager B presses the Divert softkey.

4. Immediate divert diverts the call to Manager B voice mailbox.

5. Party A receives the voice mailbox greeting of Manager B.

Example: Voicemail is Busy

1. Party A calls Party B.

2. Party B presses the Divert softkey.

3. The call cannot be diverted to the voice mailbox because the voice-messaging port is busy.

4. Party B sees the message Busy on the IP phone.

5. The original call remains in the call-offering state.

Example: Calling Party Calls a Hunt Pilot Number

1. Party A calls Hunt List B.

2. Hunt List B member presses the Divert softkey, which is disabled.

3. Call divert cannot divert the call to the voice mailbox to Hunt List B because Party A is not allowed to use voicemail. The following message displays on the Hunt List B member phone:

   "**Feature is unavailable.**"

> **Note** If the calling party directly calls the phone number/extension of the member, the member can divert the call to voicemail if call divert and voicemail are enabled in the usage profile that is assigned to the member.

Call Forward All

Call forward all automatically redirects all incoming calls that go to line 1 on the phone to a different phone number on another phone.

> **Note** The user can set call forward all in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface or on the phone. You can set up call forward all in the User page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**Users/Phones > Users**).

The user can use call forwarding to redirect all incoming calls that occur on line 1 on the phone to another number. If the user has an extension set for line 1, as indicated in the User page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**Users/Phones > Users**), the user can view the Call Forwarding setting in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface. If the user updates this setting, when line 1 on the phone for the user receives a call, the call gets redirected to the phone number that displays in the Call Forwarding drop-down list box.

The first time that the user views the Call Forwarding setting, no phone numbers display in the drop-down list box. For Call Forwarding to work for the user, the user must enter a fully-qualified phone number, including an outside dial code, area code, and so on. This field does allow a user to enter special characters, such as the international escape character, +, asterisks, *, and the octothorpe (#).

The user can add a maximum of five phone numbers in the Call Forwarding drop-down list box. The newest phone number that the user enters displays at the top of the list; the oldest phone number displays at the bottom. The user can edit a phone number in the list by pressing backspace on the keyboard. If the user edits a phone number, the original number continues to display in the list. To remove all phone numbers from the drop-down list box, the user can click **Clear History**. Then, the user can click **OK** or **Cancel** in the dialog box that displays.

Call Forward Busy

Call forward busy automatically redirects incoming calls to another phone number when the phone is busy. You configure call forward busy in the usage profile (either in the Cisco-provided .xls data configuration file or the Usage Profile page).

Call Forward No Answer

Call forward no answer automatically redirects incoming calls to another number if the call is not answered after a certain amount of time. You configure call forward busy in the usage profile. Select the Voice Features Settings page for additional system settings that apply to all phones where CFNA is enabled.

Call Hold and Resume

Call hold and resume allows the user to move a connected call from an active state to a held state. For call hold and resume, the user must press the buttons or softkeys on the phone.

Note Call hold and resume are automatically available with the Cisco Unified Communications Manager Business Edition 3000 by default. You do not need to perform any configuration tasks for the hold and resume functionality to work on the phone.

If you plan to use music on hold, see the "Music On Hold" section on page 5-11.

Call History

Call history displays received, missed, and placed calls on the phone; a user can place a call by using the phone number that is associated with the entry in the call history.

Note Call history is available with the Cisco Unified Communications Manager Business Edition 3000 by default. You do not need to perform any configuration tasks to use this functionality.

Call Park

Call park allows users to park (temporarily store) a call and then retrieve the call on a different phone in the system. For call park, the user must press the transfer softkey or buttons on the phone and dial the call park extension from the dial plan. For call park to work, you must enable call park in the usage profile (either in the Cisco-provided .xls data configuration file or the Usage Profile page).

Call park works with music on hold, if music on hold is configured. When the call is transferred, music may play to the caller.

Cisco Unified Communications Manager Business Edition 3000 also supports call park reversion, which means that the system automatically reverts the call to the phone that was originally called after a certain amount of time has passed.

Example: Call Park

1. Users A1 and A2 connect in a call.

2. To park the call, A1 presses the Transfer softkey (or Transfer button, if available) and dials the call park extension that is in the dial plan.

3. A1 either presses the Transfer softkey (or Transfer button) again or goes on hook to complete the call park transfer. This action parks A2 on the call park extension.

4. User B1 dials "*", followed by the call park extension to retrieve the call. B1 connects to A2.

Tip   If User B1 did not retrieve the call, the parked call would revert to user A1.

Call park works with call divert.

Example: Call Park with Call Divert

1. User A calls User B.

2. User B parks the call.

3. User B retrieves the call and then decides to send the call to voice mailbox by pressing the call divert softkey.

4. User A receives the voice mailbox greeting of User B.

Call Pickup

Call pickup allows a user to pick up calls for another user on the phone that the user owns. For call pickup, the user must press the buttons or softkeys on the phone and dial the call pickup extension from the dial plan. Enabling call pickup in the usage profile creates the call pickup softkey or button on the phone.

If a phone belongs to a hunt list and the phone rings due to a call that was made by calling the pilot extension, users cannot use the call pickup feature to pick up such a call.

Call Transfer (Direct and Consultative)

Consultative transfer allows a user to redirect connected calls from phones to another number, but the user must consult the user of the other number before transferring the call.

Direct transfer joins two established calls (call is in hold or in connected state) into one call and drops the feature initiator from the call. Direct transfer does not initiate a consultation call and does not put the active call on hold.

For transfer, the user must press the buttons or softkeys on the phone.

Note   Call transfer is automatically available with the Cisco Unified Communications Manager Business Edition 3000 by default. You do not need to perform any configuration tasks for the transfer functionality to work on the phone.

Call Waiting

The Call waiting feature lets users receive a second incoming call on the same line without disconnecting the first call. When the second call arrives, the user receives a brief call-waiting indicator tone. For call waiting to work, you must configure rollover lines in the phone configuration (either in the Cisco-provided .xls data configuration file or the Phone page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface). The user must press buttons on the phone for call waiting to work.

Caller ID

Caller identification is a phone number or name that appears on the phone display. For external calls that go through the PSTN, you can only specify phone numbers. For internal calls, you can specify an extension or the name.

The External Caller ID setting on the User page (**Users/Phones > Users**) allows you to enter a phone number for the user that is displayed when the user places outgoing calls through the PSTN.

The Internal Caller ID setting on the Voice Features Settings page (**System Settings > Voice Features Settings**) allows you to specify the user extension or name for internal calls.

Cisco Extension Mobility

Cisco Extension Mobility allows users to temporarily access their primary phone configuration such as line appearances, services, and speed dials from a Cisco Extension Mobility-enabled phone. User must log into the Cisco Extension Mobility-enabled phone to see their primary phone configuration.

You enable Cisco Extension Mobility for the phone and the user in the usage profile (either the Cisco-provided .xls data configuration file or the Usage Profile page).

Cisco Extension Mobility requires a physical Cisco Unified IP Phone for login. Users of work phones that are configured with Cisco Extension Mobility cannot log in to their phones remotely.

When a Cisco Extension Mobility user logs out of a device, call back functionality is canceled.

Cisco Extension Mobility maintains a cache of all logged on user information for 2 minutes. If a request comes to Cisco Extension Mobility regarding a user who is represented in the cache, the user gets validated with information from the cache. This means that, if a user changes the password, logs out, and then logs back in within 2 minutes, both the old and new passwords get recognized.

If users are logged out of a a Cisco Extension Mobility-enabled phone, the user may not be able to check voicemails from that phone until the user logs in. If the user receives a busy signal after pressing the Messages button or any key on the touchtone keypad, the user must log in before using the phone.

Users can log in to a phone that is off hook; however, their Cisco Unified IP Phone will not assume their settings until they go on hook. When they go on hook after logging in, their phone will display a resetting message, and their phone settings will be available from that phone.

The Cisco Extension Mobility profile of a user does not maintain ring type, contrast settings, and volume settings; users configure these settings directly on the phone.

If a user is allowed to use Cisco Extension Mobility, as set up in the assigned usage profile, the user can enter the phone PIN when the user logs in to a Cisco Extension Mobility-enabled phone. When the user logs into a Cisco Extension Mobility-enabled phone, that phone provides the same functionality that is provided as the primary phone (if the phone supports the functionality).

The Phone PIN settings always display in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface, even if the user is not allowed to use Cisco Extension Mobility.

Cisco Web Dialer

Cisco Web Dialer allows a user to place calls to people in the corporate directory from Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface. For example, Cisco Web Dialer uses hyperlinked telephone numbers in a corporate directory to allow users to make calls from Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface by clicking on the telephone number (extension) of the person that the user is trying to call.

Note   Cisco Web Dialer is turned on by default, and you cannot turn it off. It always displays in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface for all users. To ensure that the user can call all employees in the corporate directory, verify that each user in Cisco Unified Communications Manager Business Edition 3000 Administrative Interface has an extension and phone assigned to him. (Only users with assigned extensions and phones can be called through Cisco Web Dialer.)

Click to Call

Click to Call allows a user to place a telephone call by clicking on an object, such as a button, an image, or hyperlink text.

Click to Call supports a variety of different national and international dialing patterns. When a user dials a number using one of the supported dialing patterns, the Click to Call feature converts the number to an E.164 format before placing the call. Click to Call supports the following dialing patterns:

- {area code}{local number} e.g., 972 813 0000
- {country code}{area code}{local number} e.g., 1 972 813 0000
- {national access code}{area code}{local number} e.g. 1 972 813 0000
- {out of country code}{country code}{area code}{local number} e.g., 011 8621 972 813 0000

Cisco Jabber clients support Click to Call functionality. In addition, the Click to Call widget can be installed on a PC or laptop to enable Click to Call on web browsers and certain Microsoft applications.

Distinctive Ringing

Cisco Unified Communications Manager Business Edition 3000 supports the default ring tones that come with the Cisco Unified Communications Manager Business Edition 3000 system. Cisco Unified Communications Manager Business Edition 3000 does not support customized ring tones.

Do Not Disturb

With the Do Not Disturb feature, the ring volume is turned off on the phone, but incoming call information can get presented on the phone, if configured in the Voice Features Settings page, so that the user can determine whether to accept the call. For Do Not Disturb, the user must press the buttons or softkeys on the phone. You enable Do Not Disturb in the Phone page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**Users/Phones > Phones**).

Voicemail and Call Forward All

On phones, the text message that indicates that the Do Not Disturb (DND) feature is active takes priority over the text message that indicates that the user has new voicemail messages. However, the text message that indicates that the Call Forward All feature is active has a higher priority than DND.

Cisco Extension Mobility

When a user logs in to a Cisco Extension Mobility-enabled phone and enables Do Not Disturb on the phone, the Do Not Disturb incoming call alert and Do Not Disturb status settings get saved, and these settings get used when the user logs in again.

Call Back

For the originating side of the call, call back overrides Do Not Disturb. When the originating phone is enabled for Do Not Disturb, the callback notification (both audio and visual) will still be presented to the user.

For the terminating side of the call, Do Not Disturb overrides call back:

- When the phone that terminates the call uses DND Ringer Off, the Callback Available screen will be displayed on the phone after the terminating side goes off hook and on hook.

- When the phone that terminates the call has DND Call Reject enabled but the phone becomes available (goes off hook and on hook), a new screen will be presented to the originating device as "<*Extension*> has become available but is on DND-R". Callback available notification will be sent only after the terminating side disables DND Call Reject.

Hunt Lists

If a phone in a hunt list has Do Not Disturb Ringer Off enabled, the call get presented to the phone when a call gets made to that hunt list. In this case, the Do Not Disturb Incoming Call Alert settings apply.

If a device in a Hunt List has Do Not Disturb Call Reject enabled, any calls to that hunt list go to the next member in the hunt list and do not get sent to the phone where call reject is enabled.

Meet-Me Conference

The Meet-Me Conference feature allows a user to host a Meet-Me conference in which other participants call a predetermined number at a scheduled time. Meet-Me conferences can support up to 24 participants. You must configure a feature code in the dial plan and enable the conference bridge in the Sites page.

The conference begins when the host joins the conference. The conference ends when all participants hang up.

Music On Hold

The Music On Hold feature supports two types of hold:

- User hold—Music plays to the caller when the called party puts the call on hold.
- Network hold—Music plays to the caller when a call is transferred, when a conference is created, or when a call is parked.

The following examples demonstrate how music on hold works.

Example: Music On Hold with Hold and Resume

1. Phone D calls Phone S, and Phone S answers.
2. Phone D presses the hold softkey.
3. Phone S receives an announcement or plain music that is streaming.
4. When Phone D presses the resume softkey, Phone S disconnects from the music stream and reconnects to Phone D.

Example: Music On Hold with Transfer

1. Phone D calls Phone S, and Phone S answers.
2. Phone D presses the transfer softkey.
3. Phone S receives an announcement or plain music that is streaming.
4. After Phone D completes the transfer action, Phone S disconnects from the music stream and gets redirected to Phone X, the transfer destination.

Example: Music On Hold with Call Park

1. Phone D calls Phone S, and Phone S answers.
2. Phone S presses the call park softkey.
3. Phone D receives a beep tone because audio streaming is not available.
4. Phone X picks up the parked call. Phone S gets redirected to Phone X.

Mute/Volume Control

Mute ensures that no one on a call can hear a user when the user talks; that is, the microphone or headset is muted. Volume control allows a user to adjust the volume on the phone to make the volume louder or softer, depending on the user preference.

Tip Mute/volume control are available by default. You do not need to perform any configuration tasks to make mute and volume control work.

Phone Applications

Phone applications are applications that display interactive content, including text and graphics, on some phones. To view the phone applications on the phone, the user must press the buttons on the phone.

The following list contains typical services that may be supplied to a phone:

- Weather
- Stock information
- Contact information
- Company news
- To-do lists
- Personal daily schedule
- Graphic menus

Reach Me Anywhere

Reach Me Anywhere associates other phones, such as a mobile phone, with line 1 from the desk phone of the user. Reach Me Anywhere only works for calls that occur on line 1. When a user receives a call on line 1 of the user's desk phone, the external phone rings. When the user answers the call on one of the phones, the other phone stops ringing, is disconnected, and displays a missed call message. Reach Me Anywhere also allows the user to pick up in-progress calls on the desk phone or external phone without dropping the call.

Note For 3905 phones, if the handset of the deskphone is picked up when you answer the call on the mobile phone, a conference is set up between all the three phones. For 6900 series phones, a conference is set up between the phones if the BLF key on the deskphone is pressed while you answer the call on the mobile phone.

The user can enable and disable Reach Me Anywhere by pressing the Mobility softkey or button on the phone.

Reach Me Anywhere provides the following support:

- Receiving an outside call on desk phone or external phone—An outside caller dials the user extension. The desk phone and external phone ring simultaneously. When the user answers one phone, the other phone stops ringing. The user can switch from the desk phone to an external phone during a call without losing the connection. Switching gets supported for incoming and outgoing calls.
- Moving back from an external phone to a desk phone—If a call was initiated to or from the desk phone and then shifted to the external phone, the call can get shifted back to the desk phone.

- Using midcall features—During a call, users can perform midcall functions, including hold/resume, transfer, call park, and conference. The external phone cannot resume calls that Cisco Unified IP Phones put on hold.

The first time that the user views the Reach Me Anywhere setting, no phone numbers display in the drop-down list box. For Reach Me Anywhere to work for the user, the user must enter a full phone number, including an outside dial code, area code, and so on. This field does allow a user to enter special characters, such as the international escape character, +, asterisks, *, and the octothorpe (#).

The user can add a maximum of five phone numbers in the Reach Me Anywhere drop-down list box. The newest phone number that the user enters displays at the top of the list; the oldest phone number displays at the bottom.

The user can edit a phone number in the list by pressing backspace on the keyboard. If the user edits a phone number, the original number continues to display in the list.

To remove all phone numbers from the drop-down list box, the user can click **Clear History**. Then, the user can click **OK** or **Cancel** in the dialog box that displays.

Tip The user must enter a phone number that is external to the system (outside of the company). The user must enter a phone number is not part of the dial plan. For example, the user can enter a phone number for a single-mode mobile (cellular) phone, a smart phone, a dual-mode phone, another IP phone that does not belong to the system, or for home phone numbers.

Dual-mode phones offer an option to manually hand off calls from the PSTN to WLAN and vice versa. The external phone must be a Time Division Multiplex (TDM) device.

Reach Me Anywhere gets supported only for Primary Rate Interface (PRI) public switched telephone network (PSTN) connections.

Rollover Lines

Rollover lines occur when the same line appearance (extension) displays on the same phone; two or more lines on the same phone are set up to use the same extension. Rollover lines provide support for call waiting on some phone models, such as the Cisco Unified IP Phone 6961.

Shared Lines

Shared lines occur when the same line appearance (extension) displays on two different phones.

Most phones with a shared-line appearance can make or receive new calls or resume held calls at the same time. Incoming calls display on all devices that share a line, and anyone can answer the call. Only one call remains active at a time on a phone.

Call information (such as calling party or called party) displays on all phones that are sharing a line.

Phones with shared-line appearances can initiate independent transfer transactions. Phones with shared-line appearances can initiate independent conference transactions.

A user can view held calls on shared-line appearances on the phone. For example, a user can determine whether the call was put on hold by the phone user locally at the primary phone or by another party remotely on another phone with a shared line. For more information on viewing held calls for shared lines, refer to the phone documentation that supports your phone model.

Cisco Unified Communications Manager Business Edition 3000 logs missed calls in the call history for a specified shared-line appearance on a phone.

Speed Dials

Speed dial configuration allows a user to quickly dial a number that has been stored in the system; the speed dial displays as a line button on the phone, and the user can press the button to quickly dial the number.

The Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface allows the user to add and edit a prioritized list of speed dials that may display on the phone. The first time that the user logs in to the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface, no speed dials display, even if you configured them for the user in the User page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**Users/Phones > Users**).

The phone button template in the usage profile that is assigned to the user determines whether speed dials can display on the phone and the order that the speed dials display on the phone. For example, if the phone button template is set up so that phones buttons 2 and 3 are speed dials, and the phone that the user owns has 3 buttons on it, the phone displays the top 2 speed dials that are added in the list next to buttons 2 and 3 on the phone.

When you do not allow speed dials on the phone, as indicated by the phone button template in the usage profile that is assigned to the user, the user can still add, edit, and delete rows from their prioritized list of speed dials in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface. The user can add up to 12 speed dials on the phone, although the phone may not support 12 speed dials.

For each speed dial, the user must enter a full phone number, including an outside dial code, area code, and so on. This field does allow a user to enter special characters, such as the international escape character, +, asterisks, *, and the octothorpe (#).

> **Note** Speed Dial feature is not supported on the Cisco Unified IP Phones 6901, 6911, and 3905. However, speed dials that are not displayed on the phones will be available as abbreviated dials.

Determine the features supported on your phone before you configure the Cisco Unified Communications Manager Business Edition 3000. For more information, see the phone administration documentation available with your phone and the current version of the Cisco Unified Communications Manager Business Edition 3000.

Busy Lamp Feature (BLF)

When speed dial is configured to dial an internal number, the speed-dial button light illuminates when the destination phone is picked up. It remains lit until the other phone goes off hook. As a result, the phone with the speed-dial button can see whether the other party is currently on the phone or not. Using this feature, an attendant can monitor other lines before transferring a call to that line.

Certain phone types, such as the Cisco Unified IP Phone 6900 Series, have softkeys on the screen, as opposed to physical buttons on the phone. These on-screen buttons are not compatible with the Busy Lamp Feature (BLF) and therefore do not show the presence of the other party.

Tip   If the user adds speed dials, these speed dials display in the User page in the Cisco Unified
Communications Manager Business Edition 3000 Administrative Interface. You can also configure
speed dials in the User page in the Cisco Unified Communications Manager Business Edition 3000
Administrative Interface (Select **Users/Phones > Users**).

Voicemail

Cisco Unity Connection, an internal component of the Cisco Unified Communications Manager
Business Edition 3000 software that provides voicemail support for your system, resides on the Cisco
Unified Communications Manager Business Edition 3000 server. With Cisco Unified Communications
Manager Business Edition 3000, your users can perform the following tasks:

- Call into the Cisco Unity Connection voice messaging system

- Send voice messages by using the phone keypad

- Check voice messages by using the phone keypad

- Reply to voice messages by using the phone keypad

- Forward voice messages by using the phone keypad

- Manage receipts by using the phone keypad—Receipts indicate when a voice message was played
  by an intended recipient, when it was received by the intended recipient, and if it was received by
  the intended recipient.

Note   If you disable the voicemail feature for a user when the user has voice messages, the message waiting
indicator illuminates on the phone. The user cannot access the voice mailbox. To turn off the message
waiting indicator, dial the extension of the **Message Waiting Indicator Off** specified in **Feature
Extensions** information on **System Settings > Dial Plan > General** tab.

P A R T 2

Checklists for Common Configuration Tasks

Checklists To Review Before Deployment

This chapter contains information on the following topics:

- Gathering Customer Data Before a Deployment, page 6-1
- Setting Up the Customer Network and Central Site, page 6-2
- Using a Cable to Set Up Server Access to the Network, page 6-3
- Using the Cisco Network Configuration USB Key, page 6-4
- Questions to Ask Your Customer, page 6-7

Gathering Customer Data Before a Deployment

Value Added Resellers (VAR) can use the following procedure to gather information from the customer before deployment.

Procedure

Step 1   From www.cisco.com, download the latest Cisco-provided .xls data configuration file, localized if required, to gather information about the system. Multiple Cisco-provided .xls data configuration files are provided because the configuration file is translated into multiple languages.

Step 2   If you have not already done so, visit the customer site to familiarize yourself with it. During the customer site visit, use the "Questions to Ask Your Customer" section on page 6-7.

🔍

Tip   Cisco recommends that you use the Cisco-provided .xls data configuration file as you communicate with your customers. If you plan to use automatic setup during the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, enter the information in the Cisco-provided .xls data configuration file as you discuss the deployment with the customer.

If you do not plan to use automatic setup, use the Cisco-provided .xls data configuration file as a guide, and consider writing or entering the information in the file so that you have it when you manually configure the system.

Step 3   Order the following based on customer requirements:

- Starter kit
- Phones

- Licenses

Step 4   After you obtain the phones, enter the MAC addresses that exist on the back of phones in the Cisco-provided .xls data configuration file. (The MAC address may also display on the back of the box that the phone ships in.)

Tip   You enter the MAC Address in the Name cell under the Phone tab.

Step 5   After entering the required information in the Cisco-provided .xls data configuration file, save the configuration file to a USB key. In addition, save the license files to the USB key. For more information on the Cisco-provided .xls data configuration file, see the "Working with the Cisco-Provided .xls Data Configuration File" section on page 3-1.

Setting Up the Customer Network and Central Site

Value Added Resellers (VAR) can use the following procedure to prepare the customer network. Step 1 through Step 5 can be performed during the optional customer visit before the server and phones are connected to the network.

Procedure

Step 1   If Cisco Unified Communications Manager Business Edition 3000 is going to work with DHCP, configure the Dynamic Host Configuration Protocol (DHCP) server. If you use DHCP, which is recommended for the ease in deploying phones, reserve the IP address for the Cisco Unified Communications Manager Business Edition 3000 server and gateway so that the IP addresses are not give to other network devices. For more information on DHCP, see the "DHCP Usage for Acquiring IP Addresses" section on page 1-31.

Step 2   If Cisco Unified Communications Manager Business Edition 3000 is going to work with DNS, configure the Domain Name System (DNS) server. For more information on DNS, see the "DNS and Hostname Resolution" section on page 1-32.

Note   Cisco recommends that you do not configure Cisco Unified Communications Manager Business Edition 3000 to use DNS.

Step 3   Ensure that the PSTN connection is available for the customer and is located in the same location as the Cisco Unified Communications Manager Business Edition 3000 system.

Step 4   If the customer is using the Cisco VG224 Voice Analog Gateway, ensure there is enough power, space, and cooling for all the hardware.

Step 5   Ensure that phone cables are routed for the Cisco VG224 Voice Analog Gateway ports and that Ethernet cables are routed for IP phones to proper locations.

Step 6   Set up the following hardware at the customer site:

    a.   Insert the gateway and server into the rack.

    b.   Connect the power for both the gateway and server into the power supply.

    c.   The server uses one Ethernet cable that gets connected to the switch. Plug the Ethernet cable into the first network port on the server. Then, plug that same Ethernet cable into the switch.

     d. The gateway requires two cables, an Ethernet cable that is connected to the switch and a T1 or E1 cable that is connected to the PSTN connection. Connect the Ethernet cable for the gateway to the switch. Then, connect the T1 or E1 cable for the gateway to the PSTN connection.

     e. Install backup power, such as a uninterrupted power supply (UPS).

     f. If you want to do so, plug the phones into the network. (They do not register to the Cisco Unified Communications Manager Business Edition 3000 until after you configure the system, including the users and phones.)

Step 7 Your server comes preinstalled with a default IP address of 192.168.1.250. To ensure that the server is recognized by your network, perform one of the following procedures:

- Using a Cable to Set Up Server Access to the Network, page 6-3
- Using the Cisco Network Configuration USB Key, page 6-4

Using a Cable to Set Up Server Access to the Network

Your server comes preinstalled with a default IP address of 192.168.1.250. To ensure that the Cisco Unified Communications Manager Business Edition 3000 server is recognized by the network, you must either use the Cisco Network Configuration USB key, as described in "Using the Cisco Network Configuration USB Key" section on page 6-4, or you must connect a Ethernet cable from the server to a laptop, as described in the following procedure.

Procedure

Step 1 On the laptop, set the IP address to 192.168.1.10 or another IP address from the subnet.

Caution Do not set the IP address of the laptop to the default IP address of the server.

Step 2 On the laptop, set your subnet to 255.255.255.0 and set the default gateway to 192.168.1.1.

Step 3 Connect the Ethernet cable from the server to the laptop. You may use a crossover cable or a straight Ethernet cable.

Step 4 If you have a Cisco-provided country pack, licenses, and the Cisco-provided .xls data configuration file on a USB key, insert the USB key into the server.

Step 5 Log in to the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard by using the default IP address of the server (192.168.1.250). After you log in, you may update the network parameters, including the IP address of the server:

- On the Network page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (during the initial deployment)
- By uploading the Cisco-provided .xls data configuration file in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (during the initial deployment)

Step 6 After you complete the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard and the server restarts, you may disconnect the Ethernet cable from the laptop and server. Connect the laptop to the switch. If you have not already done so, connect the server to the switch so that the setup continues.

Using the Cisco Network Configuration USB Key

The Cisco Network Configuration USB Key consists of **configure.xml** file, also known as the Network Configuration signature file. The Cisco Network Configuration USB Key helps to create a temporary network interface, based on the values specified in the Network Configuration signature file, in a brand new Cisco Unified Communications Manager Business Edition 3000 and access the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard.

The following procedure describes how to use the Cisco Network Configuration USB Key to create a temporary network interface to:

- Connect to Cisco Unified Communications Manager Business Edition 3000 and access theCisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard.

- Access Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard after reimaging the Cisco Unified Communications Manager Business Edition 3000. Reimage the server only if your technical support team recommends that you do so.

To use the Cisco Network Configuration USB Key, you must download the Network Configuration signature file called configure.xml from www.cisco.com and update it with appropriate network configuration information. Save the updated Network Configuration signature file in the root directory of the Cisco Network Configuration USB key and insert it in the Cisco Unified Communications Manager Business Edition 3000 to create a temporary network interface without modifying the existing network configuration of the Cisco Unified Communications Manager Business Edition 3000. Using the temporary network interface, you can access the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard and permanently change the network setting of the Cisco Unified Communications Manager Business Edition 3000.

> **Note** The Cisco Unified Communications Manager Business Edition 3000 server must be switched on before inserting the USB key and must be in operational state.

The following steps explain the network configuration process using the Cisco Network Configuration USB Key:

Procedure

Step 1   Download the Configure Network Signature file called **configure.xml** from www.cisco.com and save it on your laptop.

Step 2   Open the Network Configuration signature file in your laptop and modify its content.

Table 6-1 describes the parameters in the network configuration signature file.

Table 6-1   Content of Network Configuration Signature File

Parameter	Description
Configure Network	By default, the value is hard coded to no.
	Change this to **yes** if you want to create a temporary network interface. This temporary network interface exists along with the current configuration in the Cisco Unified Communications Manager Business Edition 3000.
	This temporary interface is destroyed automatically when the Cisco Unified Communications Manager Business Edition 3000 is rebooted.
IP Address	Enter the appropriate IP Address based on the customers LAN.
	This is a mandatory requirement to change the network configuration.
SubnetMask	Enter the appropriate subnet mask of the customers LAN.
	This is a mandatory requirement to change the network configuration.
Gateway	Enter the gateway details of the customers LAN. This is an optional requirement.

Step 3   Save the Network Configuration signature file to the Cisco Network Configuration USB Key.

Step 4   Remove the Cisco Network Configuration USB Key from the laptop and put it in a location that you will remember.

Step 5   If you have not already done so, install the Cisco Unified Communications Manager Business Edition 3000 server in the customer LAN and power it up.

Step 6   Insert the Cisco Network Configuration USB Key in Cisco Unified Communications Manager Business Edition 3000. This triggers the USB Diag Script and creates a temporary network interface, which contains the Network Configuration signature file details.

Step 7   Connect the laptop to Cisco Unified Communications Manager Business Edition 3000 and open a browser to access the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard by using the IP Address that is configured in the Network Configuration signature file.

Step 8   After you log in, you may update the network parameters, including the IP address of the server:

- On the Network page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (during the initial deployment)

- By uploading the Cisco-provided .xls data configuration file in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (during the initial deployment)

Tip   After you access the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, you can also generate the configure.xml file from the Network page and save it to a USB key. (Select **System Settings > Network**.)

For More Information

- USB Support, page 1-4

- Troubleshooting with the Network USB Key When You Cannot Access the Administrative Interface, page 46-47

Questions to Ask Your Customer

As the Value Added Reseller (VAR), ask the customer the questions from Table 6-2 to ensure that you have the information that you need to deploy the sites. These questions serve as examples, and you may find that you need to ask additional questions as you communicate with your customer.

Table 6-2   Questions to Ask Your Customer

Question	Answer	Recommended Action
Do you have a PSTN connection? How many calls will be placed over the PSTN?		If the answer is No, order a PSTN connection from the service provider (telecommunications company). The number of calls that are placed over the PSTN impact whether you order one PRI connection, two PRI connections, and so on.
Do you have backup power for your network?		If the answer is No, work with your customer to get backup power.
What is the IP address and hostname for the server? Do you require DNS? What is the default gateway and subnet mask for the network?		Enter this information in the Cisco-provided .xls data configuration file. Make sure that you enter the value that you want the system to use after the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard completes.
Which phone features do you require?		Review the "Phone Features" section on page 5-1.
What is the main number for the business? Do you have a toll-free number, such as an 800 number, that your customers call?		Enter this information in the Cisco-provided .xls data configuration file.
What is the extension range? What is the extension length?		Enter this information in the Cisco-provided .xls data configuration file.
What number does the employee press on the phone to contact the operator? What number does the employee press to place a call outside of the company?		Enter this information in the Cisco-provided .xls data configuration file.
Do you have branch offices? Do you have telecommuters that are allowed to work outside of the office through a VPN connection?		If the customer does not have branch offices or teleworkers, you only need to set up a central site. Enter the site information in the Cisco-provided .xls data configuration file.
Does each site need music on hold?		Determine the source of the audio; for example, does the customer want to use the default audio source that Cisco provides, or does the customer want Cisco Unified Communications Manager Business Edition 3000 to play a custom file? Enabling music on hold means that bandwidth for the audio stream gets used while a user is on hold.
Does each site require that all users be able to make emergency calls?		If the answer is yes, make sure that you enable emergency calls in the Sites configuration and in the Usage Profile configuration.

Table 6-2   Questions to Ask Your Customer (continued)

Question	Answer	Recommended Action
What is the highest level of calls that the each site can place?		Enter this information in the Cisco-provided .xls data configuration file.
How many employees are at your company? Does each employee require a phone?		Enter information for each user in the Cisco-provided .xls data configuration file.
Do you have any employees that should be granted administrative privileges?		After you deploy Cisco Unified Communications Manager Business Edition 3000, you grant administrative privileges to the user in the User page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.
What roles do your employees have at your company?		The roles of the users impact which usage profile is assigned to them. Verify that you have usage profiles for all of the roles at the company; if necessary, create usage profiles in the Cisco-provided .xls data configuration file.
Do you have employees at your company that should not be allowed to make certain types of calls?		If necessary, create a new usage profile in the Cisco-provided .xls data configuration file, and assign the usage profile to the users in the Users tab of the file.
Which employees can use the phone features?		Review the "Phone Features" section on page 5-1. Assign the appropriate usage profile to the users in the Cisco-provided .xls data configuration file.
Do you have employees that can use phone applications on their phones? What type of phone applications can they use?		If the answer is Yes, add the phone application configuration to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface after the deployment and assign the phone applications to the usage profiles that the users are using.
Do you have public spaces that require phones? What type of public spaces do you have? How many phones are required in each public space?		You cannot add departments to the Cisco-provided .xls data configuration file, so set up departments and public space phones in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface after you deploy Cisco Unified Communications Manager Business Edition 3000.
Do any of the sites require fax support?		If the answer is Yes, you must order the Cisco VG224 Analog Phone Gateway for each site where fax is supported.
Which types of phone models are you interested in purchasing for the sites?		Collect data on the phone models prior to meeting with the customer. Make sure that you have a good understanding of what each phone model supports before you meet with the customer.
Do you have employees that need more than one phone assigned to them? If so, which types of phones should be assigned these users?		Ask follow-up questions, such as, Which employees are teleworkers? (Teleworkers may use Cisco IP Communicator on their PCs.)

Checklists for Configuring the Gateway

The Cisco Unified Communications Manager Business Edition 3000 uses either Cisco 2901 Integrated Services Router (ISR2901) or Cisco Media Convergence Server 7890C1 (MCS7890-C1) to serve as your connection to the PSTN; that is, the gateway allows all of your users to place and receive calls that go through the PSTN.

For all calls that go through the PSTN, the Cisco Unified Communications Manager Business Edition 3000 system uses either a Cisco ISR2901 or an MCS7890-C1 that has two internal T1 or E1 ports.

This chapter contains the following topics:

Installing the Gateway

To install the gateway, perform the following procedure:

Procedure

Step 1   Connect the gateway console port to a terminal or PC using appropriate cables. This will help configure the gateway through Cisco IOS CLI.

For information about installing the gateway, see *Cisco 2900 and 3900 Series Hardware Installation Guide* at http://www.cisco.com/en/US/docs/routers/access/2900/hardware/installation/guide/2900_3900_HIG.pdf.

Step 2   Power on the gateway.

Configuring the Gateway for the First Time

Cisco MCS7890-C1 allows you to add an internal gateway during the First Time Setup. However, you can add external gateways to both MCS7816-15 and MCS7890-C1 using the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Note You cannot add an internal gateway to the Cisco MCS7816-15.

After you complete the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, you are ready to set up the Cisco gateway for PSTN connections.

Note For more details, see *Cisco 3900 Series, 2900 Series, and 1900 Series Software Configuration Guide* located at
http://www.cisco.com/en/US/partner/docs/routers/access/1900/software/configuration/guide/Software_Configuration.html.

To configure the gateway, perform the following procedure:

Procedure

Step 1   When you power on your Cisco gateway for the first time, the following information appears on your screen:

```
"Cisco Configuration Professional (Cisco CP) is installed on this
device. This feature requires the one-time use of the username cisco
with the password cisco. These default credentials have a privilege
level of 15.
```

```
YOU MUST USE CISCO CP or the CISCO IOS CLI TO CHANGE THESE
PUBLICLY-KNOWN CREDENTIALS
```

Here are the Cisco IOS commands.

```
username <myuser> privilege 15 secret 0 <mypassword> no username cisco
Replace <myuser> and <mypassword> with the username and password you
want to use.
```

```
IF YOU DO NOT CHANGE THE PUBLICLY-KNOWN CREDENTIALS, YOU WILL NOT BE
ABLE TO LOG INTO THE DEVICE AGAIN AFTER YOU HAVE LOGGED OFF."
```

At the User Access Verification screen, log in with default username **cisco** and password **cisco**:

Username: **cisco**

Password: **cisco**

Step 2   Enter the following commands at the prompt to change the console username and password.

Note If you do not change the publicly known credentials, you will not be able to log in to the device again after you log out.

Router**#configure terminal**

Router(config)**#username <your console username> privilege 15 secret 0 <your console password>**

Router(config)#**exit**

Router#

Step 3   Log in to Cisco Unified CM Business Edition 3000 Administrative Interface.

If this is your first login after running First Time Setup wizard, the Post Setup Tasks box appears. This dialog box displays the commands you use to configure your gateway.

You can browse to **Connections > Devices**. Click the **Generate CLI commands to configure the gateway** to issue the commands on the chosen gateway. The PSTN Gateway Configuration dialog box appears. This dialog box displays the commands you use to configure your gateway.

Step 4   The first two commands, **erase startup-config** and **reload**, help erase any older gateway configuration. You need not run these commands when you configure gateway for the first time.

Step 5   Copy and paste the rest of the commands in the dialog box onto the gateway prompt, line by line, to complete your gateway setup.

Step 6   At the end of this configuration, Telnet access password for the gateway is set to **changeme**. To change this, type the following at the prompt:

Router# **configure terminal**

Router(config)# **line vty 0 4**

Router(config-line)# **password <Your new Telnet password>**
Router(config-line)# **exit**

Router(config)# **exit**

Router#

You can use this new password to access your gateway and view the configuration changes.

Step 7   When Ethernet access is enabled, your gateway is functional.

Editing the Gateway Configuration

You can edit the ISR2901 and MCS7890-C1 gateway through the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

To edit the gateway configuration, perform the following procedure:

Procedure

Step 1   Log in to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Step 2   In **Connections > Devices**, click the **Edit** link corresponding to the device you need to edit.

The Edit <devicename> window appears.

Step 3   Update the gateway configuration.

> **Note**   You cannot edit the Cisco MCS7890-C1 internal gateway configuration. You can only change the description of the device.

Step 4   Click **Save** to save your changes.

Step 5   Click **Reset** to revert to the earlier configuration settings.

> **Note** For device type ISR2901, you must configure the gateway with the appropriate CLI commands.

Step 6 Click the **Generate CLI commands to configure the gateway** link corresponding to the device type. You can copy and paste these commands directly onto the gateway console to edit your gateway configuration if it is in enable mode. You can also download the CLI commands to your desktop on your PC for later use.

For additional information on the CLI commands, refer to the gateway documentation that accompanies your gateway.

Step 7 Establish a connection between the gateway console port and a terminal or PC using the appropriate cables. This will help configure the gateway through Cisco IOS CLI.

Step 8 As part of editing your gateway configuration, older configuration will be erased first. Copy and paste the command '**erase startup-config**' to the gateway console.

```
Type Return to confirm erasing configuration at prompt:

Erasing the nvram filesystem will remove all configuration files!
Continue? [confirm]
```

Step 9 Copy and paste the command 'reload' to startup the gateway fresh.

```
If prompted to save current system configuration, Type 'Yes' at
prompt:

System configuration has been modified. Save? [yes/no]: yes

Type Return to proceed with reload at prompt:

Proceed with reload? [confirm]
```

Step 10 Wait for a few minutes while the gateway reloads. When the gateway comes back up, enter the following answer when the system message appears on the gateway.

```
--- System Configuration Dialog ---

At any point you may enter a question mark '?' for help.

Use ctrl-c to abort configuration dialog at any prompt.

Default settings are in square brackets '[]'.

Would you like to enter the initial configuration dialog? [yes/no]:
no
```

Step 11 If prompted to terminate auto install, press Return and continue with manual configuration:

```
Would you like to terminate autoinstall? [yes] Return
```

Several messages are displayed, ending with a line similar to the following:

```
...
```

Copyright (c) 1986-2004 by cisco Systems, Inc.

Compiled <date> <time> by <person>

Step 12 Press Return to bring up the Router> prompt.

```
...

flashfs[4]: Initialization complete.

Router>
```

Step 13 Type enable to enter privileged EXEC mode:

```
Router> enable

Router#
```

Step 14   Copy and paste rest of the commands onto the gateway prompt, line by line, to complete your gateway setup.

Step 15   At the end of this configuration, Telnet access password is set to **changeme**. To change this, type the following at the gateway prompt:

Router**# configure terminal**

Router(config)**# line vty 0 4**

Router(config-line)**# password <Your new Telnet password>**
Router(config-line)**# exit**

Router(config)**# exit**

Router#

You can use this password to telnet into your gateway and view the configuration changes.

Deleting the Gateway

To delete a gateway, perform the following procedure:

Warning   **If you delete a gateway, the corresponding PSTN connections using the gateway will also be deleted.**

Note   You cannot delete the Cisco MCS7890-C1 internal gateway. Only Cisco ISR2901 gateways can be deleted.

Procedure

Step 1   Log in to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Step 2   In **Connections > Devices**, click the **Delete** link corresponding to the device which you need to delete.

A confirmation window appears.

Step 3   Click **Delete** to delete the gateway.

Checklists for Users, Departments, Lines, and Phones

This chapter contains configuration checklists for the following topics:

Adding a User to the System

Users, which are employees of the company, are allowed to use the phones because you added the users and phones to the system. You can add a user by using one of the following methods:

- Through the Cisco-provided .xls data configuration file in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (for initial deployment)

- Through the Cisco-provided .xls data configuration file in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (after initial deployment)

- Under **Users/Phones > Users** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (after initial deployment)

Tip   After you insert users in bulk through the Cisco-provided .xls data configuration file, status for the insertion displays. If errors occur, you can download a report that describe the errors. After you download the report, correct the errors in the Cisco-provided .xls data configuration file, and upload the file again through the Search Phones or Search Users pages in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. (Select **Users/Phones > Users or Phones**, and click **Import Users/Phones**.)

Caution   You cannot add a phone until you assign a user and user extension to line one in the Phone page (or add the user and user extension under the User tab and add the extension under the Phone tab in the Cisco-provided .xls data configuration file). See the "Adding a Phone for a User" section on page 8-3.

When you configure a user ID, make sure that you enter a user ID that identifies who the user is, not the function that the user performs. For example, enter an email ID to identify the user. Do not enter a value that specifies a function, such as operator.

Procedure

Step 1   Perform one of the following:

- For the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, see Step 2 through Step 6.

- For the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, see Step 7.

Step 2   If you plan to use the use the Cisco-provided .xls data configuration file in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, add the configuration data for the user(s) to the Cisco-provided .xls data configuration file.

Step 3   Verify that the data is correct in the Cisco-provided .xls data configuration file.

Step 4   After you have entered *all* configuration data that you want to upload to the system in the Cisco-provided .xls data configuration file, upload the Cisco-provided .xls data configuration file on the Select Setup Mode page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard. (Select **Automatic Setup**.) You can upload the file from a USB key or from your desktop.

> **Tip**   If you are uploading from a USB key, ensure that you insert the USB key into the port on the Cisco Unified Communications Manager Business Edition 3000 server.

Step 5   After you upload the Cisco-provided .xls data configuration file to the server, the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard takes you to the Summary page. After the server reboots, log into the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Step 6   The Post-Setup wizard allows you to immediately insert the user and phone configuration. Click **Import Users/Phones**.

Step 7   If you have already completed the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, you can add a user to the system by performing one of the following methods in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface:

- Select **Users/Phones > Users** to add a single or multiple users.

  In the user page, create the extensions, speed dials, username and password, and so on. In addition, you must select a usage profile. Verify that you have configured a usage profile that works for the user and phone.

- To add multiple users from the Cisco-provided .xls data configuration file, select **Users/Phones > Users**. After you verify that the information in the Cisco-provided .xls data configuration file is correct, click **Import Users/Phones** in the Search Users page.

> **Tip**   To edit or delete user configuration, select **Users/Phones > Users** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Adding a Phone for a User

You can add a phone by using one of the following methods:

- Through the Cisco-provided .xls data configuration file in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (for initial deployment)

- Through the Cisco-provided .xls data configuration file in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (after initial deployment)

- Under **Users/Phones > Phones** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (after initial deployment)

> **Caution**   The following procedure assumes that you have users and user extensions set up in your system. You cannot add a phone unless you assign a user extension as line one in the phone configuration.

> **Tip**   After you insert phones in bulk through the Cisco-provided .xls data configuration file, status for the insertion displays. If errors occur, you can download a report that describe the errors. After you download the report, correct the errors in the Cisco-provided .xls data configuration file, and upload the

file again through the Search Phones or Search Users pages in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. (Select **Users/Phones > Users or Phones**, and click **Import Users/Phones**.)

Procedure

Step 1   Perform one of the following:

- For the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, see Step 2 through Step 6.

- For the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, see Step 7.

Step 2   If you plan to use the use the Cisco-provided .xls data configuration file in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, add the configuration data for the phone(s) to the Cisco-provided .xls data configuration file.

Step 3   Verify that the data is correct in the Cisco-provided .xls data configuration file.

Step 4   Install the licenses for the phones in the License page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard. You cannot add the phone configuration if licenses do not exist for the phones.

Step 5   After you have entered *all* configuration data that you want to upload to the system in the Cisco-provided .xls data configuration file, upload the Cisco-provided .xls data configuration file on the Select Setup Mode page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard. (Select **Automatic Setup**.) You can upload the file from a USB key or from your desktop.

> **Tip**   If you are uploading from a USB key, ensure that you insert the USB key into the port on the Cisco Unified Communications Manager Business Edition 3000 server.

Step 6   After you upload the Cisco-provided .xls data configuration file to the server, the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard takes you to the Summary page. After the server reboots, log into the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Step 7   The Post-Setup wizard allows you to immediately insert the user and phone configuration. Click **Import Users/Phones**.

Step 8   If you have already completed the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, you can add a phone to the system by performing one of the following methods in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface:

- Select **Users/Phones > Phones** to add a single or multiple phones.

  You must add an extension to line 1 on the phone.

- To add multiple phones from the Cisco-provided data Cisco-provided .xls data configuration file, select **Users/Phones > Phones**. After you verify that the information in the Cisco-provided .xls data configuration file is correct, click **Import Users/Phones** in the Search Phones page.

> **Tip**   You cannot add the phone configuration if licenses do not exist for the phones. Select **Maintenance > Manage Licenses** to view and install licenses.

To edit or delete phone configuration, select **Users/Phones > Phones** in the Cisco Unified

Communications Manager Business Edition 3000 Administrative Interface.

If you have not installed the phones, remember to install them on the network. Remember to make test calls with the phones after they are installed.

Adding a Department and a Public-Space Phone

A department is a unique-user type that is used exclusively for public-space phones; this user is reserved for phones in cafeterias, lobbies, break rooms, and so on. A public-space phone cannot support Reach Me Anywhere.

You do not configure passwords for departments, unlike users (**Users/Phones > Users**).

For information on adding a department and a public-space phones, use the following procedure.

Procedure

Step 1   Identify the departments that you need for your system. For example, you may create a department for a phone in each bream room, for each phone in the lobby, for a phone in the cafeteria, for fax support, and so on. (To identify the number of departments that you need, identify how many public-space phones that you have.)

Step 2   Configure the department. Because a department is a special type of user, make sure that you create a department for each public-space phone; for example, if you have 5 public-space phones, you probably need 5 departments, one department per phone.

> **Tip**   Make sure that you add the extensions to the department page.

Step 3   Verify that you have enough licenses installed on the Cisco Unified Communications Manager Business Edition 3000 server. If necessary, obtain and install additional licenses before you add the phones.

Step 4   Add the public-space phone(s). In Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, select **Users/Phones > Phones**.

If you have not already plugged the phone into the network, you can plug the phone in at this time.

Step 5   Make test calls with the public-space phones.

Setting Up the Cisco VG224 Analog Phone Gateway for Fax

To set up the Cisco VG224 Analog Phone Gateway to provide fax support for a site, perform the tasks that are described in the following procedure.

Procedure

Step 1   Configure a department specifically for the Cisco VG224 Analog Phone Gateway. (Select **Users/Phones > Departments**)

Step 2   In the department configuration, add an extension for the Cisco VG224 Analog Phone Gateway.

Step 3   Add the Cisco VG224 Analog Phone Gateway as a phone. For line 1 on the phone, select the extension that you created in the department configuration. (Select **Users/Phones > Phones**.)

Step 4   Make sure that the Cisco VG224 Analog Phone Gateway is connected to the network. Make sure that it has received its IP address and other network settings. After you plug the Cisco VG224 Analog Phone Gateway into the network, plug the fax machine into a port on the Cisco VG224 Analog Phone Gateway.

> **Note**   Refer to
> http://www.cisco.com/en/US/docs/routers/access/vg224/software/configuration/guide/scgvoip. html for information on VG224 configuration.

Setting Up Ad hoc Conferences

To enable the system for Ad-hoc conferences, enable the conference bridge in the Sites pages. For more information, see the "Sites Settings" section on page 36-1.

Setting Up Barge

Perform the following procedure to set up barge.

Procedure

Step 1   Enable barge in the usage profile.

Step 2   If you have not already done so, add the user configuration for the two users and make sure that the usage profile is assigned to the users.

Step 3   If you have not already done so, set up the shared lines in the phone configuration. When you configure each phone, assign the same user extension to a line on the phone.

Step 4   Make sure that the shared lines display on the phone, and test the barge functionality on the phones.

Setting Up Call Divert

Perform the following procedure to configure call divert.

Procedure

Step 1   Enable voicemail and call divert in the usage profile.

Step 2   Assign the usage profile to the user. Assign an extension to the user.

Step 3   Add the phone, if it has not already been added to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Step 4   Assign the extension to Line 1 on the phone. The user ID displays in the owner field in the Phone page after you assign the extension.

Setting Up Call Forward All

Call forward all automatically redirects all incoming calls that go to line 1 on the phone to a different phone number on another phone.

> **Note**   The user can set call forward all in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface or on the phone. You can set up call forward all in the User page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**Users/Phones > Users**).

Setting Up Call Forward Busy

Perform the following procedure to set up call forward busy.

Procedure

Step 1   Enable call forward busy in the usage profile; enter either a phone number or select **To Voicemail**, if available, in the usage profile.

Step 2   Assign the usage profile to the user. Assign an extension to the user.

Step 3   Add the phone, if it has not already been added to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Step 4   Assign the extension to Line 1 on the phone. The user ID displays in the owner field in the Phone page after you assign the extension.

Setting Up Call Forward No Answer

Perform the following procedure to set up call forward no answer.

Procedure

Step 1   Enable call forward no answer in the usage profile; enter either a phone number or select **To Voicemail**, if available, in the usage profile.

Step 2   Assign the usage profile to the user. Assign an extension to the user.

Step 3   Add the phone, if it has not already been added to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Step 4   Assign the extension to Line 1 on the phone. The user ID displays in the owner field in the Phone page after you assign the extension.

Step 5   To configure additional system settings, which apply to all phones where call forward no answer is enabled, select **System Settings > Voice Feature Settings**.

Setting Up Call Park

Perform the following procedure to set up call park.

Procedure

Step 1   Enable call park in the usage profile.

Step 2   Assign the usage profile to the user. Assign an extension to the user.

Step 3   Add the phone, if it has not already been added to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Step 4   Assign the extension to Line 1 on the phone. The user ID displays in the owner field in the Phone page after you assign the extension.

Setting Up Call Pickup

Perform the following procedure to set up call pickup.

Procedure

Step 1   Enable call pickup in the usage profile.

Step 2   Assign the usage profile to the user. Assign an extension to the user.

Step 3   Add the phone, if it has not already been added to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Step 4   Assign the extension to Line 1 on the phone. The user ID displays in the owner field in the Phone page after you assign the extension.

Setting Up Cisco Extension Mobility

To enable a user or phone for Cisco Extension Mobility, perform the following procedure:

Procedure

Step 1   Enable Cisco Extension Mobility in the usage profile.

Step 2   Assign the usage profile to the user. Assign an extension to the user.

Step 3 Add the phone, if it has not already been added to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Step 4 Assign the extension to Line 1 on the phone. The user ID displays in the owner field in the Phone page after you assign the extension.

Setting Up Do Not Disturb

Perform the following procedure to set up do not disturb.

Procedure

Step 1 Enable it in the Phone page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. (Select **Users/Phones > Phones**.)

Step 2 Configure system settings in the Voice Features Settings page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. (Select **System Settings > Voice Feature Settings**.)

Setting Up Meet-Me Conferences

Perform the following procedure to configure Meet-Me conferences.

Procedure

Step 1 Configure the feature code in the dial plan.

Step 2 Enable the conference bridge in the Sites pages.

Step 3 To translate a Meet-Me conference number to an extension in your dial plan, set up a translation rule in the Dial Plan page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Setting Up Music On Hold

Perform the following procedure to set up music on hold.

Procedure

Step 1 Enable music on hold under Advanced Settings on the central site, remote sites, or teleworker site pages.

Step 2 Select the audio source file for the Audio on Hold setting on the Usage Profile page.

Step 3   If you do not plan to use the sample audio source file that is installed by default on the Cisco Unified Communications Manager Business Edition 3000 server, upload a different .wav file on the Music on Hold page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**System Settings > Music On Hold**).

Music on hold audio source files must meet the following specifications:

- 16-bit PCM .wav file

- Stereo or mono

- Sample rates of 48 kHz, 44.1 kHz, 32 kHz, 16 kHz, or 8 kHz

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Tip   Uploading a new audio source file replaces the current file on the system.

Step 4   Verify that the phone supports music on hold. If you have not already configured the phone, configure the phone in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**Users/Phones > Phones**). The owner/extension that is assigned to Line 1 on the phone must use the usage profile where the audio source file is selected. In addition, the phone must belong to a site where music on hold is enabled.

Step 5   Test your music on hold functionality to make sure that the phone streams music to the users when a call is placed on hold.

Setting Up Phone Applications

Perform the following procedure to set up phone applications.

Procedure

Step 1   Create the phone application based on the specifications that are described in the *Cisco Unified IP Phone Services Application Development Notes.*

Step 2   Determine where you plan to store the phone application. You cannot put it on the Cisco Unified Communications Manager Business Edition 3000 server.

Step 3   Configure the phone application in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. You can perform this step

- In the Phone Applications page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. Select **Users/Phones > Phone Applications**.

- In the Usage Profiles page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. Select **Users/Phones > Usage Profile**. (Make sure that you move it to the Selected section after you add the configuration.)

Step 4   If you did not add the phone configuration directly to the usage profile, select it in the usage profile (move from the Available section to the Selected section).

Step 5   Verify that the usage profile is applied to the user configuration. In the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, select **Users/Phones > Users**.

Step 6   Verify that the phone displays the phone application. Test that the phone application works.

Setting Up Rollover Lines

Perform the following procedure to set up rollover lines.

Procedure

Step 1   If you have not already done so, create the user and assign the extension to the user. Assign a usage profile where the phone button template has at least two lines assigned to it.

Step 2   If you have not already done so, add the phone configuration. Make sure that line 1 in the phone configuration uses the extension from the user. In the phone configuration, make sure that you assign the same extension from the user to one of the other lines in the prioritized list.

Step 3   Verify that the phone displays the same extensions. If the same extensions do not display, verify that the phone button template in the assigned usage profile has at least two lines assigned to it. Verify that the phone model supports two lines.

Setting Up Reach Me Anywhere

To enable a user access to the Reach Me Anywhere setting in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface, perform the following procedure:

Procedure

Step 1   Enable Reach Me Anywhere in the usage profile.

Step 2   Assign the usage profile to the user. Assign an extension to the user.

Step 3   Add the phone, if it has not already been added to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Step 4   Assign the extension to Line 1 on the phone. The user ID displays in the owner field in the Phone page after you assign the extension.

> **Tip**   The Reach Me Anywhere setting does not display in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface if the usage profile that is assigned to the user has Reach Me Anywhere disabled.

Setting Up Shared Lines

Perform the following procedure to set up shared lines.

Procedure

Step 1   If you have not already done so, add the user(s) configuration and assign an extension to the user(s).

Step 2   If you have not already done so, add the phones that will share the line. When you configure each phone, assign the same user extension to a line on the phone.

Tip   To set up shared lines under the Phone tab in the Cisco-provided .xls data configuration file, enter the same user extension in the Line cell for more than one phone; for example, for rows 1 and 5 under the Phones tab, enter 5001, which is the example extension that will be shared by both phones. Make sure that the extensions are included in the extension range for the dial plan.

Setting Up Speed Dials

Perform the following procedure to set up speed dials.

Procedure

Step 1   Review the phone documentation to verify the number of buttons that are available on the phone. Also verify whether speed dials are supported on the phone model.

Step 2   In the usage profile, configure the phone button template to add speed dials.

Step 3   Add the user, and apply the usage profile to the user. Add the user extension to the user. (You can set up the speed dials in the User page, or the user can set up the speed dials in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface.)

Step 4   Add the phone, and assign the user extension to the phone.

Setting Up Voicemail

Perform the following procedure to set up voicemail.

Procedure

Step 1   Verify that you have enough voicemail licenses installed on the Cisco Unified Communications Manager Business Edition 3000 server. If necessary, obtain and install additional licenses before you configure the voicemail support. You need one voicemail license for each user that can access voicemail.

Step 2   Add the voicemail pilot extension to the dial plan.

Step 3   Enable voicemail in the usage profile.

Step 4   If you have not already done so, add the user and assign the usage profile to the user.

Step 5   If you have not already installed and added the phones, add the phones.

Step 6   Test your voicemail functionality.

Setting Up Attendant Group

Perform the following procedure to set up an Attendant Group in Cisco Unified Communications Manager Business Edition 3000.

Note Attendant Group requires an additional enhanced user license for each group member. If the number of licenses is insufficient, a new user will not get associated to the Attendant Group.

Procedure

Step 1 Click **Users/Phones**.

Step 2 Choose **Attendant Group**.

The Attendant Group window opens.

Step 3 To add a user to the Selected list, click the required user and click **Add**.

Step 4 To remove a user from Selected list, click the required user and click **Remove**.

The user is removed from the Selected list and is returned to the Available list.

Note You can add only ten users to the Attendant Group. The system displays an error message when you click to add more than ten users.

Step 5 Click **Save** to save the changes to the Attendant Group.

Step 6 Click **Reset** to discard unsaved changes.

Setting Up Auto Attendant

Perform the following procedure to set up auto attendant.

Procedure

Step 1 If you have not already done so, add the Voicemail and Auto Attendant Extension to the dial plan.

Tip Do not assign the Voicemail and Auto Attendant Extension that you configure in the dial plan to the user that is your operator.

Step 2 Configure your auto attendant functionality in the Auto Attendant page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. (**System Settings > Auto Attendant**)

Step 3 Test your auto attendant functionality.

For More Information

Setting Up the System So that Incoming Calls Reach the Operator

Perform the following procedure to ensure that incoming calls reach the operator instead of the auto attendant.

Procedure

Step 1   Configure the main business number in the dial plan.

Step 2   Configure the user for the operator. Make sure that you configure the extension from the main business number for the user.

Step 3   Configure the phone for the operator. Assign the extension for the operator to the phone.

Step 4   Test this functionality.

Setting Up the System So that Incoming Calls Reach the Auto Attendant

Perform the following procedure to ensure that incoming calls reach the auto attendant instead of the operator.

Procedure

Step 1   If you have not already done so, add the auto attendant extension to the dial plan. For the auto attendant extension in the dial plan, enter the extension that is derived from the main business number.

Step 2   Set up a translation rule in the dial plan that ensures that when the extension for the operator is called, the operator extension gets translated to another extension. (You are setting up the operator for internal use only.)

Step 3   Test this functionality.

Setting Up the System So that Incoming Calls Reach the Auto Attendant if the Operator is Not Available

Perform the following procedure to ensure that incoming calls reach the auto attendant if the operator is not available. This procedure assumes that the operator uses voicemail.

Procedure

Step 1   If you have not already done so, configure a user for the operator. Make sure that you configure at least one extension.

Step 2   Ensure that the usage profile that is assigned to the operator has voicemail enabled. If you cannot enable voicemail in the usage profile, verify whether you have enough voicemail licenses installed.

Step 3   In the usage profile for the operator, configure the call forward busy and call forward no answer settings so that the calls go to voicemail.

Step 4   If you have not already done so, configure a phone for the operator and assign the user extension to line 1 on the phone.

Step 5   Create a hunt list that includes the operator feature code from the dial plan or the extension that is assigned to the phone of the operator. Do not include any other extensions in the hunt list.

Step 6   If the hunt list softkey or button exists on the phone of the operator, the operator can log in and log out of the hunt list so that the calls go straight to auto attendant.

■ **Setting Up the System So that Incoming Calls Reach the Auto Attendant if the Operator is Not Available**

Checklists for Backups, Upgrades, and Configuration Export

This chapter describes how to perform the following tasks:

Backing Up Your Data

Running a backup ensures that you store your important data to a remote location, such as a storage device connected to a USB port (USB hard disk) or a SFTP server. To restore data after a system failure, you must have access to a valid backup file. The backup process does not back up the call detail records that display on the Call Details Reports page (**Monitoring > Call Detail Reports**).

Consider running a backup under the following circumstances:

- You made configuration changes to the administrative interface; for example, you added, edited, deleted, or duplicated information.

  For example, if you give users the URL for the user preferences page, users can update their speed dials in the user preferences page without your knowledge. Additionally, these changes automatically propagate to the User page in the administrative interface. Run a backup often to ensure that your backup file contains the latest changes.

- You identified a problem with the tar file that is backed up to the storage device or SFTP server. Or, you identified a problem with the storage device or SFTP server, and your tar file is not available or is not functional.

The following procedure describes how to back up your data.

Note Before starting a backup, ensure that network connectivity to the SFTP server is good. Also, ensure that the SFTP server has enough space to back up the data. If there is not enough space or if there are any connectivity issues, the backup may hang for up to 20 hours, and maintenance tasks such as upgrades or other backups cannot be performed during that period.

⚠

Caution   Run backups when you expect less network traffic. If the connectivity is slow, backup may take time; however, if there are connectivity issues (or if SFTP server is full), backup may time out after 20 hours. You should run a fresh backup only after checking whether the SFTP server has enough space or not.

Procedure

Step 1   Before you back up your data, determine where you plan to store the backup tar file.

You can store your backup tar file on an SFTP server or a storage device that is connected to a USB port (a USB hard disk).

Step 2   If you select to store your backup tar file to a storage device that is connected to a USB port (a USB hard disk), make sure that the USB hard disk is connected to the Cisco Unified Communications Manager Business Edition 3000 server.

Step 3   If you select to store your backup tar file to an SFTP server, make sure that the SFTP server is running before you run the backup. Make sure that the server can contact the SFTP server.

Step 4   Run the backup. In the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, choose **Maintenance > Backup**. Select your storage option; then, click **Run Backup**.

The backup runs immediately, but you can click **Cancel** to stop the backup.

⚠

Caution   If the backup is not complete within 1 hour, the backup session may time out. If it times out, you must run the backup again.

Step 5   Verify that the backup file got saved to the location that you selected in the Backup page.

Step 6   Repeat these tasks often to ensure that you have the latest data available in a backup tar file.

For example, if you give users the URL for the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface, users can update their speed dials in the interface without your knowledge. These changes automatically propagate to the user page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Upgrading Cisco Unified Communications Manager Business Edition 3000

You can upgrade Cisco Unified Communications Manager Business Edition 3000 from a local source using a DVD or from a SFTP server. You can use the Upgrade page to install ISO images for new releases of Cisco Unified Communications Manager Business Edition 3000 software, locale updates, device packs, phone firmware loads, new dial plans, or other Cisco-issued patches (.cop files) that are required for your Cisco Unified Communications Manager Business Edition 3000 system.

⚠

Warning   **To prevent firmware corruption, which can result in a catastrophic failure of an MCS 7890, the use of a UPS is highly recommended. If your UPS does not have 3 hours of capacity, do not automatically switch versions. After the upgrade completes, provided the UPS has 30 minutes of capacity, you can safely switch versions, which will automatically upgrade the firmware, if needed.**

The following procedure describes how to upgrade.

Procedure

Step 1 Obtain the appropriate upgrade file from www.cisco.com.

Step 2 Perform a backup or verify that you have a good backup tar file available for use. (See the "Backing Up Your Data" section on page 9-1.)

Step 3 Perform the upgrade. Select **Maintenance > Upgrade** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

- If you are upgrading using a local source, insert the DVD into the disk drive on the local server that is to be upgraded. Select **DVD Drive on System**.

> **Note** If your Cisco Unified Communications Manager Business Edition 3000 does not have a DVD drive, you must use a USB DVD drive.

- If you are upgrading using a remote source, put the upgrade file on an SFTP server that the server that you are upgrading can access. Select **SFTP server**.

> **Tip** See the "Upgrade Settings" section on page 38-1 for additional settings that you may need to configure.

Step 4 When the server restarts after the upgrade, place test calls to ensure that call processing is working as expected. Restarting the server may cause calls in progress to drop. Restarting the server may take more than 10 minutes.

If you are upgrading from Cisco Unified Communications Manager Release 8.5 to 8.6, you cannot access the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface until the upgrade is complete (this might take several hours). If you want to monitor the upgrade progress, you must connect a monitor to the Cisco Unified Communications Manager Business Edition 3000 server.

On successful completion of the upgrade, the system restarts in the new version. However, you can revert to the previous version at any time. For more details, see Reverting to a Previous Version of Cisco Unified Communications Manager Business Edition 3000, page 9-5.

If you want to switch back to the new version you will need to perform the upgrade process. The **Switch Version** option on the Restart/Shutdown page allows you to switch from Cisco Unified Communications Manager Business Edition 3000 Release 8.6 to 8.5 but will not allow switching from Release 8.5 to 8.6.

If the upgrade fails, the system automatically reverts to the previous version and restores all the services. For more details, see Upgrade Settings, page 38-1.

> **Note** Cisco recommends that you upgrade Cisco Unified Communications Manager Business Edition 3000 during a maintenance window. Depending on the system load, the upgrade and data migration process may take a few hours to complete.

The following features remain unaffected:

- Call control feature functionality; customers can still receive or make phone calls.

- User functionality; customers can still use Cisco Extension Mobility, Call Forward All settings, and so on.

> **Note** Ensure that you complete the switchover during the actual maintenance window as scheduled by the customer.

⚠ **Caution**   When upgrading from Cisco Unified Communications Manager Release 8.5 to 8.6, you must add subnet configuration to all your configured sites (except teleworker sites), so that all your gateways and phones get associated to their respective sites. If you configure your country to be other than India, United States, or Canada, you must upgrade your system with the country pack provided with the Cisco Unified Communications Manager 8.6 release. Upgrading the system with the appropriate country pack allows you to route PSTN calls through gateways at different sites. If you do not install the required country pack, PSTN calls will be routed only through your Cisco ISR2901 gateway. For more details on adding subnets, see Sites Settings, page 36-1.

Reverting to a Previous Version of Cisco Unified Communications Manager Business Edition 3000

You can revert to a previous version of Cisco Unified Communications Manager Business Edition 3000 that runs on your system if you determine that the active (current) version is not performing as expected.

The following procedure describes how to revert to a previous version of Cisco Unified Communications Manager Business Edition 3000.

Procedure

Step 1   Verify that you have a good backup tar file available for use. If necessary, run a backup, as described in the "Backing Up Your Data" section on page 9-1.

Step 2   On the Restart/Shutdown page, click **Switch Version**. (Select **Maintenance > Restart/Shutdown** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.)

Step 3   You may get prompted to restart the server. Restarting the server may take more than 10 minutes, and calls in progress may drop.

Step 4   Place test calls to ensure that call processing is working as expected.

Exporting Your Data and Importing to Cisco Unified Communications Manager Business Edition 5000

Cisco Unified Communications Manager Business Edition 3000 allows you to export some of your configuration data through the Configuration Export page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. When you export your configuration data, the system creates a tar file that contains most of the data that your system is using. Before you export your data, review the following information:

- The export creates a tar file that includes the data that you configured for the system. The tar file does not include passwords, call detail records, or any configuration that is related to voicemail. You can export the tar file to a USB key or a SFTP server.

Because Cisco Unified Communications Manager Business Edition 3000 uses Cisco Unified Communications Manager for call processing, the tar file includes Cisco Unified Communications Manager data that is used to make call processing work. Most of the Cisco Unified Communications Manager data that is included in the tar file does not display in the administrative interfaces for Cisco Unified Communications Manager Business Edition 3000.

- You can use the tar file to import the data to a Cisco Unified Communications Manager Business Edition 5000 server. When you import, you use the Bulk Administration Tool that is automatically installed on the Cisco Unified Communications Manager Business Edition 5000 server. Bulk Administration displays as a menu option in the Cisco Unified Communications Manager Administration.

> **Tip**   Cisco recommends that you do not change any data in the tar file, including the order of settings, if you plan to import the data to a Cisco Unified Communications Manager Business Edition 5000 server. If you need to update the configuration, Cisco recommends that you update the settings in the administrative interfaces in Cisco Unified Communications Manager Business Edition 5000 after the import is completed.

- If you import the tar file, the Cisco Unified Communications Manager Business Edition 5000 server must run the *exact* same version of call-processing software as the Cisco Unified Communications Manager Business Edition 3000 server when you ran the export; for example, if the Cisco Unified Communications Manager Business Edition 3000 server runs 8.5(1) when you export the data, the Cisco Unified Communications Manager Business Edition 5000 server must run 8.5(1) when you import the data.

- If you import the tar file to a Cisco Unified Communications Manager Business Edition 5000 server, you must configure Cisco Unity Connection Administration on the Cisco Unified Communications Manager Business Edition 5000 server because configuration export does not export Cisco Unity Connection data.

The following procedure describes how to export your data from Cisco Unified Communications Manager Business Edition 3000 and import it to Cisco Unified Communications Manager Business Edition 5000.

Procedure

Step 1   Run a backup, as described in the "Backing Up Your Data" section on page 9-1.

Step 2   Export your data through the Configuration Export page. (Select **Maintenance > Configuration Export** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.)

> **Tip**   Cisco recommends that you do not make any changes to the tar file after you complete the export.

Step 3   If you plan to import the data to a Cisco Unified Communications Manager Business Edition 5000 server, install Cisco Unified Communications Manager Business Edition 5000 on the Cisco Unified Communications Manager Business Edition 5000 server. Refer to *Installing Cisco Unified Communications Manager Business Edition 5000.*

Step 4   If necessary, upgrade Cisco Unified Communications Manager Business Edition 5000 to the exact same version that is running on the Cisco Unified Communications Manager Business Edition 3000 server. For upgrade information, refer to *Cisco Unified Communications Operating System Administration Guide*.

Step 5   To import the Cisco Unified Communications Manager Business Edition 3000 data to a Cisco Unified Communications Manager Business Edition 5000 server, access the Bulk Administration Tool that is automatically available on the Cisco Unified Communications Manager Business Edition 5000 server after installation. Refer to *Cisco Unified Communications Manager Bulk Administration Guide.*

Step 6   After the import of data is complete, update the configuration in the GUIs on the Cisco Unified Communications Manager Business Edition 5000 server. To identify the documents that support Cisco Unified Communications Manager Business Edition 5000, refer to *Cisco Unified Communications Manager Business Edition 5000 Documentation Guide.*

P A R T   3

Field Descriptions for the Graphical User Interfaces

C H A P T E R 10

Administrator Settings

GUI: Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard and Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

The Change Password page allows you to set the administrator username and password for your system. Administrators can perform all tasks in the Cisco Unified Communications Manager Business Edition 3000 GUI, including but not limited to adding phones, users, monitoring the system, and so on. Anyone with the username and password can log in to the GUIs and perform configuration tasks.

Tip For security purposes, Cisco requires that you change the default password that comes with your system. Enter values that are difficult to guess, and remember your new username and password because the password does not display in the Change Password page. After you complete the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, you use the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface to change the administrator username and password (**System Settings > Administrator**).

Table 10-1 describes the settings that display on the Change Password page.

Table 10-1   Settings on the Administrator Page

Setting	Description
Username	To change the username for the administrator, enter a new value in the Username field.

Table 10-1   Settings on the Administrator Page (continued)

Setting	Description
New Password Confirm New Password	To change your password, enter your password and then enter it again to confirm. To change the password in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, you must check **Change Password**. **Tip** The password must have at least six characters and can contain alphanumeric characters, hyphens, and underscore. A non-trivial password meets the following criteria: • Does contain three of the four allowable characteristics: uppercase character, lowercase character, number, symbol. • Does not use a character or number more than three times consecutively. • Does not repeat or include the alias, username, or extension. • Does not consist of 3 consecutive characters or numbers (for example, passwords such as 654 or ABC).

Secure Shell

These settings display in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface only.

Username	⚠ **Caution** Do not update this field unless Cisco Technical Center (TAC) instructs you to do so. Cisco Technical Assistance Center (TAC) uses secure shell for troubleshooting the phone. The credentials that you enter for the secure shell session get sent to the phone as unencrypted text. Immediately after Cisco TAC has completed troubleshooting, update this page to delete the username and password.

Table 10-1   Settings on the Administrator Page (continued)

Setting	Description
Password Confirm Password	⚠️ **Caution** Do not update this field unless Cisco Technical Center (TAC) instructs you to do so. The credentials that you enter for the secure shell session get sent to the phone as unencrypted text. Immediately after TAC has completed troubleshooting, update this page to delete the username and password. Enter the password for a secure shell user in the Password field. Enter the password again in the Confirm Password field. **Note** The system displays the password as dotted text, although the password is not encrypted when it gets sent to the phone.

CHAPTER **11**

Attendant Group Settings

GUI: Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

Attendant Group is a group of users in which each user is associated with all the phones in the phone list of the Cisco Unified Communications Manager Business Edition 3000. The users in the Selected list comprise the Attendant Group.

> ⚠ **Caution**   You can add only ten users to the Attendant Group. The system displays an error message when you click to add more than ten users.

Table 11-1 describes the settings that are displayed when you select Attendant Group.

Table 11-1   Fields Descriptions for Attendant Group

Setting	Description
Available	The Available lists includes all the users from the phone list who are not on the Selected list. The Available list contains: • Last Name: Displays the last name of the user • First Name: Displays the first name of the user • User ID: Displays user identity
Add	The Add option moves a user from Available list to the Selected list. The change is not saved until you click Save.
Remove	The Remove option moves the user back to the Available list and removes the user from the Selected list.
Selected	The Selected list includes all the users list associated with the Attendant Group. The Selected list contains: • Last Name: Displays the last name of the user. • First Name: Displays the first name of the user. • User ID: Displays user identity.

Table 11-1   Fields Descriptions for Attendant Group (continued)

Setting	Description
Save	The Save option associates or dissociates users on the Attendant Group page.
Reset	The Reset option discards any unsaved changes.

C H A P T E R **12**

Auto Attendant Settings

GUI: Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

Auto attendant allows callers to locate users without talking to a receptionist. You can customize the prompts that are played for the caller, but you cannot customize how the software interacts with the customer.

You can set up auto attendant in the following modes:

- Auto Attendant with One Menu for All Hours
- Auto Attendant with Different Menus for Open and Closed Hours

Auto Attendant with One Menu for All Hours

Select this option to specify the generic auto attendant settings for all hours. Table 12-1 describes the settings that display when you select Auto Attendant with One Menu for All Hours.

Table 12-1   Fields Descriptions for Auto Attendant with One Menu for All Hours Mode

Setting	Description
Auto Attendant Extension	Displays the extension that users can dial for auto attendant. The extension number specified from the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard is displayed here.
Audio Greeting	Displays the current audio greeting file that is played when auto attendant is activated.
New File	To change the audio greeting, click **Browse** to select a new greeting file or click inside the text box to select a new greeting. **Note** Cisco Unified Communications Manager Business Edition 3000 supports only .wav audio file format.
Dial by Extension	Check the **Enable callers to dial lines directly** check box to allow the callers to directly dial the extension number after the greeting is played.

Table 12-1   Fields Descriptions for Auto Attendant with One Menu for All Hours Mode

Setting	Description
Key	Assign a key, from 1 to 0, on the phone for each extension. * and # are assigned for cancel and enter, respectively.
Transfer to Line	Specify the extension. When the caller presses the key, the call is transferred to the extension configured. **Note** If you update or delete a user extension on the User page and that extension is configured for the Transfer to Line setting on the Auto Attendant page, the Auto Attendant page displays that the extension is invalid for the setting. From the Transfer to Line drop-down list box, select another extension and save it.

Auto Attendant with Different Menus for Open and Closed Hours

This option allows you to have separate auto attendant settings for business and closed hours. When you select this option the following tabs are displayed:

- Business Hours—Table 12-2 describes the settings that are displayed on the Business Hours tab

- Open Hours Menu—Table 12-3 describes the settings that are displayed on the Open Hours Menu tab

- Closed Hours Menu—Table 12-3 describes the settings that are displayed on the Closed Hours Menu tab

Table 12-2   Fields Descriptions for Business Hours Tab

Setting	Description
Start Time	Specify the time for each day when you want to start auto attendant greeting. You can select the hours, in 24-hour format, from the first drop-down list and minutes from the second drop-down list. The time can be set for each day of the week.
End Time	Specify the time for each day when the auto attendant greeting stops playing. You can select the hours, in 24-hour format, from the first drop-down list and minutes from the second drop-down list. The time can be set for each day of the week.
Closed All Day	Check this check box if the office is closed on a particular day, for example, Sunday. The Start Time and End Time drop-down lists are disabled if you check this.

Open Hours Menu and Closed Hours Menu tabs display the same fields, but these tabs allow you to specify different auto attendant settings for open and closed hours.

Table 12-3   Fields Descriptions for Open Hours Menu and Close Hours Menu Tabs

Setting	Description
Audio Greeting	Displays the current audio greeting file that is played when auto attendant is activated.
New File	To change the audio greeting, click **Browse** to select a new greeting file, or click inside the text box to select a new greeting. Cisco Unified Communications Manager Business Edition 3000 supports only .wav audio file format.
Dial by Extension	Check the **Enable callers to dial lines directly** check box to allow the callers to directly dial the extension number after the greeting is played.
Key	Assign a key, from 1 to 0, on the phone for each extension.
Transfer to Line	Specify the extension number. When the caller presses the key, the call is transferred to the extension configured.
	Note If you update or delete a user extension on the User page and that extension is configured for the Transfer to Line setting on the Auto Attendant page, the Auto Attendant page displays that the extension is invalid for the setting. From the Transfer to Line drop-down list box, select another extension and save it.

Backup Settings

GUI: Cisco Unified Communications Manager Business Edition 3000 Administrative Interface
Table 13-1 describes the settings that display on the Backup page (**Maintenance > Backup**), which allows you to run a backup immediately. Running a backup ensures that you store your important data to a remote location, such as a USB hard disk or SFTP server. To restore data after a system failure, for example, if you must reinstall or replace a server, you must have access to a backup tar file that matches the Cisco Unified Communications Manager Business Edition 3000 software version that is running on your server. The backup does not back up your call detail records. To save call detail records, you must export them in .csv format. (**Monitoring > Call Detail Reports**)

Table 13-1   Settings on the Backup Page

Setting	Description
Storage Device Connected to System USB Port	To store your tar file to a USB hard disk, click **Storage Device Connected to System USB Port** and browse to the location where you want to store the file.
	When you back up to a USB hard disk, the system analyzes whether you have enough space to run the backup. If you do not have enough space, a message displays on the page.

Table 13-1   Settings on the Backup Page (continued)

Setting	Description
SFTP Server	Cisco allows you to use any SFTP server product but recommends SFTP products that are certified with Cisco through the Cisco Technology Developer Partner program (CTDP). CTDP partners, such as GlobalSCAPE, certify their products with a specified release of your software. For information on which vendors have certified their products with your version of software, refer to the following URL:
	http://www.cisco.com/pcgi-bin/ctdp/Search.pl
	For information on using GlobalSCAPE with supported Cisco Unified Communications versions, refer to the following URL:
	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 (refer to http://sshwindows.sourceforge.net/)
	• Cygwin (refer to http://www.cygwin.com/)
	• Titan (refer to http://www.titanftp.com/)
	⚠ **Caution** Cisco does not support using the SFTP product freeFTPd because of the 1 GB file size limit on this SFTP product. For issues with third-party products that have not been certified through the CTDP process, contact the third-party vendor for support.
	To store the tar file on a SFTP server, perform the following tasks:
	1. Click **SFTP Server**.
	2. Enter the IP address or hostname of the SFTP server where you want the tar file to be located.
	3. Enter the username and password for the SFTP server.
	4. Click **Browse** to browse to the location where you want the tar file to be stored on the SFTP server.

Table 13-1   Settings on the Backup Page (continued)

Setting	Description
Run Backup	To initiate a backup, click **Run Backup**. When you click this button, the backup starts immediately. Consider running a backup under the following circumstances: • You made configuration changes to the administrative interface; for example, you added, edited, deleted, or duplicated information. In the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface, users can update their speed dials for their phones. If an end user updates the speed dials, these changes automatically get propagated to the User page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**Users/Phones > Users**). You may not be aware when an end user makes a change to speed dials, so you may want to back up your system occasionally to ensure that the latest changes are backed up. • You identified a problem with the tar file that is backed up to the USB hard disk or SFTP server. • You identified a problem with the USB hard disk or SFTP server, and your tar file is not available or is not functional. • You are about to upgrade the software that is running on your server. **Tip** Run backups when you expect less network traffic. To stop the backup, click **Cancel**. ⚠ **Caution** If the backup is not completed within 1 hour, the backup session may time out. If it times out, you must run the backup again.

C H A P T E R **14**

Call Detail Reports

GUI: Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

Call detail records (CDRs), which display under the Call Detail Reports page, provide important data about calls, including the date and time for the call, who made the call, the reason why the call ended, and so on. CDRs store information about the devices of the call and other call control/routing aspects. Call detail records are automatically generated with Cisco Unified Communications Manager Business Edition 3000; you do not need to perform any tasks for the system to generate these types of records. When a call is placed or received, the system automatically generates a call detail record when the call is terminated. In addition, the system generates a record when significant changes occur to a given call, such as ending the call, transferring the call, redirecting the call, splitting the call, and so on.

Cisco Unified Communications Manager Business Edition 3000 Release 8.6 introduces the ability to offload Call Detail Reports to an application server for analysis and billing. When the CDR Offloading is configured and enabled, CDRs are offloaded to the remote application server once per minute.

The following topics contain information about the tabs and settings that display on the Call Detail Reports page (**Monitoring > Call Detail Reports**):

Tip The system keeps up to 2 months of call detail records. After 2 months, the system automatically purges the records. If you need to save the records, export the data. After an upgrade of your system, the call detail records display.

Date Range and Time Zone

Table 14-1 displays the date range and time zone settings that you can use to search for call detail records under the Summary and Call Details tabs.

Table 14-1   Date Range and Time Zone Settings That Relate to Summary Tab and Call Details Tab

Setting	Description
Date Range	To search for CDR information within a specific date range, enter dates in the From and To fields; then, click **Display Data**. You can also select a date from the interactive calendars that display to the right of the From and To fields.
Time Zone	This field, which is read only, displays the time zone for the central site where the server is located.

Summary Tab

Table 14-2 describes the settings that display under the Summary tab. You can search for CDR summary information by entering specific dates.

Table 14-2   Settings on the Summary Tab

Setting	Description
Table for Gateway Calls	For the dates that you select for the date range, this table displays the total minutes for gateway calls, which are calls that goes through the gateway to the PSTN. You can also view the average call per minute and the number of calls that go through the gateway.
Table for Call Summary	This table displays data, including the number of minutes per call, and so on, for all calls that have occurred during the date range that you specify. The call summary table includes the total number of internal calls plus the total number of gateway calls from the gateway calls table.

Call Details Tab

Table 14-3 describes the settings that are displayed under the Call Details tab. You can search for detailed CDR records by date range on this tab.

Table 14-3   Settings on the Call Details Tab

Setting	Description
Filter	To narrow your search to find a particular type of call detail record for the date range that you specified, select a search parameter from the Filter drop-down list box; enter a value in the field next to the Filter drop-down list box and click **Go**. To find all records, click **Go** without selecting any search criteria.
Go	To search for the call detail records within the date range that you specified, click **Go**.
Clear Filter	To remove text that you entered for the search criteria, click **Clear Filter**.
Showing per page	Select the maximum number of records that you want to display on the search page.

Table 14-3   Settings on the Call Details Tab (continued)

Setting	Description
Results Table	This table displays search results and includes the following information:
	• Originating Date/Time—This column displays the date and time that the call originated.
	Calling
	• Number—This column displays the phone number of the calling party.
	• Device—This column displays the name for the device (gateway or phone) of the calling party. If the gateway displays, the call arrived from the PSTN.
	• User ID—This column displays the user ID of the user; that is, if a user ID is available.
	• Termination Reason—If this side of the call terminated the call, this column displays the reason why the call ended.
	Tip Termination reasons exist for calling and called parties. Only one of the two columns display a reason; the other column displays as blank. The column that display the reason indicates which side of the call terminated the call.
	Called
	• Number—This column displays the phone number of the called party.
	• Final Number—This column displays the phone number of the final destination of the call.
	• Device—This column displays the name of the device (gateway or phone) of the called party. If the gateway displays, the call went over the PSTN.
	• Termination Reason—If this side of the call terminated the call, this column displays the reason why the call ended.
	Call
	• Connection Date/Time—This column displays the date and time that the call connected.
	• Duration—This column displays the total length of time of the call.
	• Type—This column displays the type of call (such as internal, international, or long distance).

Table 14-3   Settings on the Call Details Tab (continued)

Setting	Description
Export Data	Click **Export Data** to download the CDR information that is displayed in the results table. The search filter criteria displays the complete Call Details Report information available from the day Cisco Unified Communications Manager Business Edition 3000 software is installed. You can export the CDR information in .csv format. The .csv file contains more information than is displayed in the Call Details Report page.
	Note Cisco Unified Communications Manager Business Edition 3000 does not export the call detail records for a particular duration or time.
	Caution Cisco Unified Communications Manager Business Edition 3000 does not back up the call detail records when you run a backup. If you need to save your call detail records, export the data.
	Cisco recommends that you export your call detail records before you upgrade your Cisco Unified Communications Manager Business Edition 3000 software.
Page	The Page setting displays which page of records you are viewing and the total number of pages of records; for example, Page 1 of 2 indicates that you are displaying page 1 and that 2 total pages of records exist. To go to another page of records, enter the page number.

Call Details Report Offloading

Use the following procedure to configure remote servers to which you want to send CDRs.

Procedure

Step 1   Choose **System Setting**s > **Call Detail Offloading**.

The Call Detail Offloading window is displayed.

Step 2   Check the **Enable regular offloading of CDR files to a remote server** check box.

Step 3   Perform one of the following tasks:

- To add a new application remote server, enter the appropriate settings as described in .
- To update an existing application remote server, click the parameter field you want to change and enter the appropriate settings as described in .

Step 4   Click **Test Connection** to confirm the following:

- Server is reachable

- User ID and password are valid

- Directory path exists on server

Step 5   Click **Save** to save the configuration or click **Reset** to reset to the previous saved configuration.

If the save operation fails an error message appears describing the reason for the failure.
You can click **Cancel** to return to the configuration page or click **Save** to save the changes anyway.

Remote Server Parameter Settings

Table 14-4 describes the available settings in the Remote Server Parameters section of the Call Detail Offloading window.

Table 14-4   Remote Server Parameter Settings

Field	Description
IP Address	Enter the IP address of the remote server to which you want to send CDRs.
User Name	Enter the username of the remote server.
Protocol	Choose the protocol, either FTP or SFTP, that you want to use to send the CDR files to the configured remote servers.
Directory Path	Enter the directory path or click **Browse** to navigate to the remote server to which you want to send the CDRs. You should end the path that you specify with a "/" or "\", depending on the operating system that is running on the application billing server. **Note** Make sure the FTP user has write permission to the directory.
Password	Enter the password that is used to access the remote server.
Local System Name	Enter a unique name for the local system. This name is displayed in the logs. The local system name translates to the Cluster ID.

C H A P T E R 15

Country/Locale Settings

GUI: Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard

The Country/Locale page allows you to set up the support for the following items:

- The locale, which is the language that displays for text in the online help, in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, and the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface; the locale also impacts the tones that are used for the phones and gateway.

  The locale that you select impacts all users in the system; for example, all phones use the same network tones, and all users view the same language in the GUIs.

- The country where the Cisco Unified Communications Manager Business Edition 3000 server is located. The country that you select determines the dial plan that is used by the system.

Note   Cisco recommends that all users set their supported browsers to the locale that is selected on this page so that the text displays as expected. Cisco does not support other browser controls, including the Print, Back, Forward, Refresh buttons, with any Cisco Unified Communications Manager Business Edition 3000 interfaces.

If you change the browser to the locale after you log into the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, close and reopen the browser so that the language displays as you expect.

Some text, including trademarks, may display in English_United States on the phones, in the online help, and in the interfaces.

Caution   After you complete the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, you cannot change the locale or country again, although you can view the country and locale that you selected in Date/Time page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**System Settings > Date/Time**). Make sure that you select the correct country and locale in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard.

Table 15-1 describes the settings on the Country/Locale page.

Table 15-1   Settings on the Country/Locale Page

Setting	Description
Country/Language	The Language drop-down list box displays the countries and locales that are installed by default with your system. If you do not plan to install a country pack, select the country and locale that you want to use for your system. (This selection also chooses the dial plan for your system.) **Tip** You cannot change the country or locale after you complete the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, so select a country and locale that applies to all users in the system. If users set the browser to a different language than the one that is selected from the Language drop-down list box, the text may not display as expected in the GUIs or in the online help.
Install Country Pack	The Language drop-down list box allows you to select a country and locale that is installed by default with the system. If none of the options in the Language drop-down list box apply to your system, you can install a country pack, which includes the locale, tones, and dial plan for a country. **Note** Country Pack supports the following countries: North American Numbering Plan, India, United Kingdom, China, Australia, France, Russia, Canada, Mexico, and Saudi Arabia. To install a country pack, obtain the country pack from www.cisco.com and copy it to your PC desktop or a USB key. If you plan to install the country pack from a USB key, make sure that you insert the USB key into the Cisco Unified Communications Manager Business Edition 3000 server before you click Install Country Pack. The size of the file and/or your network configuration may increase the amount of time that it takes to upload a file. For example, if you use the PC desktop to upload a file over the WAN, the upload or installation may take longer than if you upload it over the LAN or use a USB key. You can only install one country pack.

C H A P T E R **16**

Cisco Extension Mobility Report

GUI: Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

With Cisco Extension Mobility, a phone user can log in to a phone where Cisco Extension Mobility is enabled and use the phone features that are assigned to him; that is, if Cisco Extension Mobility-enabled phone features support the same features as the desk phone. For a user to use Cisco Extension Mobility, you must enable Cisco Extension Mobility in the usage profile (**Users/Phones > Usage Profile**) and then assign the usage profile to the user (**Users/Phones > Users**).

Table 16-1 describes the categories that display on the Cisco Extension Mobility Report page (**Monitoring > Extension Mobility Report**). The report, which obtains its information from the database, provides status of Cisco Extension Mobility usage.

Tip   To create another report, click the Extension Mobility Report menu option again.

Table 16-1   Categories on the Cisco Extension Mobility Reports Page

Category	Description
Summary	This section lists the number of phones where Cisco Extension Mobility is enabled and the number of users that are currently logged into Cisco Extension Mobility-enabled phones.
	The summary table lists the users that are currently logged into Cisco Extension Mobility-enabled phones and the phone that is being used. You can also view the date and time when the user logged into the phone.
	Tip For the table to display data, the number of users that are currently logged into Cisco Extension Mobility-enabled phones must be greater than zero, as indicated for the Active Cisco Extension Mobility sessions.

Configuration Export Settings

GUI: Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

Table 17-1 describes the settings that display on the Configuration Export page (**Maintenance > Configuration Export**), which allows you to export the data that exists in the Cisco Unified Communications Manager Business Edition 3000 database to a tar file.

For more information and for a configuration checklist, see the "Exporting Your Data and Importing to Cisco Unified Communications Manager Business Edition 5000" section on page 9-5.

Table 17-1 *Settings on the Configuration Export Page*

Setting	Description
Storage Device Connected to the System USB Port	To export your configuration data to a USB key or USB hard disk, click **Storage Device Connected to the System USB Port**, and browse to the location where you want to copy the .csv file.

Table 17-1   Settings on the Configuration Export Page (continued)

Setting	Description
SFTP Server	To store the .csv file to the SFTP server, perform the following tasks:
	1. Click **SFTP Server**.
	2. Enter the IP address or hostname of the SFTP server where you want to store the .csv file.
	3. Enter the username and password for the SFTP server.
	4. Click **Browse** to browse to the location where you will store the .csv file on the SFTP server.
	Cisco allows you to use any SFTP server product but recommends SFTP products that are certified with Cisco through the Cisco Technology Developer Partner program (CTDP). CTDP partners, such as GlobalSCAPE, certify their products with a specified release of your software. For information on which vendors have certified their products with your version of software, refer to the following URL:
	http://www.cisco.com/pcgi-bin/ctdp/Search.pl
	For information on using GlobalSCAPE with supported Cisco Unified Communications versions, refer to the following URL:
	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 (refer to http://sshwindows.sourceforge.net/)
	• Cygwin (refer to http://www.cygwin.com/)
	• Titan (refer to http://www.titanftp.com/)
	⚠
	Caution Cisco does not support using the SFTP product freeFTPd because of the 1 GB file size limit on this SFTP product. For issues with third-party products that have not been certified through the CTDP process, contact the third-party vendor for support.

Table 17-1   Settings on the Configuration Export Page (continued)

Setting	Description
Run Export	To create a .csv file that will download to the location that you specified, click **Run Export**. When you click this button, the process starts immediately.
	Tip Depending on the size of the database, this process may take significant time to complete.

C H A P T E R **18**

Date and Time Settings

Impacted GUIs: Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard and Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

The Date and Time page allows you to set the system settings such as the time zone and time. The phones and server use the information that you provide on this page; that is, the phones display the time that you select, and the server uses the information for logs, call processing, and so on. Table 18-1 describes the settings that display on the Date/Time page (**System Settings—Date and Time**).

After you complete the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, you access the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface to update the date and time for the system (**System Settings > Date/Time**).

Table 18-1   Settings on the Date and Time Page

Setting	Description
Country	This setting, which is read-only, displays the country where your central site and server are located.
User Locale	This setting, which is read-only, displays the locale that is running on your system. This setting displays in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.
System Time Zone (or Time Zone)	From the drop-down list box, select the time zone that supports your central site. Time Zone comprises a list of time zones for the selected region. Scroll through the list to select the appropriate time zone.
System Date	Click the calendar icon and select a date from the calendar that displays. You can also enter a date in *MM/DD/YYYY* format.
System Time	To specify the time, click the field and either enter a new time or select a time from the drop-down list box that displays.

Department Settings

Impacted GUIs: Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

In the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, you can add, edit, and delete departments. Table 19-1 describes the settings that display on the Department page (**Users/Phones > Department**), which allows you to add and edit a department.

The system defines a department as a type of user that is exclusively used for public-space phones. If you use public-space phones, you must create department(s). Creating departments allows you to group together public-space phones that use common functionality and features; for example, if you want all phones in break rooms to use the same phone features, create departments for break rooms. Departments do not get assigned to specific users; they are intended for phones in public spaces.

Table 19-1   *Settings on the Department Page*

Setting	Description
Name	Enter the name of the department. This name describes the purpose of the department, and the name displays in the Departments search page. Enter up to 64 characters, except for quotation marks (").
Usage Profile	Select the usage profile that you want to assign to the department. Assign a usage profile that is intended for phones that are in public spaces; for example, to restrict the type of calls that can be made on public-space phones, make sure that you select a usage profile that restricts that type of call.
Department ID	Enter the unique identification name for the department. For example, enter lobby_dept, cafeteria_dept, and so on. Some companies have unique department IDs that contain digits, and so on. If you have a department ID from your company, enter it in this field. The value that you enter displays in the call detail records (CDRs). Enter up to 64 characters, except for quotation marks (").

Table 19-1   Settings on the Department Page (continued)

Setting	Description
Line Number External Caller ID Call Forward All	For lines that you want to add to this department user, perform the following tasks: 1. In the Line Number field, enter the extension for the line. The value that you enter must exist within the extension range that is specified in the dial plan (**System Settings > Dial Plan**). 2. In the External Caller ID field, enter the phone number that identifies the public-space phone when a user makes an outgoing call over the PSTN. 3. To forward all incoming calls for the phone to another number, enter the phone number, including an outside dial code, area code, and so on, in the Call Forward All field. (Enter a phone number as if you were placing a call on the phone.) The first row specifies the primary line for the phone. To make a secondary line the primary line, click the arrow icon. The secondary line moves to the top of the list and becomes the new primary line, and the former primary line becomes the secondary line and displays immediately after the new primary line. To add more rows, click the plus icon. To delete a row, select the row and click the minus icon. **Tip** The phone button template that is assigned in the usage profile determines the order of buttons on the phone. If the phone model does not support all of the buttons that are specified in the phone button template, only the number of buttons that the phone supports display on the phone.
Show Department's Phones	To identify a list of phones that associate with the assigned lines for the department, click **Show Department's Phones**. After you view the list, click **OK**. **Note** This field displays in the Line Numbers section on the Edit Departments page.

Table 19-1   Settings on the Department Page (continued)

Setting	Description
Phone Label Phone Number	You can only set speed dials for a public-space phone in these fields. (Users can update their speed dials in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface.) For speed dials, perform the following tasks: 1. Enter the phone label and associated phone number in the rows. In the Phone Label field, enter any characters. In the Phone Number field, enter a phone number that includes an outside dial code, area code, and so on. (Enter a phone number as if you were placing a call on the phone.) 2. To reorder the speed dials, click the arrows. 3. Save your changes. **Tip** To clear the data that you entered for a speed dial, click the **x** button; then, click **Save** to save your changes. **Tip** The phone button template that is assigned in the usage profile determines the order of buttons on the phone. If the phone model does not support all of the buttons that are specified in the phone button template, only the number of buttons that the phone supports display on the phone.

C H A P T E R 20

Devices Settings

Impacted GUIs: Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard and Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

The Device Settings page allows you to edit and delete devices. You can also generate CLI functionalities for ISR2901 gateways in the Device Settings page.

Table 20-1 describes the settings that display on the Devices page (**Connections > Devices**).

> **Note** You can edit both MCS7890-C1 and ISR2901 device type gateways. You can delete only ISR2901 device type gateways.

Table 20-1   Settings On the Devices Page

Setting	Description
Edit	Click the **Edit** link corresponding Gateway connection to edit the configuration settings.
Delete	Click the Delete link corresponding to the Gateway connection settings to delete the gateway. A confirmation message appears and click Delete to delete the gateway. **Note** You cannot delete MCS7890-C1 gateway. You can delete only ISR2901 gateway. ⚠ **Warning** **If you delete a gateway, all the PSTN connections corresponding to the gateway will be deleted.**
Generate CLI Commands **Note** This feature is available for ISR2901 devices only.	Click this to generate commands to configure ISR2901 gateways. Copy the CLI commands to the ISR2901 telnet or a serial-interface command line to configure the gateway. You need to generate CLI commands only for ISR2901 gateways. The MCS7890-C1 Gateway do not require generation of CLI commands.

Table 20-1   Settings On the Devices Page (continued)

Setting	Description
Conferencing/Transcoding Settings **Note** This features is available for ISR2901 devices only. For MCS7890-C1 device, the internal gateway serves as a transcoding/conferencing device.	Choose the ISR2901 device that provides resources for transcoding and conferencing on the Cisco Unified Communications Manager Business Edition 3000. If you change the designated device you will need to update the configuration of both the previously designated and the newly designated devices.

Diagnostics Settings

GUI: Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

The Diagnostics page allows you to run diagnostics for your system, gather diagnostic information for your system, and download the diagnostic information. On the Diagnostics page, you can collect logs, enable or disable loopback for T1/E1 interfaces, and download the USB diagnostics file.

The following topics contain information about the tabs and settings that are displayed on the Diagnostics page (**Monitoring > Diagnostics**):

- Collect Logs, page 21-1
- USB Key, page 21-2
- Packet Capture, page 21-2
- Ping, page 21-3
- Gateway Loopback, page 21-4

For more information, see the "How to Diagnose a Problem" section on page 46-39.

Collect Logs

Table 21-1 describes the settings that you can use to enable or disable detailed logging, generate logs, and download the log file under the Collect Logs tab.

Table 21-1 Settings on the Collect Logs Tab

Setting	Description
Enable Logging	To enable the system to collect debug level log data, click **Enable Logging**. After you click this button, it grays out and the Disable Logging button becomes enabled. You can now attempt to reproduce your system issue.
	Tip Turning on logging may impact system performance, so enable logging only when necessary. After you finish collecting log data, remember to disable logging by clicking **Disable Logging**.

Table 21-1   Settings on the Collect Logs Tab (continued)

Setting	Description
Disable Logging	When you have reproduced the system issue, click **Disable Logging** to stop the system from collecting log data. After you click this button, it grays out and the Enable Logging button becomes enabled.
Generate Log File	To prepare a log file, click **Generate Log File**. **Tip** You can generate a log file without enabling/disabling the logging functionality by clicking **Generate Log File** at any time and downloading the current log collection file. The system displays the progress of the log file generation. When the log file is complete, a link displays that you can click to download the file to your PC. The link contains the time and date that the log file was created. **Tip** Be sure to download the file to a location on your PC that contains enough disk space to accommodate the size of the log file.

USB Key

Cisco USB key allows you to perform the server diagnostics and collect the required log files when the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface is not accessible. You can use the USB Key tab to download the diagnostics file.

Note Ensure that the USB key has a storage space of 4 GB. If there is not sufficient storage space, the files smaller than 4 GB will be copied to the USB.

To download the USB diagnostics file, click **Download Diagnostics File**. The USB diagnostics file allows the Value Added Reseller (VAR) and Cisco Technical Assistance Center (TAC) to provide additional troubleshooting assistance, especially when you cannot access the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Packet Capture

The Unified CMBE 3000 Administrative Interface supports capturing the network packets on a server. While troubleshooting, it is sometimes necessary to collect network packets that are being sent to and from the network interface on a Unified CMBE 3000 server.

Table 21-2 describes the settings on the Packet Capture tab.

> **Note** Packet Capture is resource-intensive and the system might be less responsive while it is enabled.

Table 21-2   Settings on the Packet Capture Tab

Setting	Description
Capture Packets	Packet Capture allows you to capture the network packets in two ways: • **Capture packets to and from IP address**—Choose this option to capture the network packets to and from a particular IP address. • **Capture all packets**—Choose this option to capture all the network packets.
Start Packet Capture	To start packet capture, click **Start Packet Capture**. The time stamp displays the current date and packet capture start time. If the packet capture file exists on a system, the following warning message appears: **Warning** **You can keep only one packet capture file on the server at a time. If you generate a new one, the existing file will be replaced with the new one.** While the packet capture is running, you can also attempt to reproduce the problem.
Stop Packet Capture	To stop the packet capturing, click **Stop Packet Capture**. The time stamp displays the current date and packet Capture stop time. Packet capture stops when it captures 100,000 network packets. The captured packets are saved in Packetcapture< Timestamp in YYYY-MM-DD_hh-mm-ss>.cap file format. The time stamp displays the time when the packet capturing was started.
Download the log file to your PC	A link allows you to download the captured network packets to your PC. **Note** You should have the corresponding software tools installed on your PC to view the downloaded network packets.

Ping

Unified CMBE 3000 Administrative Ping utility interface allows you to check the network connectivity for the desired IP Address or a hostname to which you want reach. While check the connectivity, you can mention the number of attempts that the system can try.

Table 21-3 describes the test characters that the ping facility sends.

Table 21-3   Settings on the Ping Tab

Setting	Description
Ping function	To check connectivity by using the Ping utility, perform the following: • Type the **hostname** or **IP address** to be reached. If DNS is not available on server, entering hostname will not work • Select the number of the **Ping Attempts** from the drop-drown list. After reaching the specified number of attempts mentioned in the drop-down list, the Ping operation will be automatically stopped. By default, the number is "1". The other available attempts are 5, 25, and 100.
Start Ping	To start a ping session, Click the **Start Ping** button. Ping stops automatically after reaching the specified iteration number. The output shows the results of the Ping Attempts with the results summarized at the end.
Cancel Ping	After you click the **Start Ping** button, the button label changes to **Cancel Ping** and allows you to cancel the ping session. Ping statistics will not be available if ping is cancelled. **Note** If you click the **Cancel Ping** button in the middle of a ping process, the ping operation is cancelled for the remaining iterations. A message appears in the Ping output box stating "Ping Cancelled".

Gateway Loopback

Table 21-4 describes the settings on the Gateway Loopback tab. Your service provider uses loopback test to diagnose connection problems in the network and may ask you to put your T1/E1 interfaces (ports) into loopback mode. You can use the settings on the Gateway Loopback tab to enable or disable loopback mode for the internal gateway ports.

Caution   Do not add, update, or delete any of the internal gateway ports when you put a port in loopback mode. Adding, updating, or deleting a port can reset the internal gateway and will pull the port out of loopback mode.

Note   You can use the Gateway Loopback tab to initiate loopback for internal gateways only. It is not applicable for external gateways.

Table 21-4   Settings on the Gateway Loopback tab

Setting	Description
Port	Displays all the internal PSTN gateway ports.
Connection Name	Displays the name of the gateway to which the port belongs.
Description	Provides a brief description of the port.
Status	Displays the status of the port, that is, up, down, or unregistered.
Enable Loopback	To put a port in loopback mode, click **Enable Loopback**. After you click this option, you can either **Disable Loopback** or **Cancel**. After you put a port in loopback mode, the gateway to which that port belongs is unregistered. You can verify this through the Health Summary page. **Tip** You cannot enable loopback if the gateway for that port is not configured.
Disable Loopback	When your service provider completes the testing and asks you to disable loopback, click **Disable Loopback** to recover the port from loopback. After you click this option, it changes to **Enable Loopback**.

Gateway Loopback

C H A P T E R 22

Dial Plan Settings

Impacted GUIs: Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard and Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

Tip Dial plan settings also display in the Cisco-provided .xls data configuration file. Translation rule settings are not included in the Cisco-provided .xls data configuration file.

Dial Plan configuration settings allows you to configure the dial plan including the business number, extensions, and dialing prefixes. You can create a simplified dial plan for sites, users, and phones. See the following section for more information on setting up your dial plan.

- Dial Plan Settings, page 22-1
- Translation Rules Settings, page 22-3

Dial Plan Settings

On the Dial Plan page, you can configure the main business number for the company, the extension length and extension range, and access codes that the user presses to perform certain tasks, such as accessing the operator. Table 22-1 describes the settings on the Dial Plan page. In the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, these settings display under the General tab. In the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, no tabs display on this page.

Table 22-1 Settings on the Dial Plan Page (General Tab)

Settings	Description
Business Number	
Main Number	Enter the main board or business number. This number cannot be lesser than the value selected for Extension Length. For example, if the Main Number is 24564 and the Extension Length is 8, you have to either change this number or the Extension Length value. The maximum length allowed is 11 digits.

Table 22-1   Settings on the Dial Plan Page (General Tab) (continued)

Settings	Description
Extensions	
Extension Length	Select the value of the extension from the drop-down list. The values are from 4 to 11. The length of Main Number cannot be lesser than the value selected here.
	You cannot update this field in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.
Default Allowed Extensions	This setting displays the default extension number range, which depend on the values set for Main Number and Extension Length. For example, if the Main Number is 236758901 and Extension Length is 4, then the Default Allowed Extension starts with the fourth number last digit of the Main Number, which is 8 in this case. So, the Default Allowed Extensions would be the value 8000-8999.
Additional Allowed Extensions	Enter, if required, additional extension number range. For example, 5000-5999. You can enter more than one range separated by commas.
Voicemail and Auto Attendant Extension	Enter the pilot extension number for voicemail and auto attendant. This number is based on the extension range displayed in Default Allowed Extension or Additional Allowed Extensions, if it is specified.
Dialing Prefixes	
Dialing prefixes are the first digits that the user presses on the phone when the user contacts the operator, places a call over the PSTN, and uses some phone features. Ensure that each code is unique.	
Operator Dial Code	Enter the number that the user presses on the phone to contact the operator.
Outside Dial Code	Enter the number that the user presses on the phone to place external calls (calls that are placed outside the company that go through PSTN).
	Note If you specify the outside dial code as '0', the number will be sent.
Feature Dial Code	Enter the number that the user must press on the phone when the user uses some features, such as call park, call pickup, and Meet-Me conferences.
Advanced Settings	
Interdigit Timeout	Enter the number of seconds the user waits after dialing a number, prior to the system placing this call.
	By default, the value is 15.

Table 22-1   Settings on the Dial Plan Page (General Tab) (continued)

Settings	Description
Save	Click **Save** to save your changes.
Reset	Click **Reset** to discard your changes and display the saved data.

Translation Rules Settings

Translation rules allow Cisco Unified Communications Manager Business Edition 3000 to manipulate one extension number to another extension number before routing the call.

The following scenarios show examples of when you would configure translation rules:

- To translate the Meet-Me conference number to an extension
- To translate a toll-free number, such as an 800 number, to an extension
- To translate an extension to a pilot extension in a hunt list

These settings, which are described in Table 22-2, only display in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Table 22-2   Settings on the Translation Rules Tab

Settings	Description
Incoming Number Outgoing Number Description	Perform the following procedure to configure translation rules. 1. In the incoming number field, enter a string of digits that is unique in its last N digits and within the extension range that exists in the dial plan. N is the extension length. **Note** All the incoming numbers are restricted to the number of digits in the extension and then the routing and translation are performed. 2. In the outgoing number field, enter the string of digits that you want Cisco Unified Communications Manager Business Edition 3000 to translate for the incoming number (extension). This string may not be unique; the string may be used for multiple outgoing numbers. 3. Enter a description that indicates the purpose of the translation rule. 4. To add more translation rules, click the **+** icon. To delete a translation rule, click the **-** icon.

Table 22-2   Settings on the Translation Rules Tab (continued)

Settings	Description
Save	Click **Save** to save your changes.
Reset	Click **Reset** to discard your changes and display the saved data.

C H A P T E R 23

Hunt List Settings

GUI: Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

Table 23-1 describes the settings that display on the Hunt List page (**Users/Phones > Hunt List**). A hunt list consists of a group of extensions that can answer calls. These extensions can belong to users or departments. You can assign any extension to the hunt list, but only those extensions that are assigned to phones can actually answer the calls.

An extension may belong to more than one hunt list.

Table 23-1   Settings on the Hunt List Page

Setting	Description
Pilot Extension	Enter the extension that serves as the pilot for the hunt list. This extension serves as the trigger for hunting to begin. When this extension is called, Cisco Unified Communications Manager Business Edition 3000 uses the method that is specified in the Hunt Type setting to distribute the call to an extension in the hunt list. Enter an extension that is in the dial plan, but do not assign the extension to a user or department.
Name	Enter a unique name for the hunt list. To easily identify the hunt list, consider appending the pilot extension to the name; for example, hl5001.

Table 23-1   Settings on the Hunt List Page (continued)

Setting	Description
Hunt Type	Select how Cisco Unified Communications Manager Business Edition 3000 distributes the calls to members of the hunt list:
	An idle member is not servicing any calls. An available member is on an active call but is available to accept a new call. A busy member cannot accept calls.
	• Top Down—If you choose this distribution algorithm, Cisco Unified Communications Manager Business Edition 3000 distributes a call to idle or available members (extensions) starting from the first idle or available member of a hunt list to the last idle or available member.
	• Circular—If you choose this distribution algorithm, Cisco Unified Communications Manager Business Edition 3000 distributes a call to idle or available members starting from the (n+1)th member of a hunt list, where the nth member is the member to which Cisco Unified Communications Manager Business Edition 3000 most recently extended a call. If the nth member is the last member of a hunt list, Cisco Unified Communications Manager Business Edition 3000 distributes a call starting from the top of the hunt list.
	• Longest Idle Time—If you choose this distribution algorithm, Cisco Unified Communications Manager Business Edition 3000 only distributes a call to idle members, starting from the longest idle member to the least idle member of a hunt list.
	• Broadcast—If you choose this distribution algorithm, Cisco Unified Communications Manager Business Edition 3000 distributes a call to all idle or available members of a hunt list simultaneously.
	Caution Do not put extensions that are shared lines in a hunt list that uses the Broadcast distribution algorithm. Cisco Unified Communications Manager Business Edition 3000 cannot display shared lines correctly on the phone if the extensions are members of a hunt list that uses the Broadcast distribution algorithm.

Table 23-1 Settings on the Hunt List Page (continued)

Setting	Description
Extensions	All extensions that are assigned to users or departments can be included as members of a hunt list.
	From the list of extensions that display, select which extensions should be included in the hunt list. Extensions that display in the Selected section are included in the hunt list. (If the extension is not assigned to a phone, the user cannot pick up the call that is distributed.)
	To order the extensions in the Selected section, click the up and down arrows.
Forward If No Extensions Are Available	If no members of the hunt list are available to answer a call, you can forward the call to another extension. Check the check box and select the extension where you want to forward the call.

C H A P T E R 24

Health Summary

GUI: Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

The Health Summary page provides status information about your system and assistance with troubleshooting issues. The Health Summary page displays subsystems (Table 24-1) and status messages for each subsystem. If no problem occurs in the subsystem, a green check mark and the message, *This subsystem is operating normally*, is displayed for the subsystem. If an issue occurs in the subsystem, a red cross displays next to the category, and a status message indicates that an issue occurred.

Although you can monitor the system health through the Health Summary page, it does not provide detailed status like a console. The status is displayed only when there are issues in the system.

The status of the system gets checked every 30 seconds. When a check occurs, the status that is currently displayed is compared to the status that is returned from the server. If the status does not match, the status message and icon get updated on the page. (For example, if an issue occurred and the system check indicates that the issue resolved itself, the status for the subsystem changes from a red cross to a green check mark.)

Tip Multiple issues may display at the same time for a subsystem. In this case, you can troubleshoot each issue separately by clicking **Troubleshooting information**. After you click the link, online help displays information on how to troubleshoot the issue.

Table 24-1 describes the subsystems that display on the Health Summary page (**Monitoring > Health Summary**).

Table 24-1   Categories on the Health Summary Page

Subsystems	Description
System Health	This category provides status for your server and the services that are running on your server. It also provides status of system parameters such as CPU Voltage, Temperature, and fan speed, if these parameters exceed the threshold values.
	For more details on the status of system parameters, refer to the Troubleshooting Issues section.
Telephony Network Gateways	This category displays status of your internal and external gateways; for example, this category identifies whether the gateway is unregistered from the system.

Table 24-1 *Categories on the Health Summary Page (continued)*

Subsystems	Description
Telephony Network Connection	This category displays status of the health of your Telephony Network connection; for example, whether your Telephony Network connection is operational, whether your gateway is connecting properly to the telephony network, and so on.
Internet Connection	This category displays status information for your internal network; for example, this category identifies issues with IP addresses, DNS, and host configuration.
Internal Network	This category displays the status of registered devices in the internal network such as phones, gateways, and trunks. If the number of registered devices is less than 66.67%, the status of registered devices is displayed as down.

For More Information

- Troubleshooting Issues, page 47-51
- How to Diagnose a Problem, page 46-39

C H A P T E R 25

License Settings

Impacted GUIs: Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard and Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

Cisco User Connect licensing allows you to track the users and phones in your system. The License page allows you to perform such tasks as installing Cisco User Connect licenses and viewing details about installed licenses, including the license version, the type of licenses, and the number of licenses that you used. Table 25-1 describes the settings that display on the System Settings - License page.

Tip The system uses (consumes) a unit in the license file after a phone configuration is added. The system comes automatically installed with a certain number of license units; you must have a certain number of units that the system can use before you install additional licenses. To install additional licenses before the user and phone configuration is added, you can install the licenses from the License page.

After you complete the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, you install licenses and view details about licenses in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**System Settings > Manage Licenses**).

Table 25-1   Settings on the Manage Licenses Page

Setting	Description
Available and Used License Bar Chart	To determine whether you are close to being out of licenses, view the number of licenses that are available for any particular type of license. In the bar chart, you can view the following: • Number of licenses that the system has used for any license type • Number of licenses that are unused but installed for any license type (available) If you oversubscribe licenses, the available units do not display in the bar for the license type because no licenses are available. All license types display in the chart, even if they do not apply to your system. **Tip** To determine the exact number of used, available, or oversubscribed licenses from the chart, hover over the color in the bar for the various license types; for example, if 20 enhanced user licenses have been used, a message, Used: 20, displays when you hover over the bar for enhanced user licenses.
Install Licenses	Your system automatically comes installed with a certain number of licenses. To install additional licenses, as determined by the system and displayed in the bar chart, you can click **Install Licenses** and browse to the location where the licenses are installed (either on your desktop or on a USB key). You can only install one license file at a time. Before you install licenses, review licensing interactions and restrictions in the "Interactions and Restrictions" section on page 4-6.
Descriptions tab	License types and descriptions display in the Descriptions tab. Use the scroll bars to display the descriptive information that you want to view. For more information, see the "Understanding The License Types" section on page 4-4.
License File tab	To view details about all license files, click the **License File** tab. You can view the name of the license file, the license type for the license, the Cisco Unified Communications Manager Business Edition 3000 software version that is associated with the license, and the total number of units, one unit per phone, that is included with the license file. The starter licenses that automatically come with your system do not display under this tab. To view the contents of the license file, click **View**.

C H A P T E R 26

Music On Hold Settings

GUI: Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

The music on hold feature plays music to users when they are put on hold. Music on hold audio source files must meet the following specifications:

- 16-bit PCM .wav file
- Stereo or mono
- Sample rates of 48 kHz, 44.1 kHz, 32 kHz, 16 kHz, or 8 kHz

For information on tasks that are performed to set up music on hold, see the "Music On Hold" section on page 5-11.

Tip Uploading a new audio source file replaces the current file on the system.

Table 26-1 describes the settings on the Music On Hold page where you can upload music on hold audio source files (**System Settings > Music On Hold**).

Table 26-1   Settings on the Music On Hold Page

Setting	Description
Uploaded Audio Source	This link displays the name of the music on hold file that is currently installed. The default file that is installed is SampleAudioSource. To listen to the audio source file, click the link and download the file to your desktop.
Upload from Desktop	To upload an audio source file from your desktop, click **Upload from Desktop** and browse to the location of the file.
Copy from System USB Port	To upload an audio source file from a system USB port, click **Copy from System USB Port** and browse to the location of the file. Ensure that the USB key is put in the port on the server before you copy the file.
Upload	To upload the file to the server, click **Upload**.
Cancel	If you do not want to upload the file, click **Cancel**.

Network Settings

Impacted GUIs: Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard and Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Tip You can also add the network settings to the Cisco-provided .xls data configuration file.

The Network Settings page allows you to update the IPv4 address or hostname for the Cisco Unified Communications Manager Business Edition 3000 server. You can also view and update the DNS, message transmission units, and link speed settings that you configured in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard. Table 27-1 describes the settings that display on the Network page (**Connections > Network**).

After you complete the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, you access the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface to update the network information (**Connections > Network**).

Caution After you update the Network Settings section and click **Save**, the server automatically reboots, and any calls that are in progress may drop.

For DNS, make sure that you map the IPv4 address of the Cisco Unified Communications Manager Business Edition 3000 server to the hostname on the DNS server. Cisco recommends that you update the DNS server before you change the hostname or IP address on the Network page.

If you update the IP address for the server, you must reissue the CLI commands for all the ISR2901 gateways that are listed on the Devices page (**Connections > Devices**).

Table 27-1   Settings on the Network Page

Setting	Description
Network Settings Information	
MAC Address	The MAC address of the Cisco Unified Communications Manager Business Edition 3000 is displayed here.
	You cannot update this field on the Edit Phone page.

Table 27-1   Settings on the Network Page (continued)

Setting	Description
IP Address (System)	This IP address identifies the server on this network and aids call processing and administrative access.
	The IP address must be in IPv4 format ddd.ddd.ddd.ddd where ddd is a value between 0 and 255 (except 0.0.0.0).
IP Address (Media Resources) **Note** This field is available for **MCS7890-C1** only.	This IP address identifies the media resource on the MCS7890-C1 for conferencing and transcoding features.
	The IP address must be in the format ddd.ddd.ddd.ddd where ddd is a value between 0 and 255 (except 0.0.0.0). The Media Resource IP Address must be in the same subnet as the System IP Address.
	Note In Cisco ISR2901 devices the gateway handles media resourcing.
	Note Ensure that the Media Resource IP address for Cisco MCS7890-C1 is unique to avoid transcoding and conferencing issues.
Subnet Mask	Enter the subnet mask, which allows you to identify the part of an IP address reserved for the network.
	The subnet mask must be in the format ddd.ddd.ddd.ddd where ddd is a value between 0 and 255 (except 0.0.0.0).
Default Gateway	Enter the default gateway, which represents a network point that acts as the entrance to another network.
	The default gateway must be in the format ddd.ddd.ddd.ddd where ddd can be a value between 0 and 255 (except 0.0.0.0).
Domain Name System (DNS) Information	
Primary DNS	Enter the IP address of the primary DNS server.
	The IP addresses of primary DNS server must be in the format *ddd.ddd.ddd.ddd* where *ddd* is a value between 0 and 255.
Secondary DNS	Enter the IP address of the secondary DNS server (optional)
	The IP addresses of the secondary server must be in the format *ddd.ddd.ddd.ddd* where *ddd* is a value between 0 and 255.
Domain	Enter the name of the domain where this node is located.
Link Speed Information	

Table 27-1   Settings on the Network Page (continued)

Setting	Description
Auto Negotiate	Select this option to negotiate the speed and duplex settings of the Ethernet network interface card (NIC) automatically if the opposite access point (for example, hub or Ethernet switch) to which this node is attached supports this activity. Auto negotiation negotiates the highest speed that is supported by both access points and favors full over half duplex.
	If you do not know the link speed and duplex settings for your NIC, select **Auto Negotiate**. Also, to configure a speed of 1000 megabits per second (Mbps) and have it supported by the opposite access point, you must select Auto Negotiate because 1000 Mbps cannot be configured manually; explicit speed and duplex settings are ignored, and full duplex is chosen if 1000 Mbps is negotiated. (If you do not select Auto Negotiate, make sure that you set the speed and duplex to the same settings as the network switch that is connected to the Cisco Unified Communications Manager Business Edition 3000 server.)
Set Manually	Select this option to enforce a particular speed and duplex setting.
	• Speed (Mbps)—Select 10, 100 or 1000 Mbps from the drop-down list box.
	• Duplex—Select Full or Half.
Message Transmission Unit Information	
Default	Select this option to set the Message Transmission Unit (MTU) size to 1500 bytes.
Set Manually	Select this option to set the Message Transmission Unit (MTU) size value between 552 and 1500 bytes.
Save File	This button displays only in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. To download the USB network.xml file, click **Save File**. This file allows you to change the hostname and IP address for the Cisco Unified Communications Manager Business Edition 3000 server when you cannot access the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. For more information, see the "Using the Cisco Network Configuration USB Key" section on page 6-4.
Save	When you edit data in the record, click **Save** to save your changes.
Reset	When you edit data in the record, click **Reset** to discard your changes and display the saved data.

C H A P T E R **28**

Phones Settings

GUI: Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

Tip Phone settings also display in the Cisco-provided .xls data configuration file.

In the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, you can add, edit, and delete phone configuration. Table 28-1 describes the settings that display on the Phones page (**Users/Phones > Phones**), which allows you to add and edit phone configuration.

Before you can add a phone, make sure that at least one user with at least one assigned extension displays in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**Users/Phones > Users**). In the Add Phone page, you assign a user (an owner) to the phone by assigning the extension for the user to Line 1.

As soon as the phone configuration is saved, the license for the phone is used (consumed) by the system. To determine the number of licenses that are available and used for your system, see the Manage Licenses page (**Maintenance > Manage Licenses**.)

Table 28-1   Settings on the Phones Page

Setting	Description
Registration Status	The registration status indicates whether the phone is connected to the Cisco Unified Communications Manager Business Edition 3000 server over the network. In the Add Phone page, the registration status does not display because the system does not yet know about the phone.
	Tip The Registration Status displays only on the Edit Phone page. The registration status may not immediately display because the phone is contacted to retrieve the registration status.
Phone Type	From the drop-down list box, choose the phone model that you want to add. You cannot update this field in the Edit Phone page.

Table 28-1   Settings on the Phones Page (continued)

Setting	Description
MAC Address	If this field displays, enter the MAC address for the phone, which is 12 hexadecimal characters. You can find the MAC address on the back of your phone.
	You cannot update this field in the Edit Phone page.
Identifier	If this field displays, enter any value that you want to indicate the device name.
	This field displays for some phones, including Cisco IP Communicator and Cisco Unified Client Services Framework.
	You cannot update this field in the Edit Phone page.
Gateway MAC Address	If this field displays, enter the MAC address for the Cisco VG224 Analog Phone Gateway.
	You cannot update this field in the Edit Phone page.
Port Number	If this field displays, select the port that you plan to use when you connect the Cisco VG224 Analog Phone Gateway to the system.
	You cannot update this field in the Edit Phone page, and only the ports that are available for use display in the list.
	Tip To create the device name for the Cisco VG224 Analog Phone Gateway, Cisco Unified Communications Manager Business Edition 3000 automatically uses the values that you enter in the Gateway MAC Address and the Port Number fields.

Phone Applications Settings

GUI: Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

Tip You can quickly add phone applications in the usage profile in both the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard and Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. A specific menu option displays under **Users/Phone > Phone Applications** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface for searching for, editing, adding, and deleting phone applications.

Phone applications display interactive content, such as text and graphics, on some phone models. In the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, you can add, edit, and delete configuration for phone applications. Table 29-1 describes the settings that display on the Phone Applications page (**Users/Phones > Phone Applications**), which allows you to add and edit configuration for phone applications.

You can add customized phone applications that provide information on weather, stocks, company news, and so on. Users access these phone applications on the phone by using the services and directories buttons or menu options (availability varies by phone model). When a user presses the services button (or chooses the services menu item), a menu of configured phone applications displays. The user then chooses a phone application from the list, and the phone displays the phone application.

Tip After you add the phone application, you must select it in the usage profile.

Table 29-1   Settings on the Phone Applications Page

Setting	Description
Name	Enter a name for this phone application. You can enter up to 32 characters. The name that you enter displays under the menu option on the phone where phone applications are accessed.

Table 29-1   Settings on the Phone Applications Page (continued)

Setting	Description
Description	Enter a description of the service that the phone application provides. The description can include up to 100 characters, but it cannot include quotation marks (") or grave accent (`).
URL	Enter the URL of the server where the phone application is located. ⚠ **Caution** Do not put custom phone applications on the Cisco Unified Communications Manager Business Edition 3000 server. For the applications to be available to the phones, the phones must have network connectivity to the server where the phone application is located. For Cisco-provided default applications, the URL displays as Application:Cisco/<name of application> by default; for example, Application:Cisco/CorporateDirectory. You can modify the URL for default applications to point to a custom application; for example, if you use a custom corporate directory, you can change Application:Cisco/CorporateDirectory to the URL for your custom directory. Enter up to 512 alphanumeric characters, spaces, or !#$%&'()*+,./:;<=>?@][^_{|}~\-

C H A P T E R **30**

Post-Setup Wizard

GUI: Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

After you log in to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface for the first time, the Post-Setup Wizard displays. Cisco Unified Communications Manager Business Edition 3000 displays the Post-Setup Wizard to ensure that you perform the most critical tasks immediately after the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard completes. The Post-Setup Wizard allows you to perform the following tasks:

- Immediately import users and phones in bulk from the Cisco-provided .xls data configuration file
- Immediately obtain the CLI commands that you must issue on the gateway
- Perform other recommended tasks, such as backups

For more information on the Post-Setup wizard, see Table 30-1.

Table 30-1   Pages in the Post-Setup Wizard

Page In Post-Setup Wizard	Description
Bulk Insert of Users and Phones	The Bulk Insert of Users and Phones page only displays if you selected Automatic Setup during the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard. To import the users and phones, Cisco Unified Communications Manager Business Edition 3000 uses the Cisco-provided .xls data configuration file that you uploaded during the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard.
	When you import users and phones during the Post-Setup wizard, Cisco Unified Communications Manager Business Edition 3000 attempts to insert user and phone configuration into the system. After the attempt occurs, Cisco Unified Communications Manager Business Edition 3000 displays a report that indicates whether the insertion succeeded or failed. The report indicates the number of phones and users that successfully got inserted, the number of phones and users that failed to get inserted, and the reason why the insertion failed. If errors (failures) occur, you can save the errors to an .csv file so that you can correct the Cisco-provided .xls data configuration file. After you update the Cisco-provided .xls data configuration file, attempt the import again through the Search Users or Search Phones pages (the Import Bulk Users/Phones button under **Users/Phones > Users or Phones**).

Table 30-1   Pages in the Post-Setup Wizard (continued)

Page In Post-Setup Wizard	Description
Gateway Configuration	The Gateway Configuration page displays the list of CLI commands that you must issue on the gateway. Before your users can place calls over the PSTN, you must issue these CLI commands on the gateway.
	Some of the CLI commands include your configuration from the Cisco-provided .xls data configuration file or the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard; for example, the hostname for the gateway is included in one of the commands.
	You can either save the commands to file so that you can issue the commands later, or you can copy and paste the commands immediately onto the gateway if the gateway is in enable mode. For information on putting the gateway into enable mode and for information on issuing commands on the gateway, refer to the gateway documentation.
	To save the commands to file, use a text editor, and verify that the CLI commands display correctly in the file after you save it. In some cases, such as with Microsoft NotePad, the commands may not display in a format that can be used later for copying and pasting.
	When you copy the commands, make sure that you copy all text that displays in the section.
	To issue the commands on the gateway at a later time, select **System Settings > Gateway**; then, click **Generate CLI Commands to Configure the Gateway** under the General tab.
Next Steps	Cisco prioritizes the next steps that you should perform. For example, Cisco recommends that you perform a backup before you perform additional configuration tasks. To perform a backup, choose **Maintenance > Backup**.

C H A P T E R 31

PSTN Connection Settings

Impacted GUIs: Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard and Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

The PSTN Connection Settings page allows you to configure additional PSTN connections, edit or delete existing connections for the Cisco Unified Communications Manager Business Edition 3000 server. Table 31-1 describes the settings on the PSTN Connections page (**Connections > PSTN Connections**). Click **PSTN Connections** to view the existing PSTN connections for the Cisco Unified Communications Manager Business Edition 3000.

Caution For DNS, make sure that you map the IPv4 address of the Cisco Unified Communications Manager Business Edition 3000 server to the hostname on the DNS server. Cisco recommends that you update the DNS server before you change the hostname or IP address on the Network page.

If you update the IP address for the server, you need to reissue the CLI commands that are listed on the Gateway page (**System Settings > Gateway**).

PSTN Connection Settings

Table 31-1   Settings on the PSTN Connections Page

Setting	Description
Name	Specifies the name of the PSTN connection.
Description	Specifies the description for the PSTN connection.
Connection Type	Specifies the connection type for the PSTN connection.
Device Name	Specifies the device name for the PSTN connection.
Add PSTN Connections Information	
Edit	Click the **Edit** link corresponding to the PSTN connection to edit the configuration settings.
	Click **Show Advanced Settings** or Hide Advanced Settings to view or edit the advanced settings for the PSTN connection.
	Click **Save** to save the changes.
	Click **Reset** to revert to the previous saved configuration.

Table 31-1   *Settings on the PSTN Connections Page (continued)*

Setting	Description
Delete	Click the **Delete** link corresponding to the PSTN connection to delete the existing connection.
	A warning message appears indicating that the connection will be deleted and calls through that connection will be dropped. You can choose either to delete the PSTN connection or to cancel the operation.
	Note Ensure that you retain minimum of one T1/E1 PSTN connection configured with the internal gateway. The media transcoding and conferencing will not work properly if all the internal gateway connections are deleted.
Add PSTN Connection	Click **Add PSTN Connection** to configure a new PSTN connection.

Connection Type

Table 31-2   *Settings on the Connection Type page*

Setting	Description
Connection Type	Select the required connection type from the drop-down list.
	Select one of the following:
	• E1 PRI
	• T1 PRI
	• T1 CAS
	• FXO
	• SIP Trunk
	Click **Next** to go to the next screen.

Device

Table 31-3   Settings on the Device page

Setting	Description
Device Type	Select the required device type: • **BE3000**—Select this option for the MCS7890-C1 internal gateway. The device name is auto-filled with internal gateway. • **ISR2901**—Select this option to configure an ISR2901 gateway.
Device	If you have selected device type as CUCMBE3000, the device name field will be auto-filled. Select the device for the ISR2901 gateway if available. Select **Add Device** to add a new device for ISR2901 gateway.
Add ISR2901 Gateway Information	
Hostname	Enter a hostname for the device.
IP Settings	Determine how you want the gateway to obtain its IP address. • If you want the gateway to obtain an IP address through DHCP, click **Obtain an IP Address Automatically**. • To assign a static IP address to the gateway, click **Use the following IP address** and enter the IPv4 address, the subnet mask, and the default gateway. The IP address, subnet mask, and default gateway must be in the format ddd.ddd.ddd.ddd where ddd is a value between 0 and 255 (except 0.0.0.0).
Enable DNS resolution	• To enable DNS for the gateway, check the **Enable DNS resolution** check box and enter the primary and secondary DNS servers. The IP addresses of primary and secondary DNS servers must be in the format ddd.ddd.ddd.ddd where ddd is a value between 0 and 255 (except 0.0.0.0). **Note** For DNS, make sure that you map the IPv4 address of the Cisco Unified Communications Manager Business Edition 3000 server to the hostname on the DNS server. Cisco recommends that you update the DNS server before you change the hostname or IP address on the Network page.
OK	Click **OK** to add a device for the gateway. The newly configured device is selected.
Cancel	Click **Cancel** to cancel the configuration and return to the previous page. Click **Next** to go to Provider section.

Adding/Editing a Device

Table 31-4   Settings on the Add Device page

Setting	Description
Hostname	Enter a hostname for the device.
IP Settings	Determine how you want the gateway to obtain its IP address. • If you want the gateway to obtain an IP address through DHCP, click **Obtain an IP Address Automatically**. • To assign a static IP address to the gateway, click **Use the following IP address** and enter the IPv4 address, the subnet mask, and the default gateway. The IP address, subnet mask, and default gateway must be in the format ddd.ddd.ddd.ddd where ddd is a value between 0 and 255 (except 0.0.0.0).
Enable DNS resolution	To enable DNS for the gateway, check the **Enable DNS resolution** check box and enter the primary and secondary DNS servers. The IP addresses of primary and secondary DNS servers must be in the format ddd.ddd.ddd.ddd where ddd is a value between 0 and 255 (except 0.0.0.0). **Note** For DNS, make sure that you map the IPv4 address of the Cisco Unified Communications Manager Business Edition 3000 server to the hostname on the DNS server. Cisco recommends that you update the DNS server before you change the hostname or IP address on the Network page.
OK	Click **OK** to add a device for the gateway. The newly configured device is selected.
Cancel	Click **Cancel** to cancel the configuration and return to the previous page.

Provider

Table 31-5   Settings on the Service Provider page

Setting	Description
Provider	Specifies the service provider who adequately supports Cisco Unified Communications Manager Business Edition 3000 server. The service provider provides a list of attributes for specific connection settings and the default layout for the respective Connection Settings page. The following are the service providers for Cisco Unified Communications Manager Business Edition 3000: • Cisco Digital Access E1 PRI (if the Connection Type is EI PRI) • Cisco Digital Access T1 PRI (if the Connection Type is TI PRI) • Cisco Digital Access T1 CAS (if the Connection Type is T1 CAS) • Cisco Unified Border Element (CUBE) (default, if the Connection Type is SIP Trunk) **Note** If you have installed a Connection Pack, the associated service provider name will appear in the list. • SPA8800 (if the Connection Type is FXO) Click **Next** to go to the Connection Settings page.

Connection Settings

Table 31-6 describes the settings on the connection settings page for General section.

Table 31-6   Settings on the Connection Settings Page for General Section

Setting	Description
Connection Name	Displays the name of the PSTN connection.
Description	Displays the description provided for the PSTN connection. You can enter a new description if required.
Connection Type	Displays the type of PSTN connection.
Device Type	Displays the type of the gateway device.
Device Name	Displays the name of the gateway.
Device Port	Select the required port for the gateway device from the drop down list

The following are the description of Advanced Settings for Connection Types for Cisco Unified Communications Manager Business Edition 3000:

Connection Type: E1 PRI

Table 31-7 describes the settings on the **Add PSTN Connection > Connection Settings** page when your chosen Connection Type is **E1 PRI**.

Table 31-7   Settings On the Connection Settings Page for E1 PRI connection type

Setting	Description
Connection Settings	
Protocol Type	Select the communications protocol type for the PSTN connection. EI PRI provides two options: • PRI EURO • PRI AUSTRALIAN
Show Advanced Settings/Hide Advanced Settings	
Interface Settings	
Protocol Side	This setting specifies whether the gateway connects to a Network device or to a User device. Make sure that the two ends of the PRI connection use opposite settings. For example, if you connect to a PBX and the PBX uses User as its protocol side, select Network for this device. Typically, use User for this option for central office connections.
Clock	Select Internal or External for the clock source.
PCM Type	Specify the digital encoding format. Select one of the following formats: • a-law—Use for Europe and other countries, except North America, Hong Kong, Taiwan, and Japan • mu-law—Use for North America, Hong Kong, Taiwan, and Japan
Line Coding	Select the line coding from one of the following: • High Density Bi-polar 3 (HDB3) • Alternate mark inversion (AMI)

Table 31-7   *Settings On the Connection Settings Page for E1 PRI connection type*

Setting	Description
Framing	Select the multiframe format of the span from one of the following: • Cyclic Redundancy Check 4 (CRC4) • Non Cyclic Redundancy Check 4 (NonCRC4)
Echo Cancellation	Select whether to enable or disable echo cancellation.
Coverage (ms)	If an issue occurs with echo cancellation, select a value to address the issue. Choose one of the following values: • 24 • 32 • 48 • 64 • 128 (available with MCS7890C1 internal gateway only) **Note** This option is available only if echo cancellation is enabled.
Channel Selection Order	Select the order in which channels or ports are enabled from first (lowest number port) to last (highest number port), or from last to first. Valid entries include TOP DOWN (first to last) or BOTTOM UP (last to first). If you are not sure which port order to use, select TOP DOWN.
Channel IE Type	Select one of the following values to specify whether channel selection is presented as a channel map or a slot map: • Timeslot Number—B-channel usage always indicates actual time slot map format (such as 1-15 and 17-31 for E1). • Slotmap—B-channel usage always indicates a slot map format. • Use Number When 1B—Channel usage indicates a channel map for one B-channel but indicates a slot map if more than one B-channel exists. • Continuous Number—Configures a continuous range of slot numbers (1-30) as the E1 logical channel number instead of the noncontinuous actual time slot number (1-15 and 17-31).
Delay for first restart (ticks)	Enter the rate at which the spans are brought in service. The delay occurs when many PRI spans are enabled on a system and the Inhibit Restarts at PRI Initialization check box is unchecked. For example, set the first five cards to 0 and set the next five cards to 16. (Wait 2 seconds before bringing them in service.)

Table 31-7   Settings On the Connection Settings Page for E1 PRI connection type

Setting	Description
Delay between restarts (ticks)	Enter the time between restarts. The delay occurs when a PRI RESTART is sent if the Inhibit Restarts check box is unchecked.
Inhibit Restarts at PRI Initialization	A RESTART or SERVICE message confirms the status of the ports on a PRI span. If RESTART or SERVICE messages are not sent, Cisco Unified Communications Manager Business Edition 3000 assumes the ports are in service.
	When the D-Channel successfully connects with another PRI D-Channel, it sends a RESTART or SERVICE message when this check box is unchecked.
Enable G. Clear	Check this check box to enable G. Clear Codec support. Checking this check box causes echo cancellation and zero suppression for outbound calls to be disabled.
Trasmit UTF-8 for Calling Party Name	If you check the Transmit UTF-8 for Calling Party Name check box, the gateway sends unicode for the calling party name.
PRI-Specific Settings	
Display IE Delivery	Check the check box to enable delivery of the display information element (IE) in SETUP and NOTIFY messages (for DMS protocol) for the calling and connected party name delivery service.
Redirecting Number IE Delivery–Inbound	Check this check box to indicate the first redirecting number and the redirecting reason of the call when the call is forwarded. (The UUIE part of the outgoing SETUP message from the Cisco Unified Communications Manager Business Edition 3000 includes the Redirecting Number IE.)
	Uncheck the check box to exclude the first redirecting number and the redirecting reason.
	You use Redirecting Number IE for voice-messaging integration only. If your configured voice-messaging system supports Redirecting Number IE, check the check box.
Redirecting Number IE Delivery–Outbound	Check this check box to accept the Redirecting Number IE in the incoming SETUP message to the Cisco Unified Communications Manager Business Edition 3000. (The UUIE part of the SETUP message includes the Redirecting Number IE.)
	Uncheck the check box to exclude the Redirecting Number IE.
	You use Redirecting Number IE for voice-messaging integration only. If your configured voice-messaging system supports Redirecting Number IE, you should check the check box.

Table 31-7   Settings On the Connection Settings Page for E1 PRI connection type

Setting	Description
Setup non-ISDN Progress Indicator IE Enable	Check this check box only if users are not receiving ringback tones on outbound calls.
	When this check box is checked, the Cisco Unified Communications Manager Business Edition 3000 sends Q.931 Setup messages out digital (that is, non-H.323) gateways with the Progress Indicator field set to non-ISDN.
	This message notifies the destination device that the gateway is non-ISDN and that the destination device should play in-band ringback.
	This problem usually associates with a Cisco Unified Communications Manager Business Edition 3000 that connect to PBXs through digital gateways.
Outbound Call Routing	
Calling Party Presentation	Select whether you want the Cisco Unified Communications Manager Business Edition 3000 to allow or restrict the display of the calling party phone number.
	• Default—If you do not want to change the calling line ID presentation
	• Allowed—To indicate that the "Calling Line ID is Allowed" on outbound calls
	• Restricted—To indicate that "Calling Line ID is Restricted" on outbound calls
Calling Party Selection	Any outbound call on a gateway can send directory number information. Select which directory number is sent.
	Select one of the following options:
	• Originator—Send the directory number of the calling device.
	• First Redirect Number—Send the directory number of the redirecting device.
	• Last Redirect Number—Send the directory number of the last device to redirect the call.
	• First Redirect Number (External)—Send the directory number of the first redirecting device with the external phone mask applied.
	• Last Redirect Number (External)—Send the directory number of the last redirecting device with the external phone mask applied.

Table 31-7   *Settings On the Connection Settings Page for E1 PRI connection type*

Setting	Description
Called Party IE Type Unknown	Select the format for the number type in called party directory numbers.
	Cisco Unified Communications Manager Business Edition 3000 sets the called directory number (DN) type. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco Unified Communications Manager Business Edition 3000 does not recognize European national dialing patterns. You can also change this setting when you are connecting to a PBX that expects the called directory number to be encoded to a non-national type numbering plan.
	Select one of the following options:
	• Cisco Unified Communications Manager—Use when the Cisco Unified Communications Manager Business Edition 3000 sets the directory number type.
	• Unknown—Use when the dialing plan is unknown.
	• National—Use when you are dialing within the dialing plan for your country.
	• International—Use when you are dialing outside the dialing plan for your country.
	• Subscriber—Use when you are dialing a subscriber by using a shortened subscriber number.

Table 31-7   *Settings On the Connection Settings Page for E1 PRI connection type*

Setting	Description
Calling Party IE Type Unknown	Select the format for the number type in calling party directory numbers.
	Cisco Unified Communications Manager Business Edition 3000 sets the calling directory number (DN) type. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco Unified Communications Manager Business Edition 3000 does not recognize European national dialing patterns. You can also change this setting when you are connecting to a PBX that expects the calling directory number to be encoded to a non-national type numbering plan.
	Select one of the following options:
	• Cisco Unified Communications Manager—Use when the Cisco Unified Communications Manager Business Edition 3000 sets the directory number type.
	• Unknown—Use when the dialing plan is unknown.
	• National—Use when you are dialing within the dialing plan for your country.
	• International—Use when you are dialing outside the dialing plan for your country.
	• Subscriber—Use when you are dialing a subscriber by using a shortened subscriber number.

Table 31-7   Settings On the Connection Settings Page for E1 PRI connection type

Setting	Description
Called Numbering Plan	Select the format for the numbering plan in called party directory numbers.
	Cisco Unified Communications Manager Business Edition 3000 sets the called DN numbering plan. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco Unified Communications Manager Business Edition 3000 does not recognize European national dialing patterns. You can also change this setting when you are connecting to PBXs by using routing as a non-national type number.
	Select one of the following options:
	• Cisco Unified Communications Manager—Use when the Cisco Unified Communications Manager Business Edition 3000 sets the Numbering Plan in the directory number.
	• ISDN—Use when you are dialing outside the dialing plan for your country.
	• National Standard—Use when you are dialing within the dialing plan for your country.
	• Private—Use when you are dialing within a private network.
	• Unknown—Use when the dialing plan is unknown.

Table 31-7   Settings On the Connection Settings Page for E1 PRI connection type

Setting	Description
Calling Numbering Plan	Select the format for the numbering plan in calling party directory numbers.
	Cisco Unified Communications Manager Business Edition 3000 sets the calling DN numbering plan. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco Unified Communications Manager Business Edition 3000 does not recognize European national dialing patterns. You can also change this setting when you are connecting to PBXs by using routing as a non-national type number.
	Select one of the following options:
	• Cisco Unified Communications Manager—Use when the Cisco Unified Communications Manager Business Edition 3000 sets the Numbering Plan in the directory number.
	• ISDN—Use when you are dialing outside the dialing plan for your country.
	• National Standard—Use when you are dialing within the dialing plan for your country.
	• Private—Use when you are dialing within a private network.
	• Unknown—Use when the dialing plan is unknown.
Sound Settings	
Input Gain (dB)	This allows you to change the amplitude of the voice signal coming into the gateway created by adjusting the decibel (dB) level of the signal. You can increase the volume of a signal coming into the gateway by either increasing input gain or decreasing attenuation. You can decrease the volume of the incoming signal by either decreasing the input gain value or increasing the output attenuation.
	The minimum value is –6, and the maximum value is 14.
Output Attenuation (dB)	Attenuation is measured in decibels, and the lower the number, the better the voice quality. Adjust the attenuation and input gain values to achieve maximum voice quality.
	The minimum value is –6, and the maximum value is 14.
Output Level (dB)	This option sets the attenuation of the signal before it enters the line. To reduce the line loss set the output level to 0, –7.5, or –15 dB.
PRI Channels	

Table 31-7   Settings On the Connection Settings Page for E1 PRI connection type

Setting	Description
Enable All Channels	If you leased the entire PRI span from your service provider, check this check box.
	For E1 PRI connection type, the channel range available is from 1 to 32 lines.
Enable Channel Ranges	If you did not lease the entire PRI span from your service provider, enter the partial channel range that is available for use. Enter commas to separate the ranges; for example, 6-8, 10-12.
	Note You can use up to five partial PRI channel ranges, beyond which you will have to lease the entire channel range.

Connection Type: T1 PRI

Table 31-8 describes the settings on the **Add PSTN Connection > Connection Settings** page when your chosen Connection Type is **T1 PRI**.

Table 31-8   Settings On the Connection Settings Page for T1 PRI connection type

Setting	Description
Connection Settings	
Protocol Type	T1 PRI spans provide several options, depending on the carrier or switch. Determine the switch to which you are connecting and the preferred protocol.
Show Advanced Settings/Hide Advanced Settings	
Interface Settings	
Protocol Side	This setting specifies whether the gateway connects to a Network device or to a User device.
	Make sure that the two ends of the PRI connection use opposite settings. For example, if you connect to a PBX and the PBX uses User as its protocol side, select Network for this device. Typically, use User for this option for central office connections.
Clock	Select Internal or External for the clock source.
PCM Type	Specify the digital encoding format. Select one of the following formats:
	• a-law—Use for Europe and other countries, except North America, Hong Kong, Taiwan, and Japan
	• mu-law—Use for North America, Hong Kong, Taiwan, and Japan
Line Coding	Select the line coding from one of the following:
	• Binary 8-zero substitution (B8ZS)
	• Alternate mark inversion (AMI)

Table 31-8   *Settings On the Connection Settings Page for T1 PRI connection type*

Setting	Description
Framing	Select the multiframe format of the span from one of the following: • Extended Superframe Format (ESF) • Superframe Format (SF)
Echo Cancellation	Select whether to enable or disable echo cancellation.
Coverage (ms)	If an issue occurs with echo cancellation, select a value to address the issue. Choose one of the following values: • 24 • 32 • 48 • 64 • 128 (available with MCS7890C1 internal gateway only) **Note** This option is available only if echo cancellation is enabled.
Channel Selection Order	Select the order in which channels or ports are enabled from first (lowest number port) to last (highest number port), or from last to first. Valid entries include TOP DOWN (first to last) or BOTTOM UP (last to first). If you are not sure which port order to use, select TOP DOWN.
Channel IE Type	Select one of the following values to specify whether channel selection is presented as a channel map or a slot map: • Timeslot Number—B-channel usage always indicates actual time slot map format (such as 1-15 and 17-31 for E1). • Slotmap—B-channel usage always indicates a slot map format. • Use Number When 1B—Channel usage indicates a channel map for one B-channel but indicates a slot map if more than one B-channel exists. • Continuous Number—Configures a continuous range of slot numbers (1-30) as the E1 logical channel number instead of the noncontinuous actual time slot number (1-15 and 17-31).
Delay for first restart (ticks)	Enter the rate at which the spans are brought in service. The delay occurs when many PRI spans are enabled on a system and the Inhibit Restarts at PRI Initialization check box is unchecked. For example, set the first five cards to 0 and set the next five cards to 16. (Wait 2 seconds before bringing them in service.)

Table 31-8   Settings On the Connection Settings Page for T1 PRI connection type

Setting	Description
Delay between restarts (ticks)	Enter the time between restarts. The delay occurs when a PRI RESTART is sent if the Inhibit Restarts check box is unchecked.
Inhibit Restarts at PRI Initialization	A RESTART or SERVICE message confirms the status of the ports on a PRI span. If RESTART or SERVICE messages are not sent, Cisco Unified Communications Manager Business Edition 3000 assumes the ports are in service. When the D-Channel successfully connects with another PRI D-Channel, it sends a RESTART or SERVICE message when this check box is unchecked.
Enable G. Clear	Check this check box to enable G. Clear Codec support. Checking this check box causes echo cancellation and zero suppression for outbound calls to be disabled.
Trasmit UTF-8 for Calling Party Name	If you check the Transmit UTF-8 for Calling Party Name check box, the gateway sends unicode for the calling party name.
PRI-Specific Settings	
Display IE Delivery	Check the check box to enable delivery of the display information element (IE) in SETUP and NOTIFY messages (for DMS protocol) for the calling and connected party name delivery service.
Redirecting Number IE Delivery–Inbound	Check this check box to indicate the first redirecting number and the redirecting reason of the call when the call is forwarded. (The UUIE part of the outgoing SETUP message from the Cisco Unified Communications Manager Business Edition 3000 includes the Redirecting Number IE.) Uncheck the check box to exclude the first redirecting number and the redirecting reason. You use Redirecting Number IE for voice-messaging integration only. If your configured voice-messaging system supports Redirecting Number IE, check the check box.
Redirecting Number IE Delivery–Outbound	Check this check box to accept the Redirecting Number IE in the incoming SETUP message to the Cisco Unified Communications Manager Business Edition 3000. (The UUIE part of the SETUP message includes the Redirecting Number IE.) Uncheck the check box to exclude the Redirecting Number IE. You use Redirecting Number IE for voice-messaging integration only. If your configured voice-messaging system supports Redirecting Number IE, you should check the check box.

Table 31-8   Settings On the Connection Settings Page for T1 PRI connection type

Setting	Description
Setup non-ISDN Progress Indicator IE Enable	Check this check box only if users are not receiving ringback tones on outbound calls.
	When this check box is checked, the Cisco Unified Communications Manager Business Edition 3000 sends Q.931 Setup messages out digital (that is, non-H.323) gateways with the Progress Indicator field set to non-ISDN.
	This message notifies the destination device that the gateway is non-ISDN and that the destination device should play in-band ringback.
	This problem usually associates with a Cisco Unified Communications Manager Business Edition 3000 that connect to PBXs through digital gateways.
Send Calling Name In Facility IE	Check the check box to send the calling name in the Facility IE field. By default, the Cisco Unified Communications Manager leaves the check box unchecked.
	Set this feature for a private network that has a PRI interface that is enabled for ISDN calling name delivery. When this check box is checked, the calling party name gets sent in the Facility IE of the SETUP or FACILITY message, so the name can display on the called party device.
	Set this feature for PRI trunks in a private network only. Do not set this feature for PRI trunks that are connected to the PSTN.
	Note This field applies to the NI2 protocol only.
Outbound Call Routing	
Calling Party Presentation	Select whether you want the Cisco Unified Communications Manager Business Edition 3000 to allow or restrict the display of the calling party phone number.
	• Default—If you do not want to change the calling line ID presentation
	• Allowed—To indicate that the "Calling Line ID is Allowed" on outbound calls
	• Restricted—To indicate that "Calling Line ID is Restricted" on outbound calls

Table 31-8   Settings On the Connection Settings Page for T1 PRI connection type

Setting	Description
Calling Party Selection	Any outbound call on a gateway can send directory number information. Select which directory number is sent.
	Select one of the following options:
	• Originator—Send the directory number of the calling device.
	• First Redirect Number—Send the directory number of the redirecting device.
	• Last Redirect Number—Send the directory number of the last device to redirect the call.
	• First Redirect Number (External)—Send the directory number of the first redirecting device with the external phone mask applied.
	• Last Redirect Number (External)—Send the directory number of the last redirecting device with the external phone mask applied.
Called Party IE Type Unknown	Select the format for the number type in called party directory numbers.
	Cisco Unified Communications Manager Business Edition 3000 sets the called directory number (DN) type. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco Unified Communications Manager Business Edition 3000 does not recognize European national dialing patterns. You can also change this setting when you are connecting to a PBX that expects the called directory number to be encoded to a non-national type numbering plan.
	Select one of the following options:
	• Cisco Unified Communications Manager—Use when the Cisco Unified Communications Manager Business Edition 3000 sets the directory number type.
	• Unknown—Use when the dialing plan is unknown.
	• National—Use when you are dialing within the dialing plan for your country.
	• International—Use when you are dialing outside the dialing plan for your country.
	• Subscriber—Use when you are dialing a subscriber by using a shortened subscriber number.

Table 31-8   Settings On the Connection Settings Page for T1 PRI connection type

Setting	Description
Calling Party IE Type Unknown	Select the format for the number type in calling party directory numbers. Cisco Unified Communications Manager Business Edition 3000 sets the calling directory number (DN) type. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco Unified Communications Manager Business Edition 3000 does not recognize European national dialing patterns. You can also change this setting when you are connecting to a PBX that expects the calling directory number to be encoded to a non-national type numbering plan. Select one of the following options: • Cisco Unified Communications Manager—Use when the Cisco Unified Communications Manager Business Edition 3000 sets the directory number type. • Unknown—Use when the dialing plan is unknown. • National—Use when you are dialing within the dialing plan for your country. • International—Use when you are dialing outside the dialing plan for your country. • Subscriber—Use when you are dialing a subscriber by using a shortened subscriber number.

Table 31-8   Settings On the Connection Settings Page for T1 PRI connection type

Setting	Description
Called Numbering Plan	Select the format for the numbering plan in called party directory numbers.
	Cisco Unified Communications Manager Business Edition 3000 sets the called DN numbering plan. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco Unified Communications Manager Business Edition 3000 does not recognize European national dialing patterns. You can also change this setting when you are connecting to PBXs by using routing as a non-national type number.
	Select one of the following options:
	• Cisco Unified Communications Manager—Use when the Cisco Unified Communications Manager Business Edition 3000 sets the Numbering Plan in the directory number.
	• ISDN—Use when you are dialing outside the dialing plan for your country.
	• National Standard—Use when you are dialing within the dialing plan for your country.
	• Private—Use when you are dialing within a private network.
	• Unknown—Use when the dialing plan is unknown.

Table 31-8   Settings On the Connection Settings Page for T1 PRI connection type

Setting	Description
Calling Numbering Plan	Select the format for the numbering plan in calling party directory numbers.
	Cisco Unified Communications Manager Business Edition 3000 sets the calling DN numbering plan. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco Unified Communications Manager Business Edition 3000 does not recognize European national dialing patterns. You can also change this setting when you are connecting to PBXs by using routing as a non-national type number.
	Select one of the following options:
	• Cisco Unified Communications Manager—Use when the Cisco Unified Communications Manager Business Edition 3000 sets the Numbering Plan in the directory number.
	• ISDN—Use when you are dialing outside the dialing plan for your country.
	• National Standard—Use when you are dialing within the dialing plan for your country.
	• Private—Use when you are dialing within a private network.
	• Unknown—Use when the dialing plan is unknown.
Sound Settings	
Input Gain (dB)	This allows you to change the amplitude of the voice signal coming into the gateway created by adjusting the decibel (dB) level of the signal. You can increase the volume of a signal coming into the gateway by either increasing input gain or decreasing attenuation. You can decrease the volume of the incoming signal by either decreasing the input gain value or increasing the output attenuation.
	The minimum value is –6, and the maximum value is 14.
Output Attenuation (dB)	Attenuation is measured in decibels, and the lower the number, the better the voice quality. Adjust the attenuation and input gain values to achieve maximum voice quality.
	The minimum value is –6, and the maximum value is 14.
PRI Channels	

Table 31-8   Settings On the Connection Settings Page for T1 PRI connection type

Setting	Description
Enable All Channels	If you leased the entire PRI span from your service provider, check this check box.
	For E1 PRI connection type, the channel range available is from 1 to 32 lines.
Enable Channel Ranges	If you did not lease the entire PRI span from your service provider, enter the partial channel range that is available for use. Enter commas to separate the ranges; for example, 6-8, 10-12.
	Note You can use up to five partial PRI channel ranges, beyond which you will have to lease the entire channel range.

Connection Type: T1 CAS

Table 31-9 describes the settings on the **Add PSTN Connection > Connection Settings** page when your chosen Connection Type is **T1 CAS**.

Table 31-9   Settings On the Connection Settings Page for T1 CAS connection type

Setting	Description
Connection Settings	
Show Advanced Settings/Hide Advanced Settings	
Interface Settings	
Clock	Select Internal or External for the clock source.
Channel Selection Order	Select the order in which channels or ports are enabled from first (lowest number port) to last (highest number port), or from last to first.
	Valid entries include TOP DOWN (first to last) or BOTTOM UP (last to first). If you are not sure which port order to use, select TOP DOWN.
Product Specific Configuration Layout	
Line Coding	Select the line coding from one of the following: • Binary 8-zero substitution (B8ZS) • Alternate mark inversion (AMI)
Framing	Select the multiframe format of the span from one of the following: • Extended Superframe Format (ESF) • Superframe Format (SF)
Echo Cancellation	Select whether to enable or disable echo cancellation.

Table 31-9   *Settings On the Connection Settings Page for T1 CAS connection type*

Setting	Description
Coverage (ms)	If an issue occurs with echo cancellation, select a value to address the issue. Choose one of the following values: • 24 • 32 • 48 • 64 • 128 (available with MCS7890C1 internal gateway only) **Note** This option is available only if echo cancellation is enabled.
Input Gain (dB)	This allows you to change the amplitude of the voice signal coming into the gateway created by adjusting the decibel (dB) level of the signal. You can increase the volume of a signal coming into the gateway by either increasing input gain or decreasing attenuation. You can decrease the volume of the incoming signal by either decreasing the input gain value or increasing the output attenuation. The minimum value is –6, and the maximum value is 14.
Output Attenuation (dB)	Attenuation is measured in decibels, and the lower the number, the better the voice quality. Adjust the attenuation and input gain values to achieve maximum voice quality. The minimum value is –6, and the maximum value is 14.
Channel Configuration	
Channel Range	Specifies the channel range available for TI CAS connection type. Enter channels with dashes to specify ranges and commas to separate values, for example, 1-5,7,12. A maximum of 24 channels can be configured.
Expected Digits	Specifies the number of digits the user dials to place a call through the PSTN connection. The Cisco Unified Communications Manager Business Edition 3000 communicates this number to the Cisco Unified Communications Manager. This field works in tandem with the Extension Length field on the Dial Plan settings, which tells the Cisco Unified Communications Manager how many of the expected digits are significant.
Signalling type	Select one of the following: • Wink Start • Delay Dial

Connection Type: SIP Trunk

Table 31-10 describes the settings on the **Add PSTN Connection > Connection Settings** page when your chosen Connection Type is **SIP trunk**.

Table 31-10   Connection Settings for SIP Trunk Connection Type

Setting	Description
General Information	
Connection Name	Displays the name of the PSTN connection.
Description	Displays the description provided for the PSTN connection.
Connection Type	Displays the type of PSTN connection.
Device Type	Displays the type of gateway device.
Device Name	Displays the name of the gateway.
Connection Settings	
Provider IP Address	Specify the IP address of the service provider.
Provider Port	Specify the port of the service provider
BE3000 Port	Specify the port of the Cisco Unified Communications Manager Business Edition 3000 to which the service provider is connected.
Show/Hide Advanced Settings	
Note In this section, the parameters that are exposed by the service provider for editing appear on the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.	
Transport Type Information	
Outgoing Transport	From the drop-down list box, choose the outgoing transport mode. Select one of the following: • TCP • UDP
Media Information	
SDP Session-level Bandwidth Modifier for Early Offer and Re-INVITEs	The Session Level Bandwidth Modifier specifies the maximum amount of bandwidth needed when all the media streams are used. There are three Session Level Bandwidth Modifiers: Transport Independent Application Specific (TIAS), Application Specific (AS), and Conference Total (CT). Select one of the following options to specify which Session Level Bandwidth Modifier to include in the SDP portion of SIP Early Offer or Reinvite requests. • TIAS and AS • TIAS only • AS only • CT only

Table 31-10   Connection Settings for SIP Trunk Connection Type (continued)

Setting	Description
Include Inactive SDP attribute in mid-call media changes	Check this check box to allow the Cisco Unified Communications Manager Business Edition 3000 to send an INVITE a=inactive SDP message during call hold or media break during supplementary services.
Include Send-Receive SDP attribute in mid-call INVITEs	When you enable send-receive SDP in mid-call INVITE for an early offer SIP trunk in tandem mode, Cisco Unified Communications Manager inserts Media Termination Point (MTP) to provide send/receive SDP when a SIP device sends offer SDP with *a=inactive* or *sendonly* or *recvonly* in audio media line. In tandem mode, Cisco Unified Communications Manager depends on the SIP devices to initiate reestablishment of media path by sending either a delayed INVITE or mid-call INVITE with send-recv SDP.
Disable Early Media when 180 Ringing message received	By default, Cisco Unified Communications Manager Business Edition 3000 will signal the calling phone to play local ringback if SDP is not received in the 180 or 183 response. If SDP is included in the 180 or 183 response, instead of playing ringback locally, Cisco Unified Communications Manager Business Edition 3000 will connect media, and the calling phone will play whatever the called device is sending (such as ringback or busy signal). If you do not receive ringback, the device to which you are connecting may be including SDP in the 180 response, but it is not sending any media before the 200 OK response. In this case, check this check box to play local ringback on the calling phone and connect the media upon receipt of the 200 OK response **Note** Even though the phone that is receiving ringback is the calling phone, you need the configuration on the called device profile because it determines the behavior.
Include audio mline in outgoing T.38 INVITE	The parameter allows the system to accept a signal from Microsoft Exchange that causes it to switch the call from audio to T.38 fax. To use this feature, you must also configure a SIP trunk with this SIP profile. For more information, see trunk Configuration. **Note** The parameter applies to SIP Trunks only, not phones that are running SIP or other endpoints.
Enable Early Offer support for voice and video calls	Check this check box if you want to create a trunk that supports early offer. Early Offer configurations on SIP profile apply to SIP trunk calls.

Table 31-10   *Connection Settings for SIP Trunk Connection Type (continued)*

Setting	Description
Early Offer for G.Clear Calls	The Early Offer for G.Clear Calls feature supports both standards-based G.Clear (CLEARMODE) and proprietary Cisco Session Description Protocols (SDP). To enable or disable Early Offer for G.Clear Calls, choose one of the following options: • Disabled • CLEARMODE • CCD • G.nX64 • X-CCD
DTMF Signaling Method	Choose from the following options: • No Preference (default)—Cisco Unified Communications Manager will pick the DTMF method to negotiate DTMF, so the call does not require an MTP. If Cisco Unified Communications Manager has no option but to allocate an MTP (if the Media Termination Point Required check box is checked), SIP trunk will negotiate DTMF to RFC 2833. • RFC 2833—Choose this configuration if the preferred DTMF method to be used across the trunk is RFC 2833. Cisco Unified Communications Manager makes every effort to negotiate RFC 2833, regardless of a media termination point (MTP) usage. Out-of-band provides the fallback method if the peer endpoint supports it. • OOB and RFC 2833—Choose this configuration if both out of band and RFC 2833 should be used for DTMF. Note If the peer endpoint supports both out of band and RFC 2833, Cisco Unified Communications Manager will negotiate both out-of-band and RFC 2833 DTMF methods. As a result, two DTMF events would get sent for the same DTMF keypress (one out of band and the other RFC 2833).
SIP Rel1xx Options	This field configures SIP Rel1xx, which determines whether all SIP provisional responses (other than 100 Trying messages) get sent reliably to the remote SIP endpoint. Valid values follow: • Disabled—Disables SIP Rel1xx. • Send PRACK if 1xx contains SDP—Acknowledges a 1xx message with PRACK, only if the 1xx message contains SDP. • Send PRACK for all 1xx messages—Acknowledges all1xx messages with PRACK.
Presentation and Identification Information	

Table 31-10   Connection Settings for SIP Trunk Connection Type (continued)

Setting	Description
Transmit UTF-8 for Calling Party Name	This device uses the user locale setting of the SIP Trunks to determine whether to send unicode and whether to translate received Unicode information.
	For the sending device, if you check this check box and the user locale setting in the device pool at the device matches the terminating phone user locale, the device sends unicode. If the user locale settings do not match, the device sends ASCII.
	The receiving device translates incoming unicode characters based on the user locale setting of the sending device pool of the device. If the user locale setting matches the terminating phone user locale, the phone displays the characters.
	Note The phone may display garbled characters if the two ends of the trunk configure user locales that do not belong to the same language group.
Deliver Conference Bridge Identifier	Check this check box for the SIP trunk to pass the b-number that identifies the conference bridge across the trunk instead of changing the b-number to the null value.
	The terminating side does not require that this option be enabled.
	Checking this check box is not required for the Open Recording Architecture (ORA) SIP header enhancements to the Recording feature to work.
	Enabling this option allows the recorder to coordinate recording sessions for conference calls.
Include Remote-Party-ID	Cisco Unified Communications Manager Business Edition 3000 uses the following as supplementary services:
	• Calling Line ID Presentation (CLIP/CLIR)—To allow or restrict the originating called phone number on a call-by-call basis
	• Calling Name Presentation (CNIP/CNIR)—To allow or restrict the originating caller name on a call-by-call basis
	Check this check box to enable this option on the Cisco Unified Communications Manager Business Edition 3000.
Calling Line ID Presentation–Outgoing	Choose whether you want the Cisco Unified Communications Manager to allow or restrict the display of the calling party phone number on the called party phone display for this SIP trunk.
	• Default—If you do not want to change calling line ID presentation
	• Allowed—If you want Cisco Unified Communications Manager to allow the display of the calling number
	• Restricted—If you want Cisco Unified Communications Manager to block the display of the calling number

Table 31-10   Connection Settings for SIP Trunk Connection Type (continued)

Setting	Description
Calling Name Presentation–Outgoing	Choose whether you want the Cisco Unified Communications Manager to allow or restrict the display of the calling party name on the called party phone display for this SIP route pattern. Choose one of the following: • Default—if you do not want to change calling name presentation. • Allowed—if you want Cisco Unified Communications Manager Business Edition 3000 to display the calling name information. • Restricted—if you want Cisco Unified Communications Manager Business Edition 3000 to block the display of the calling name information.
Connected Line ID Presentation–Incoming	Choose whether you want the Cisco Unified Communications Manager to allow or restrict the display of the calling party phone number on the called party phone display for this SIP route pattern. • Default—if you do not want to change calling line ID presentation. • Allowed—if you want Cisco Unified Communications Manager to allow the display of the calling number. • Restricted—if you want Cisco Unified Communications Manager to block the display of the calling number.
Connected Name Presentation–Incoming	Choose whether you want the Cisco Unified Communications Manager to allow or restrict the display of the calling party name on the caller party phone display for this SIP route pattern. Choose one of the following: • Default—if you do not want to change calling name presentation. • Allowed—if you want Cisco Unified Communications Manager Business Edition 3000 to display the calling name information. • Restricted—if you want Cisco Unified Communications Manager Business Edition 3000 to block the display of the calling name information.
Include Asserted-Identity	Check this check box to define the asserted type and SIP privacy for SIP trunk messages.

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Table 31-10   *Connection Settings for SIP Trunk Connection Type (continued)*

Setting	Description
Asserted-Type	From the drop-down list, choose one of the following values to specify the type of Asserted Identity header that SIP trunk messages should include: • Default—This option represents the default value; Screening indication information that the SIP trunk receives from Cisco Unified Communications Manager Call Control determines the type of header that the SIP trunk sends. • PAI—The Privacy-Asserted Identity (PAI) header gets sent in outgoing SIP trunk messages; this value overrides the Screening indication value that comes from Cisco Unified Communications Manager. • PPI—The Privacy Preferred Identity (PPI) header gets sent in outgoing SIP trunk messages; this value overrides the Screening indication value that comes from Cisco Unified Communications Manager. **Note** These headers get sent only if the Include Asserted-Identity check box is checked.

Table 31-10   Connection Settings for SIP Trunk Connection Type (continued)

Setting	Description
SIP Privacy	From the drop-down list, choose one of the following values to specify the type of SIP privacy header for SIP trunk messages to include:
	• Default—This option represents the default value; Name/Number Presentation values that the SIP trunk receives from the Cisco Unified Communications Manager Call Control compose the SIP Privacy header. For example, if Name/Number presentation specifies Restricted, the SIP trunk sends the SIP Privacy header; however, if Name/Number presentation specifies Allowed, the SIP trunk does not send the Privacy header.
	• None—The SIP trunk includes the Privacy:none header and implies Presentation allowed; this value overrides the Presentation information that comes from Cisco Unified Communications Manager.
	• ID—The SIP trunk includes the Privacy:id header and implies Presentation restricted for both name and number; this value overrides the Presentation information that comes from Cisco Unified Communications Manager.
	• ID Critical—The SIP trunk includes the Privacy:id; critical header and implies Presentation restricted for both name and number. The label "critical" implies that privacy services that are requested for this message are critical, and, if the network cannot provide these privacy services, this request must be rejected. This value overrides the Presentation information that comes from Cisco Unified Communications Manager.
	Note These headers get sent only if the Include Asserted-Identity check box is checked.
Redirecting Information	
Send Redirecting Diversion Header	Check this check box to accept the Redirecting Number in the incoming INVITE message to the Cisco Unified Communications Manager.
	Note You use Redirecting Number for voice-messaging integration only. If your configured voice-messaging system supports Redirecting Number, you should check the check box.
Accept incoming Redirecting Diversion Header	Uncheck the check box to exclude the Redirecting Number in the incoming INVITE message to the Cisco Unified Communications Manager.
	Note You use Redirecting Number for voice-messaging integration only. If your configured voice-messaging system supports Redirecting Number, you should check the check box.

Table 31-10   Connection Settings for SIP Trunk Connection Type (continued)

Setting	Description
Redirect by application	Checking this check box and configuring this SIP Profile on the SIP trunk allows the Cisco Unified Communications Manager administrator to • Apply digit analysis to the redirected contacts to make sure that the call get routed correctly. • Prevent DOS attack by limiting the number of redirection (recursive redirection) that a service parameter can set. • Allow other features to be invoked while the redirection is taking place. Getting redirected to a restricted phone number (such as an international number) means that handling redirection at the stack level will cause the call to be routed instead of being blocked. This represents the behavior that you will get if the Redirect by Application check box is unchecked.
SIP OPTIONS Ping Information	
Enable OPTIONS ping	Check this check box if you want to enable the SIP OPTIONS feature. SIP OPTIONS are requests to the configured destination address on the SIP trunk. If the remote SIP device fails to respond or sends back a SIP error response such as 503 Service Unavailable or 408 Timeout, Cisco Unified Communications Manager tries to reroute the calls by using other Trunks or by using a different address. If this check box is not checked, the SIP trunk does not track the status of SIP trunk destinations. When this check box is checked, you can configure two request timers.
In-Service Trunk Ping Interval (sec)	This field configures the time duration between SIP OPTIONS requests when the remote peer is responding and the trunk is marked as In Service. If at least one IP address is available, the trunk is In Service; if all IP addresses are unavailable, the trunk is Out of Service. The default value specifies 60 seconds. Valid values range from 5 to 600 seconds.
Out-of-service Trunk Ping Interval (sec)	This field configures the time duration between SIP OPTIONS requests when the remote peer is not responding and the trunk is marked as Out of Service. The remote peer may be marked as Out of Service if it fails to respond to OPTIONS, if it sends 503 or 408 responses, or if the Transport Control Protocol (TCP) connection cannot be established. If at least one IP address is available, the trunk is In Service; if all IP addresses are unavailable, the trunk is Out of Service. The default value specifies 120 seconds. Valid values range from 5 to 600 seconds.

Table 31-10   *Connection Settings for SIP Trunk Connection Type (continued)*

Setting	Description
Retry Timer (ms)	This field specifies the maximum waiting time before retransmitting the OPTIONS request.
	Valid values range from 100 to 1000 milliseconds. The default value specifies 500 milliseconds.
Retry Count	This field specifies the number of times that Cisco Unified Communications Manager resends the OPTIONS request to the remote peer. After the configured retry attempts are used, the destination is considered to have failed. To obtain faster failure detection, keep the retry count low.
	Valid values range from 1 to 10. The default value specifies 6.

Connection Type: FXO

Table 31-11   *Connection Settings for SPA8800 Connection Type*

Settings	Description
Basic Parameters	
Port	Also referred to as Line Number, this is the corresponding FXO analog port on the SPA8800. Ports assigned to other PSTN connections are not available for selection.
Description	This field describes the FXO connection.
Direct Inward Dial (DID) Number	This field specifies the number associated to the PSTN connection. By default, this number will route to the auto-attendant unless additional configurations to make the number routable to a callable endpoint are performed.

Settings	Description
Line Usage	There are two main Line Usage options:
	• All Call Types
	• Emergency Calls Only
	All Call Types: The PSTN connection may be used for any incoming and outgoing calls to the PSTN.
	If you are using the All Call Types, you should have a directory number, translation, or hunt pilot set up to receive inbound calls on that DID.
	Emergency Calls Only: The outbound PSTN connection is only used for calls to designated emergency service numbers that have been identified by the country chosen during First Time Setup or to alternate emergency service numbers as defined on the site page.
	If this PSTN connection is selected as Emergency Calls Only, the DID Number for the PSTN connection will be configured as an Emergency Locator ID Number (ELIN) if not previously configured. If you remove ELIN from a site, the setting reverts back to the All Call Types option. Conversely, if an Emergency Calls Only trunk is converted to All Call Types, ELIN is removed from that site.
	Inbound calls from the PSTN to PSTN connections designated as Emergency Calls Only should only be call-backs on emergency calls. The DID cannot be used for non-emergency calls. To do so could prevent emergency calls from going out, given that the analog line only allows one call at a time.
Advanced Parameters	
PSTN Disconnect Detection	
Detect CPC	CPC, or Calling Party Control, is a brief removal of tip-and-ring voltage to indicate the disconnection of a party from the call. If enabled, the SPA disconnects both call legs when this signal is detected.
Detect Polarity Reversal	If enabled, the SPA8800 disconnects both call legs when a polarity reversal occurs. On calls originating from the PSTN, the first polarity reversal is ignored and the second one triggers the disconnect. For all other calls across the SPA, the first polarity reversal triggers the disconnect.
Detect PSTN Long Silence	If enabled, the SPA8800 disconnects both call legs when the PSTN side has no voice activity for a duration longer than the length specified in the PSTN Long Silence Duration parameter during a call across the connection.
Detect VoIP Long Silence	If enabled, the SPA8800 disconnects both call legs when the VoIP side (non-PSTN) has no voice activity for a duration longer than the length specified in the VoIP Long Silence Duration parameter during a call across the connection.

Settings	Description
PSTN Long Silence Duration	This field defines the minimum length of PSTN silence (or inactivity) in seconds to trigger a disconnect of a call across the SPA8800 device if Detect PSTN Long Silence is enabled.
VoIP Long Silence Duration	This field defines the minimum length of VoIP silence (or inactivity) in seconds to trigger a disconnect of a call across the SPA8800 device if Detect VoIP Long Silence is enabled.
PSTN Silence Threshold	This parameter adjusts the sensitivity of PSTN silence detection. Choose from {very low, low, medium, high, very high}. The higher the setting, the easier it is to detect silence and trigger a disconnection.
Min CPC Duration	This field defines the minimum duration, in seconds, of a low tip-and-ring voltage for the SPA8800 device to recognize the drop in voltage as a CPC signal or PSTN line removal.
Detect Disconnect Tone	If enabled, the SPA8800 device disconnects both call legs when it detects the disconnect tone from the PSTN side during a call across the device. The disconnect tone varies by country and can be affected by the country of deployment chosen during First Time Setup (FTS).
Device Settings	
Fax Mode	Choose between G.711 Passthrough or T.38 Fax
FXS Port Input Gain	This field defines the input gain for the FXS port in dB, up to three decimal places. The range is 6.000 to -12.000.
FXS Port Output Gain	This field defines the FXS output gain in dB, up to three decimal places. The range is 6.000 to -12.000. The Call Progress Tones and DTMF playback level are not affected by the FXS Port Output Gain parameter.
DTMF Playback Level	This field defines the local DTMF playback level in dBm, up to one decimal place.
DTMF Playback Length	This field defines the local DTMF playback duration in milliseconds.
FXS Port Impedance	This field sets the electrical impedance of the FXS port. Choices are: 600, 900, 600+2.16uF, 900+2.16uF, 270+750‖150nF, 220+850‖120nF, 220+820‖115nF, or 200+600‖100nF.
FXO Port Impedance	This field defines the desired impedance of the FXO Port. The impedance values for various countries are: • US—600 • EU (UK, Germany, Netherlands, Sweden, Norway, Italy, Spain, Portugal, Poland, and Denmark)—270+750‖150nF • France—270+750‖150nF • Australia—220+820‖120nF • New Zealand—370+620‖310nF
International Control	

Settings	Description
Ring Frequency Min	The value entered in this field should match or be slightly less than the lower limit of the ring frequency (Hz) used to detect the ring signal. This value differs based upon the country of deployment and should only be adjusted should a call across the SPA8800 device to known working number not generate a ring tone.
SPA To PSTN Gain	This field defines the amount of digital gain/attenuation, in decibels (dB), to be applied to the signal sent from the SPA8800 device to the PSTN. Increase this value if parties on the PSTN side have trouble hearing parties on your system or lower it if they are coming across too loud. Range is -15 to 12 dB.
Ring Frequency Max	This value entered in this field should match or be slightly above the higher limit of the ring frequency (Hz) used to detect the ring signal. This value differs based upon the country of deployment and should only be adjusted should a call across the SPA8800 device to known working number not generate a ring tone.
PSTN To SPA Gain	This field defines the amount of digital gain/attenuation, in decibels (dB) applied to the signal sent from the PSTN to the SPA8800 device. Increase this value if parties on the PSTN side are difficult to hear by parties on your system or lower it if they are coming across too loud. Range is -15 to 12 dB.
Ring Validation Time	This field defines the smallest amount of time required by the SPA8800 device to recognize a signal sent across the PSTN connection as a ring signal. If a call from the PSTN is not signaling a ring by a phone on your system, try increasing the validation time until a phone on your system rings.
Tip Ring Voltage Adjust	
Ring Indication Delay	This field defines the amount of time to wait prior to the ring indication occurring in a signal coming across the SPA8800 device. Some amount of time, dependent on country, is required for caller ID to be recognized for the call. Increase this time if a call that is supposed to have caller ID is not showing anything on the display. Decrease it if a ring appears to be occurring late or appears to be cut off.
Operational Loop Current Min	This field defines the minimum loop current that maintains the device in an off-hook state. If the current is lower than this value, the device will enter an on-hook state.
Ring Timeout	This field defines the maximum time allowed for the ring to cross between the higher and lower thresholds. It is expressed as the maximum allowed 1/f in which f is the ring frequency.
On Hook Speed	This field defines the speed with which a call goes from off-hook to on-hook when the phone is hung up.
Ring Threshold	This field defines the minimum voltage that can be detected as a ring.
Current Limiting Enable	This field controls the current alarm threshold.

Settings	Description
Ringer Impedance	This field sets the ringer impedance. Certain countries, like South Africa, require a low ringer impedance.
Line In Use Voltage	This field sets the voltage that must be maintained across a line to designate that the line is in use. This parameter should match the value used by the PSTN.

Click **Finish** to complete adding a PSTN connection to Cisco Unified Communications Manager Business Edition 3000 server. You can add upto 300 connections.

Restart/Shutdown Settings

GUI: Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

In the Restart/Shutdown page, you can view the Cisco Unified Communications Manager Business Edition 3000 software version that is installed on the server, you can restart (reboot) or shut down the server, or you can switch from the active to inactive version (or vice versa) of software that is installed on your server. Table 32-1 describes the settings that display on the Restart/Shutdown page (**Maintenance > Restart/Shutdown**).

> ⚠️
> **Caution**   Cisco recommends that you do not press the power button on the server to shut down or to restart the server unless you absolutely need to do so. If you do so, you may accidentally corrupt the file system, which may prevent you from being able to reboot your server.

Table 32-1   *Settings on the Restart/Shutdown Page*

Setting	Description
Active Version and Inactive Version	The active version, which is read only, is the current installed version of Cisco Unified Communications Manager Business Edition 3000 software that is running on your server. The inactive version, which is also read only, is the previously installed version of Cisco Unified Communications Manager Business Edition 3000 software on your server. The inactive version does not display if no previous version exists.
Restart	To stop all processes on the server and then have the server restart, click **Restart**. When you restart the server, calls in progress may drop because the phones unregister from the system, register with the system, and then restart.
Shutdown	When you click **Shutdown**, the server stops all processes, shuts down, and does not restart. In addition, the phones unregister, power down, and do not restart. All calls in progress drop.

Table 32-1   Settings on the Restart/Shutdown Page (continued)

Setting	Description
Switch Version	Click **Switch Version** when you are finished upgrading to a newer software version or when you need to fall back to the previously installed software version. **Tip** Clicking Switch Version causes the system to restart and become temporarily out of service. Clicking Switch Version may drop calls that are in progress. If you click Switch Version, the system restarts, and the version that is currently inactive becomes active. **Note** The system takes approximately 60 minutes to switch versions after the upgrade, and almost 30 minutes for subsequent switches of versions.

C H A P T E R **33**

Restore Settings

GUI: Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

Table 33-1 describes the settings that are displayed on the Restore page (**Maintenance > Restore**), which allows you to upload a backup tar file to restore data if you have a system failure; for example, you must replace your server or reinstall your server because of a system failure.

Table 33-1 Settings on the Restore Page

Setting	Description
USB	If your backup tar file is stored on a USB hard disk, click **USB** and browse to the location where your backup file exists.

Table 33-1 ***Settings on the Restore Page (continued)***

Setting	Description
SFTP Server	To locate the backup tar file on a SFTP server, perform the following tasks: 1. Click **SFTP Server**. 2. Enter the IP address or hostname of the SFTP server where the tar file exists. 3. Enter the username and password for the SFTP server. 4. Click **Browse** to browse to the location where the tar file is stored on the SFTP server. Cisco allows you to use any SFTP server product but recommends SFTP products that are certified with Cisco through the Cisco Technology Developer Partner program (CTDP). CTDP partners, such as GlobalSCAPE, certify their products with a specified release of your software. For information on which vendors have certified their products with your version of software, refer to the following URL: http://www.cisco.com/pcgi-bin/ctdp/Search.pl For information on using GlobalSCAPE with supported Cisco Unified Communications versions, refer to the following URL: 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 (refer to http://sshwindows.sourceforge.net/) • Cygwin (refer to http://www.cygwin.com/) • Titan (refer to http://www.titanftp.com/) ⚠️ **Caution** Cisco does not support using the SFTP product freeFTPd because of the 1 GB file size limit on this SFTP product. For issues with third-party products that have not been certified through the CTDP process, contact the third-party vendor for support.

Table 33-1   Settings on the Restore Page (continued)

Setting	Description
Run Restore	To restore your data from a tar file, click **Run Restore**. When you click this button, the restoration starts immediately. After the restoration starts, you cannot stop the restoration. After the restoration completes, click **OK**.
	Before you restore your data, consider the following information:
	• Make sure that you have selected a backup tar file that *exactly* matches the version of Cisco Unified Communications Manager Business Edition 3000 software that is running on your Cisco Unified Communications Manager Business Edition 3000 server.
	• Make sure that the Cisco Unified Communications Manager Business Edition 3000 software is installed and running on the server.
	• After an upgrade of your software, you cannot restore an earlier version of a backup file because the version of software and backup file do not match. Cisco recommends that you restore the data to the server before you upgrade the Cisco Unified Communications Manager Business Edition 3000 software.
	Tip Depending on the size of the database, the restoration of data may take hours to complete.

C H A P T E R 34

Search Settings

GUI: Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

On the search pages in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, you can search for the following types of items that are configured. By default, all entries that are configured display; you use the search page to find specific items. From the search pages, you can also access the edit page for the configuration, duplicate some types of configuration, and delete some types of configuration.

- Users—Select **Users/Phones > Users**.
- Phones—Select **Users/Phones > Phones**.
- Departments—Select **Users/Phones > Departments**.
- Usage Profiles—Select **Users/Phones > Usage Profiles**. (The Search page acts as a listing page because a maximum of 30 usage profiles can exist in the system.)
- Phone Applications—Select **Users/Phones > Phone Applications**.
- Hunt Lists—Select **Users/Phones > Hunt Lists**.
- Sites—Select **System Settings > Sites**. (The Search page acts as a listing page because a maximum of 11 sites can exist in the system.)

Tip You can also search for call detail records, which provide you with monitoring data about calls, in the Call Details Reports page (**Monitoring > Call Details Reports**).

Table 34-1 describes the settings that are displayed on the search pages. Some settings are not displayed on every page.

Tip To sort the search results, click the column headings. The arrow in the column indicates whether the results are ascending or descending in order; for example, an up arrow indicates ascending order.

Table 34-1   Settings on the Search Pages

Setting	Description
Filter	To narrow your search to find a particular type of configuration, select a search parameter from the Filter drop-down list box; enter case-sensitive text next to the **Filter** button, and click **Go**, which is not enabled until you specify your search criteria.
	Tip Each search page allows you to filter on different criteria. For example, in the Users search page, you can search by last name, user ID, and so on. In the Phones search page, you can search by phone model, name of phone, line, and so on.
	Tip If no items exist that match the criteria, the system does not display any entries, and a message displays that indicates that no configuration was found.
	Tip The filter setting does not display on the Sites and Usage Profile search pages.
Go	To search for the item(s), click **Go**.
	This setting does not display on the Sites or Usage Profile search pages.
Clear Filter	When you click **Clear Filter**, the text that you entered is deleted, and all configured entries display.
	This setting does not display on the Sites or Usage Profile search pages.
Edit	To make changes to an entry that you found, click **Edit**.
Delete	To delete the entire configuration for the entry, click **Delete**. A message warns that you are deleting the configuration.
	You cannot delete the central site, so the Delete link does not display for the central site on the Sites search page.
Duplicate	This link displays only on the Usage Profiles search pages.
	By clicking Duplicate for an entry, you can copy some types of configuration; for example, usage profiles. Duplicating the configuration allows you to add a new item quickly without having to enter all the information for the new item. You can modify the duplicate item to create a new item.

Table 34-1   Settings on the Search Pages (continued)

Setting	Description
Logout	This link displays on the Phone search page only for phones where users are logged into Cisco Extension Mobility. If a user forgets to log out of the phone, you can click this link to automatically log the user off of the phone.
Add *<item, such as Phone, User, and so on; for example, Add Phone>*	To add a new configuration, click **Add** *<item>*. The Sites search page displays the Add Remote User and Add Site buttons. To add a new teleworker site, click **Add Remote User** site. (A teleworker site is for workers that do not work only at the central or branch offices. They work at home or other locations. You can only have one teleworkers site, so this button is disabled if a teleworkers site already exists.) To add a branch office, click **Add Site**.
Import Users/Phones	If you include phone and user information in the Cisco-provided .xls data configuration file, you can import the phone and user information from the Cisco-provided .xls data configuration file. After you click **Import Users/Phones**, you must select where the Cisco-provided .xls data configuration file is located. The Cisco-provided .xls data configuration file must exist on the desktop of your PC or on a USB key. After you select the location, the system attempts to import the users and phones. Cisco Unified Communications Manager Business Edition 3000 displays a report that indicates whether the insertion succeeded or failed. The report indicates the number of phones and users that successfully got inserted, the number of phones and users that failed to get inserted, and the reason why the insertion failed. If errors (failures) occur, you can save the errors to a .csv file so that you can correct the Cisco-provided .xls data configuration file. After you update the Cisco-provided .xls data configuration file, attempt the import again through the Search Users or Search Phones pages. Clicking **Import Users/Phones** imports users and phones if they are all in the Cisco-provided .xls data configuration file; you can click the button in either search page to import both users and phones. (The system always imports all at the same time if all are in the file.)

Table 34-1   Settings on the Search Pages (continued)

Setting	Description
Showing per page	From this drop-down list box, you can select the maximum number of entries that you want to display on the search page. This setting only displays if you have 10 or more entries. This setting does not display on the Usage Profile and Sites Search pages.
Page	The Page setting displays which page of entries you are viewing and the total number of pages of entries; for example, Page 1 of 2 indicates that you are displaying page 1 and that 2 total pages of entries exist. To go another page of entries, enter the page number. This setting does not display on the Sites or Usage Profile Search pages.

C H A P T E R **35**

Setup Mode Settings

GUI: Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard

On the Setup Mode page, you select whether you want to manually configure the system through the GUIs or whether you want to upload the Cisco-provided .xls data configuration file that contains system configuration data, including values for the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard. If you upload a Cisco-provided .xls data configuration file, you do not need to perform additional configuration tasks in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard; the wizard automatically takes you to the wizard Summary page where you can review the values for your settings.

Table 35-1 describes the settings on the Setup Mode page.

Table 35-1   Settings on the Setup Mode Page

Setting	Description
Manual Setup	To use the default settings for the system or if you want to manually configure the settings in the GUIs, click **Manual Setup**.

Table 35-1   *Settings on the Setup Mode Page (continued)*

Setting	Description
Automatic Setup	Click **Automatic Setup** to set the system settings from the Cisco-provided .xls data configuration file. You can either upload the Cisco-provided .xls data configuration file from your desktop or from a USB key. Values in the subsequent pages are loaded with the information that you provide in the Cisco-provided .xls data configuration file. If a value is not in the file, the system uses the default value. The Cisco-provided .xls data configuration file must be a Microsoft Excel file (.xls), which you can obtain from www.cisco.com. The system reads data from the .xls file, and you can confirm the data on the wizard Summary page. ⚠ **Caution** The system cannot read the data if you have changed the order of the settings in the file or changed the file extension. The data does not get added toCisco Unified Communications Manager Business Edition 3000 until after the server restarts at the end of the wizard. Cisco recommends that after you restart the server, access the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface to determine whether configuration data got added to the system; for example, if you add user and phone data to the Cisco-provided .xls data configuration file, the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface immediately displays important information about phone and user insertion after you log into the interface.

C H A P T E R 36

Sites Settings

Impacted GUIs: Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard and Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

Tip You can also add the Site settings to the Cisco-provided .xls data configuration file.

Sites are the geographical locations where users (employees) work.

- Central Site—In most cases, the central site is the location where the majority of users work; in most cases, the company headquarters is the central site. In all cases, the Cisco Unified Communications Manager Business Edition 3000 server is located at the central site. The central site is mandatory; therefore, you cannot delete it. You can have only 1 central site.

- Remote Sites—Remote sites, which are optional, are branch offices that work with the central site; a WAN link or Internet connection and routers must exist between the central and remote sites. You must have dedicated subnets for remote sites. You can have up to 9 remote sites.

- Teleworker Site—A teleworker site, which is optional, is a site that is for workers that do not work only at the central site or branch offices; teleworkers use VPN connections to connect to the central site, and no router is required to contact the central site because their Internet connection provides access to the central site. You can have 1 teleworker site.

You can configure multiple branches for a central site. If you have multiple sites, you first configure the central site and then the remote sites. The following topics contain information about the tabs and settings that display on the Sites page (**Connections > Sites**):

- Configuring Central Site, page 36-2
- Configure Remote Site, page 36-9
- Configure Remote User Site, page 36-15
- Configuring Logical Partitioning, page 36-18

Table 36-1 describes the fields under the Sites tab, which display only in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard.

Table 36-1   Site Configuration Fields in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard

Field	Description
Site Options	• **Configure Central Site Only (Single Site)**—Select if you only have one site. • **Configure Central Site and One or More Branch Sites (Multisite)**—Select to configure the central site and one or more branch offices. • **Number of Branch Sites**—Select the number of branches you want to configure.
Remote Users	**Support Offsite Phones for Teleworkers**—Select to allow offsite phones for users who do not work at the central or branch offices.

Configuring Central Site

This section describes how to configure a central site. The central site is the location where the majority of users work; in all cases, the Cisco Unified Communications Manager Business Edition 3000 server is located at the central site. In most cases, the company headquarters is the central site.

The Central Site can be configured during the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard.

Table 36-2 describes the settings for the Central site.

Table 36-2   Configure Central Site

Field	Description
General Tab	
Basic Site Information	
Name	Enter a name for your central site.
Description	Enter the description for your central site.

Table 36-2   *Configure Central Site (continued)*

Field	Description
Local Mobile Phone Prefixes	Enter the local mobile phone prefixes for the central site. You can enter multiple local mobile phone prefixes separated by commas (,). The local mobile phone prefix for a site consists of the first few digits of the mobile phone number, and it uniquely determines the service provider and the local zone or region of the site where the call is considered local. Local mobile phone prefix must have a length that is valid in the country where you will set up the Cisco Unified Communications Manager Business Edition 3000. For example, in India, you must enter the first four digits of the mobile phone numbers as the local mobile phone prefix. In China, you must enter the first seven digits of the mobile phone numbers as the local mobile phone prefix. You need to specify the local mobile phone prefixes only for some countries such as India, China, and so on.
Internal Networks	

Table 36-2   Configure Central Site (continued)

Field	Description
Subnet Mask	The subnet and subnet masks allow you to associate your phone(s) and gateway(s) with a site. As a phone/gateway registers with the Cisco Unified Communications Manager Business Edition 3000 server, the server learns the IP address of the phone/gateway. The server then searches the subnet and masks for every site to determine the best match. The phone/gateway gets placed in that site. If no match is found, by default: • The phones are considered to be placed in your central site • The gateways are considered to be placed in an unknown site **Note** The site at which a gateway is placed determines whether your PSTN calls are routed through the that gateway, based on your Gateway Usage settings. By default, the subnet address 192.168.1.0 with a subnet mask of 24 displays on the Central Site page. You may update this information if it does not apply to your setup. **Note** The subnet mask value is the same which you have updated in the **System Settings > Network (Step 1 of 2)** in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard. Enter the subnet address and specify the number of subnet masks. Enter subnet addresses and masks that are unique for each site. To add more subnets, click the **Plus** icon. To delete subnets, click the **Minus** icon.
Media Access Allowed	
Allow Access to Conference Bridge	Check this check box to allow access to the conference bridge, which is an internal component of the Cisco Unified Communications Manager Business Edition 3000 software that is used for conferences.

Table 36-2   Configure Central Site (continued)

Field	Description
Allow Access to Music On Hold Server	Check this check box to allow access to music on hold, which plays music on the phone when the user is on hold.
	You set the audio source for music on hold in the usage profile. You upload audio source .wav files for music on hold on the Music On Hold page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**System Settings > Music On Hold**).
Allow Access to Transcoder	Check this check box to allow access to a transcoder, which is a component of the Cisco Unified Communications Manager Business Edition 3000 software that can take the media stream from a codec and converts it from one compression type to another compression type.
Call Settings Tab	
Call Privileges Information	
Highest Privilege Allowed	Select the calling privileges for this site. The order goes from lowest privilege to highest privilege. For example, if you do not want the users at the sites to be able to make international calls but the users can make long distance calls, select Long Distance Calls.
	This value applies to the entire site, so select a value that accommodates all users. Because this setting applies to the entire site, you restrict whether some users can make certain types of calls by updating the Highest Level of Calls Allowed setting in the usage profile and then applying the usage profile to the users. If the value for the Highest Privilege Allowed does not match the value that you set for the Highest Level of Calls, the lowest level that is configured for the settings get applied to the users.
Emergency Calling Information	

Table 36-2   Configure Central Site (continued)

Field	Description
Allow Emergency Calls from this site	Check this check box to allow making emergency calls from this site. Emergency calls are made to the center that addresses emergencies for your municipality. You can restrict whether individual users can make emergency calls by checking or unchecking the Emergency Calls check box in a usage profile (**Users/Phones > Usage Profiles**) and then applying that usage profile to the user (**Users/Phones > Users**).
	If this remote site is not part of the Local Exchange Carrier (LEC), do not check this check box. In most cases, for the teleworker site, uncheck this check box.
Additional Emergency Services Numbers	Enter the additional emergency services numbers.
	Additional Emergency Numbers are treated as emergency calls (for example, a police station number in the city to contact during emergency).
	To add multiple additional emergency services numbers, ensure that you separate each number with commas.
Emergency Location ID Numbers (ELINs)	Enter the emergency location ID number within your respective site or location.
	To add multiple emergency location ID numbers, ensure that you separate each ELIN with commas.
	⚠ **Caution** For the emergency services to correctly identify the site location as the source of emergency calls, you must specify at least one ELIN. This ELIN phone number must be unique to a site and be registered with its location.
PSTN Access Information	
Gateway Usage	This setting allows you to control the use of gateways placed in different sites for routing PSTN calls made from phones placed in this site.
	Chosen gateways are ordered based on gateway description. Calls are distributed in a top-down order among this chosen gateways group.
	Please understand your country's regulations thoroughly before you configure this. Configuring this incorrectly may lead to toll bypass rules being violated.

Table 36-2   Configure Central Site (continued)

Field	Description
All Gateways	This option will configure all gateways registered to existing sites in the system to be used for routing PSTN calls made from phones placed in this site.
	Click **Show All Gateways** to display all the gateways available for use.
	Click **Hide All Gateways** to hide the gateways from the displayed list.
Local Gateways Only	This option will enforce only gateways placed in this site to be used for routing PSTN calls made from phones placed in this site.
	Click **Show Local Gateways** to display the local gateways available for use.
	Click **Hide Local Gateways** to hide the local gateways from the displayed list.
Custom	This option will allow you to choose gateways from a list of gateways added to your system to be used for routing outbound PSTN calls made from phones placed in this site. You may choose to order the selected gateways you wish to use.
Call Quality Tab	
Call Between Sites Information	
Bandwidth Between Sites	Select the amount of span that you are leasing from your service provider for your Internet and intranet connectivity.
	Note Sites which operate with a network bandwidth less than T1 to a central site are not supported for point to point video calls.
Video: Enable Video Calls Between Sites	Check box to enable video calls between sites.
	Note Point-to-point video is not supported within the teleworker site or between the teleworker site and any other site connected to the teleworker site.

Table 36-2   Configure Central Site (continued)

Field	Description
Bandwidth Allocation for Audio and Video ⚠️ **Caution** The number of video calls is expected to be small. Because bandwidth is usually limited between sites, the system does not reserve video bandwidth for infrequent video calls because this bandwidth can be used for the audio-only calls. Thus, if a large number of video calls are made (relative to the number of video calls between sites as shown on the sites page), audio and video quality can suffer between the sites. If you encounter poor quality due to a large number of video calls, then you may find it necessary to disable video to and from site.	Select the percentage of span that you want to make available for combined audio and video between sites; for example, between the central and remote site. The rest of the span gets used for data communication between sites. You can use the slider to select the value or enter in the field provided.
Quality/Quantity Tradeoff	Determine whether the quality of (audio and video) calls or the number of total calls is more important for calls between the sites; for example, between the central and teleworkers site or central and branch sites. Slide the scale to accommodate your decision. You can use the slider to select the value. **Note** Point-to-point video is not supported within the teleworker site or between the teleworker site and any other site connected to the teleworker site.
Approximate Call Capacity to Other Sites	This setting, which is read only, lists the maximum number of calls (audio and video) that can occur between the sites. The number changes if you update any of the settings in the Calls Between Sites section.
Calls Within Sites	
Quality/Quantity Tradeoff	Determine whether the quality of calls (audio and video) or the number of total calls is more important for calls within the site that you are configuring. Slide the scale to accommodate your decision. You can use the slider to select the value.

Configure Remote Site

This section describes how to configure a branch site. Remote sites represent physical locations where your branch offices are located. Teleworker site represents a virtual location used to place users that do not work at the central site or any remote site. You can configure multiple branch/remote sites in your system.

Table 36-3 describes the settings for remote sites, including branch offices and the teleworker site.

Table 36-3   Configure Central and Branch Sites

Field	Description
General Tab Information	
Basic Site Information	
Name	Enter the name of your Remote Site.
Description	Enter a description for your Remote Site.
Time Zone	From the drop-down list box, select the time zone for the site.
Internal Networks	

Table 36-3   Configure Central and Branch Sites (continued)

Field	Description
Subnet Mask	The subnet and subnet masks allow you to associate your phone(s) and gateway(s) with a site. As a phone/gateway registers with the Cisco Unified Communications Manager Business Edition 3000 server, the server learns the IP address of the phone/gateway. The server then searches the subnet and masks for every site to determine the best match. The phone/gateway is placed in that site. If no match is found, by default: • The phones are considered to be placed in your Central Site • The gateways are considered to be placed in an unknown site **Note** Site at which a gateway is placed decides whether your PSTN calls are routed through the that gateway, based on your Gateway Usage settings. By default, subnet address 192.168.1.0 with a subnet mask of 24 displays on the central site page. You may update this information if it does not apply to your setup. **Note** The subnet mask value is the same which you have updated in the **System Settings > Network (Step 1 of 2)** in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard. Enter the subnet address and specify the number of subnet masks. Enter subnet addresses and masks that are unique for each site. To add more subnets, click the **Plus** icon. To delete subnets, click the **Minus** icon.
Media Access Allowed	
Allow Access to Conference Bridge	Check this check box to allow access to the conference bridge, which is an internal component of the Cisco Unified Communications Manager Business Edition 3000 software that is used for conferences.

Table 36-3   Configure Central and Branch Sites (continued)

Field	Description
Allow Access to Music On Hold Server	Check this check box to allow access to music on hold, which plays music on the phone when the user is on hold.
	You set the audio source for music on hold in the usage profile. You upload audio source .wav files for music on hold on the Music On Hold page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**System Settings > Music On Hold**).
Allow Access to Transcoder	Check this check box to allow access to a transcoder, which is a component of the Cisco Unified Communications Manager Business Edition 3000 software that can take the media stream from a codec and converts it from one compression type to another compression type.
Call Settings Tab	
Calls Privileges Information	
Highest Privilege Allowed	Select the calling privileges for this site. The order goes from lowest privilege to highest privilege. For example, if you do not want the users at the sites to be able to make international calls but the users can make long distance calls, select Long Distance Calls.
	This value applies to the entire site, so select a value that accommodates all users. Because this setting applies to the entire site, you restrict whether some users can make certain types of calls by updating the Highest Level of Calls Allowed setting in the usage profile and then applying the usage profile to the users. If the value for the Highest Privilege Allowed does not match the value that you set for the Highest Level of Calls, the lowest level that is configured for the settings get applied to the users.
Emergency Calling Information	

Table 36-3   Configure Central and Branch Sites (continued)

Field	Description
Allow Emergency Calls from this site	Check this check box to allow making emergency calls from this site. Emergency calls are made to the center that addresses emergencies for your municipality. You can restrict whether individual users can make emergency calls by checking or unchecking the Emergency Calls check box in a usage profile (**Users/Phones > Usage Profiles**) and then applying that usage profile to the user (**Users/Phones > Users**). If this remote site is not part of the Local Exchange Carrier (LEC), do not check this check box. In most cases, for the teleworker site, uncheck this check box.
Additional Emergency Services Numbers	Enter the additional emergency services numbers. Additional Emergency Numbers are treated as emergency calls (for example, a police station number in the city to contact during emergency). To add multiple additional emergency services numbers, ensure that you separate each number with commas.
Emergency Location ID Numbers (ELINs)	Enter the emergency location ID number within your respective site or location. To add multiple emergency location ID numbers, ensure that you separate each ELIN with commas. ⚠ **Caution** For the emergency services to correctly identify the site location as the source of emergency calls, you must specify at least one ELIN. This ELIN phone number must be unique to a site and be registered with its location.
PSTN Access Information	
Gateway Usage	This setting allows you to control the use of gateways placed in different sites for routing PSTN calls made from phones placed in this site. Chosen gateways are ordered based on gateway description. Calls are distributed in a top-down order among this chosen gateways group. Please understand your country's regulations thoroughly before you configure this. Configuring this incorrectly may lead to toll bypass rules being violated.

Table 36-3   Configure Central and Branch Sites (continued)

Field	Description
All Gateways	This option will configure all gateways registered to existing sites in the system to be used for routing PSTN calls made from phones placed in this site.
	Click **Show All Gateways** to display all the gateways available for use.
	Click **Hide All Gateways** to hide the gateways from the displayed list.
Local Gateways Only	This option will enforce only gateways placed in this site to be used for routing PSTN calls made from phones placed in this site.
	Click **Show Local Gateways** to display the local gateways available for use.
	Click **Hide Local Gateways** to hide the local gateways from the displayed list
Custom	This option will allow you to choose gateways from a list of gateways added to your system to be used for routing outbound PSTN calls made from phones placed in this site. You may choose to order the selected gateways you wish to use.
Call Quality Tab	
Call Between Sites Information	
Bandwidth Between Sites	Select the amount of span that you are leasing from your service provider for your Internet and intranet connectivity.
	Note Sites which operate with a network bandwidth less than T1 to a central site are not supported for point-to-point video calls.
Video: Enable Video Calls Between Sites	Check box to enable video calls between sites.
	Note Point-to-point video is not supported within the teleworker site or between the teleworker site and any other site connected to the teleworker site.

Table 36-3   Configure Central and Branch Sites (continued)

Field	Description
Bandwidth Allocation for Audio and Video **Caution** The number of video calls is expected to be small. Because bandwidth is usually limited between sites, the system does not reserve video bandwidth for infrequent video calls because this bandwidth can be used for the audio-only calls. Thus, if a large number of video calls are made (relative to the number of video calls between sites as shown on the sites page), audio and video quality can suffer between the sites. If you encounter poor quality due to a large number of video calls, then you may find it necessary to disable video to and from the sites.	Select the percentage of span that you want to make available for combined audio and video between sites; for example, between the central and remote site. The rest of the span gets used for data communication between sites. You can use the slider to select the value or enter in the field provided.
Quality/Quantity Tradeoff	Determine whether the quality of (audio and video) calls or the number of total calls is more important for calls between the sites; for example, between the central and teleworkers site or central and branch sites. Slide the scale to accommodate your decision. You can use the slider to select the value. **Note** Point to point video is not supported within the teleworker site or between the teleworker site and any other site connected to the teleworker site.
Approximate Call Capacity to Other Sites	This setting, which is read only, lists the maximum number of calls (audio and video) that can occur between the sites. The number changes if you update any of the settings in the Calls Between Sites section.
Calls Within Sites	
Quality/Quantity Tradeoff	Determine whether the quality of calls (audio and video) or the number of total calls is more important for calls within the site that you are configuring. Slide the scale to accommodate your decision. You can use the slider to select the value.

Configure Remote User Site

This section describes how to configure a remote user site. Remote user site represents a virtual location used to place users/teleworkers that do not work at the central site or any remote site.

The remote user site uses the Time zone and Local Area Code(s) of the central site. All the phones in the remote user site will display the system time zone. To place PSTN calls outside the central site, prefix the long distance dial code. In countries that have toll bypass regulation, ensure that the PSTN calls from remote user site adheres to their country regulation.

Table 36-4 describes the settings for a remote user.

Table 36-4   Configure Remote User for Teleworkers Site

Field	Description
General	
Name	Enter the name for your Remote User Site.
Description	Enter a description for your Remote User Site.
Media Access Allowed	
Allow Access to Conference Bridge	Check this check box to allow access to the conference bridge, which is an internal component of the Cisco Unified Communications Manager Business Edition 3000 software that is used for conferences.
Allow Access to Music On Hold Server	Check this check box to allow access to music on hold, which plays music on the phone when the user is on hold.
	You set the audio source for music on hold in the usage profile. You upload audio source .wav files for music on hold on the Music On Hold page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**System Settings > Music On Hold**).
Allow Access to Transcoder	Check this check box to allow access to a transcoder, which is a component of the Cisco Unified Communications Manager Business Edition 3000 software that can take the media stream from a codec and converts it from one compression type to another compression type.
Call Settings Tab	
Call Privileges Information	

Table 36-4   *Configure Remote User for Teleworkers Site*

Field	Description
Highest Privilege Allowed	Select the calling privileges for this site. The order goes from lowest privilege to highest privilege. For example, if you do not want the users at the sites to be able to make international calls but the users can make long distance calls, select Long Distance Calls.
	This value applies to the entire site, so select a value that accommodates all users. Because this setting applies to the entire site, you restrict whether some users can make certain types of calls by updating the Highest Level of Calls Allowed setting in the usage profile and then applying the usage profile to the users. If the value for the Highest Privilege Allowed does not match the value that you set for the Highest Level of Calls, the lowest level that is configured for the settings get applied to the users.
Emergency Calling Information	
Allow Emergency Calls from this site	Check this check box to allow making emergency calls from this site. Emergency calls are made to the center that addresses emergencies for your municipality. You can restrict whether individual users can make emergency calls by checking or unchecking the Emergency Calls check box in a usage profile (**Users/Phones > Usage Profiles**) and then applying that usage profile to the user (**Users/Phones > Users**).
	If this remote site is not part of the Local Exchange Carrier (LEC), do not check this check box. In most cases, for the teleworker site, uncheck this check box.
Additional Emergency Services Numbers	Enter the additional emergency services numbers.
	Additional Emergency Numbers are treated as emergency calls (for example, a police station number in the city to contact during emergency).
	To add multiple additional emergency services numbers, ensure that you separate each number with commas.

Table 36-4   Configure Remote User for Teleworkers Site

Field	Description
Emergency Location ID Numbers (ELINs)	Enter the emergency location ID number within your respective site or location.
	To add multiple emergency location ID numbers, ensure that you separate each ELIN with commas.
	⚠️ **Caution** For the emergency services to correctly identify the site location as the source of emergency calls, you must specify at least one ELIN. This ELIN phone number must be unique to a site and be registered with its location.
PSTN Access Information	
Gateway Usage	This setting allows you to control the use of gateways placed in different sites for routing PSTN calls made from phones placed in this site.
	Chosen gateways are ordered based on gateway description. Calls are distributed in a top-down order among this chosen gateways group.
	Please understand your country's regulations thoroughly before you configure this. Configuring this incorrectly may lead to toll bypass rules being violated.
All Gateways	This option will configure all gateways registered to existing Sites in the system to be used for routing PSTN calls made from phones placed in this site.
	Click **Show All Gateways** to display all the gateways available for use.
	Click **Hide All Gateways** to hide the gateways from the displayed list
Local Gateways Only	This option will enforce only gateways placed in this site to be used for routing PSTN calls made from phones placed in this site.
	Click **Show Local Gateways** to display the local gateways available for use.
	Click **Hide Local Gateways** to hide the local gateways from the displayed list.
Custom	This option will allow you to choose gateways from a list of gateways added to your system to be used for routing outbound PSTN calls made from phones placed in this site. You may choose to order the selected gateways you wish to use.
Call Quality Tab	

Table 36-4   Configure Remote User for Teleworkers Site

Field	Description
Call Between Sites Information	
Bandwidth Between Sites	Select the amount of span that you are leasing from your service provider for your Internet and intranet connectivity.
Video: Enable Video Calls Between Sites. Note Point to point video is not supported within the teleworker site or between the teleworker site and any other site connected to the teleworker site.	Check box to enable video calls between sites. Note Disabled for Teleworker sites.
Bandwidth Allocation for Audio and Video Note Point to point video is not supported within the teleworker site or between the teleworker site and any other site connected to the teleworker site.	Select the percentage of span that you want to make available for audio between sites; for example, between the central and remote site. The rest of the span gets used for data communication between sites. You can use the slider to select the value or enter in the field provided.
Quality/Quantity Tradeoff	Determine whether the quality of calls or the number of total calls is more important for calls between the sites; for example, between the central and teleworkers site or central and branch sites. Slide the scale to accommodate your decision. You can use the slider to select the value.
Approximate Call Capacity to Other Sites	This setting, which is read only, lists the maximum number of calls that can occur between the sites. The number changes if you update any of the settings in the Calls Between Sites section.
Calls Within Sites	
Quality/Quantity Tradeoff	Determine whether the quality of calls or the number of total calls is more important for calls within the site that you are configuring. Slide the scale to accommodate your decision. You can use the slider to select the value.

Configuring Logical Partitioning

Some countries have regulations on PSTN access to prevent toll bypass when PSTN networks are bridged with data networks; for example, India. In Cisco Unified Communications Manager Business Edition 3000, you can control how phones in different sites participate during PSTN calls. You can configure Logical Partitioning on Cisco Unified Communications Manager Business Edition 3000 if installed in countries enforcing the Telecom Regulations.

Table 36-5 describes the settings that display on the Edit Logical Partitioning page.

Table 36-5   Settings on Edit Logical Partitioning page

Field	Description
PSTN Access Restrictions	
Default (Local Site Access only)	Choose this to prevent a phone in a remote site participating in a call happening between phone(s) in the local site and PSTN (using the gateway of the local site).
Custom (Choose Allowed Sites)	In the grid showing all your sites, check the check boxes to allow PSTN access between a pair of sites. This setting is bidirectional and allows phones from the selected pair of sites to participate in the same call connected to PSTN. **Note** When you add a new site, the Add Site page displays all the sites. You can select the site(s) to which phones from the selected site(s) and the new site can participate in the same call connected to PSTN.

C H A P T E R 37

Summary Settings

GUI: Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard

The Summary page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard gives details of the changes that you made on the System Setup, PSTN Gateway, Dial Plan, Sites, and Usage Profiles tabs. Click each tab to review the changes you made; to go to the page to make changes in the wizard, click **Go to the Selected Step**. See these topics for detailed field descriptions for each tab displayed in the Summary page:

- License Settings
- Network Settings
- Date and Time Settings
- Dial Plan Settings
- Sites Settings
- Usage Profiles Settings

C H A P T E R 38

Upgrade Settings

GUI: Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

Table 38-1 describes the settings that display on the Upgrade page (**Maintenance > Upgrade**), which allows you to upload a valid file to upgrade the software that is running on your server. To upgrade your software, you can use either a DVD or SFTP server that has the upgrade file on it. You can use the Upgrade page to install ISO images for new releases, new locale or locale updates, device packs, phone firmware loads, dial plan updates, or other Cisco-issued patches (.cop files) that are required for your Cisco Unified Communications Manager Business Edition 3000 system.

⚠
Caution   Before you upgrade your software, download the upgrade file from www.cisco.com to your PC. Then, copy the file to a SFTP server or DVD before you start the upgrade.

Notify your users when an upgrade is occurring. Do not make any configuration updates during the upgrade, even in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface.

⚠
Caution   Cisco also recommends that you take a backup of your system after upgrading the Country Pack (.cop files). This ensures that you can restore from a backup later, because the restore process requires that the server and country pack versions in the backup match the current version on the Cisco Unified Communications Manager Business Edition 3000 server.

Table 38-1   Settings on the Upgrade Page

Setting	Description
DVD Drive On System	If your upgrade file exists on DVD, click **DVD Drive on System** and browse to the location where your file exists.

Table 38-1 *Settings on the Upgrade Page (continued)*

Setting	Description
SFTP Server	To upload the file from a SFTP server, perform the following tasks:
	1. Click **SFTP Server**.
	2. Enter the IP address or hostname of the SFTP server where the upgrade file exists.
	3. Enter the username and password for the SFTP server.
	4. Click **Browse** to browse to the location where the upgrade file is stored on the SFTP server.
	Cisco allows you to use any SFTP server product but recommends SFTP products that are certified with Cisco through the Cisco Technology Developer Partner program (CTDP). CTDP partners, such as GlobalSCAPE, certify their products with a specified release of your software. For information on which vendors have certified their products with your version of software, refer to the following URL:
	http://www.cisco.com/pcgi-bin/ctdp/Search.pl
	For information on using GlobalSCAPE with supported Cisco Unified Communications versions, refer to the following URL:
	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 (refer to http://sshwindows.sourceforge.net/)
	• Cygwin (refer to http://www.cygwin.com/)
	• Titan (refer to http://www.titanftp.com/)
	⚠️ **Caution** Cisco does not support using the SFTP product freeFTPd because of the 1 GB file size limit on this SFTP product. For issues with third-party products that have not been certified through the CTDP process, contact the third-party vendor for support.

Table 38-1   *Settings on the Upgrade Page (continued)*

Setting	Description
Start Upgrade	This button does not display until you have selected the upgrade file from the DVD or SFTP server options.
	Tip Before you upgrade your software, make sure that you run a backup or verify that you have a valid backup tar file.
	After you start the upgrade, the system displays the progress of the upgrade. If you want to cancel the upgrade, click **Cancel**. If another administrator logs into the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface while the upgrade is progressing, the administrator can assume control of the upgrade and cancel the upgrade that is in progress.
	⚠ **Caution** The amount of time that it takes to upgrade your software depends on many factors, including the size of the database. Cisco strongly recommends that you upgrade your software when you can minimize the impact to your users; for example, the upgrade may impact call processing, so do not upgrade when high call volume occurs.
	To upgrade your software, click **Start Upgrade**. When you click this button, the upgrade of software starts immediately

Table 38-1   Settings on the Upgrade Page (continued)

Setting	Description
MD5 Checksum and Automatically Switch Versions	The MD5 checksum and Automatically Switch Versions settings display before the upgrade starts.
	If you enter a MD5 checksum, which is optional, the system compares the value that you entered to the value for the uploaded upgrade file. If the system determines that the values do not match, the upgrade is automatically cancelled because the upgrade file appears to be corrupted. (The MD5 checksum setting is disabled for upgrades of ISO images that are uploaded through DVD.)
	For upgrades of ISO images, you must select Yes to automatically switch the version after the upgrade is completed. A restart of the server automatically occurs after the upgrade is complete.
	Note If you are upgrading from Cisco Unified Communications Manager Release 8.5 to 8.6, Automatically Switch Versions option is not applicable. Regardless of the option you select, the system will automatically restart after successful completion of the upgrade.
Status of Upgrade	Cisco Unified Communications Manager Business Edition 3000 displays status of the download of the file, the validation of the MD5 checksum, and the progress of the upgrade. To stop the upgrade, click **Cancel**.
	Note If you are upgrading from Cisco Unified Communications Manager Business Edition 3000 Release 8.5 to 8.6, the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface will not be available until the upgrade is complete (this might take several hours). If you want to monitor the upgrade progress, you must connect an external monitor to the Cisco Unified Communications Manager Business Edition 3000 server.

Installed Software Settings

The Installed Software page allows you to view the Optional Software Packages on your server. You can use the **Maintenance >Upgrade** page to install the Optional Software Packages that are required for your Cisco Unified Communications Manager Business Edition 3000 (Unified CMBE 3000) system.

Table 39-1 lists the name of the COP files and their respective naming conventions:

Table 39-1   *Lists the name of the COP files and their respective naming conventions:*

File Type	Naming convention
CUCM Localization COP files	cm-locale-<>.cop
PO Localization COP files	po-locale-<>.cop
Device Pack COP file	cmterm-devicepack<>.cop
Common cmterm COP file	cmterm-<>.cop
CUCM Connection Pack COP files	cm-conp-CP-<>.cop
General cop files	ucos<>.cop
Genearl cop files	ciscocm<>.cop
CSA COP files	platform-csa-<>.cop
Country pack files	cm-locale-arabic_saudi_arabia_CP-8.6.1.9902-208.cop

Table 39-2 describes the settings that are displayed on the Installed Software page (**Maintenance > Installed Software**).

Table 39-2   Settings on the Installed Software Page

Setting	Description
System Software	**Active Version** refers to the latest installed Unified CMBE 3000 version on your system. **Inactive Version** refers to the previous version of the Unified CMBE 3000. The Inactive Version does not display if there is no previous version of the Unified CMBE 3000 available. **Note** Both the Active and Inactive versions are available in read only mode.
Optional Software Packages	**Optional Software Packages** display the name and installation date of the installed the Optional Software Packages on your system. **Note** By default, the optional software packages are sorted by their names. The Optional Software Packages can also be sorted by the installation date on your system.

CHAPTER **40**

Usage Profiles Settings

Impacted GUIs: Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard and Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

> **Tip** Usage profile settings also display in the Cisco-provided .xls data configuration file.

A usage profile allows you to configure most of the usage settings for a phone in one place. You can edit an existing usage profile, duplicate it to create a new one, add an entirely new usage profile, or delete a usage profile. When you create a new or modified usage profile, you save it with a unique name. After you configure your usage profiles, you can assign them to users or departments, so that the settings in the usage profile apply to the phones that belong to an individual user or a department. (Users and Departments are configured in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.)

> **Note** You can have a maximum of 30 usage profiles in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface and a maximum of 10 usage profiles in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard.

The Usage Profiles settings comprise the following tabs:

- General Tab, page 40-7
- Phone Button Template Tab, page 40-14
- Phone Features Tab, page 40-14
- Phone Application Tab, page 40-15

General Tab

Table 40-1 describes the settings on the General tab.

Table 40-1   Settings on the General Tab

Setting	Description
Profile Information	
Name	Enter a name that uniquely identifies the profile. The value that you enter displays in the Usage Profile drop-down list box on the Department and User pages in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.
	Enter up to 30 alphanumeric characters, periods (.), underscores (_), or hyphens.
Description	Enter a description of the profile. The description displays on the Search Usage Profile page.
	Enter up to 128 characters, except for quotation marks ("), brackets (<>), ampersand (&), or percent sign (%). Do not copy or paste or press the tab key.
Allowed Calls	
This section works in conjunction with the site where the phone is located.	
Highest Level of Calls Allowed	From the drop-down list box, choose the highest level of calls that are allowed for the users that use this usage profile. The list is ordered from lowest to highest privilege with International Calls being the highest level of calls that a user can place.
	This setting works in conjunction with the Highest Privilege Allowed setting that is in the Sites page. The Highest Privilege Allowed setting applies to the entire site. The Highest Level of Calls Allowed in the usage profile applies to users. If the values do not match for the usage profile and the site, the value for the settings that is the lowest level takes precedence and applies to the user.
Emergency Calls	To allow the user to make emergency calls to the local center that handles emergencies in your municipality, select this check box. In the United States, emergency calls use 911 or 9911.
	This setting works in conjunction with the Allow Emergency Calls setting in the Sites page. The Allow Emergency Calls setting in the site page applies to the entire site. The Emergency Calls check box in the usage profile applies to users. To restrict certain users from making emergency calls, uncheck this check box.

Table 40-1   Settings on the General Tab (continued)

Setting	Description
Call Features	
Select the check boxes for the features that you want to enable.	
Call Barge	Barge allows a user to interrupt a call without the permission of the participants that are on the call. When a user barges into a call, the user presses the line button for the shared line or the barge softkey/button on the phone (depending on phone model). With barge, the system sets up a conference between the participants. When any participant leaves the call, the remaining participants may experience a brief interruption as the system sets up a point-to-point call. **Note** Barge requires the use of shared lines. You must set up shared lines between the participants for barge to work.
Call Park	Call park allows users to park (temporarily store) a call and then retrieve the call on a different phone in the system. For call park, the user must press the transfer softkey or buttons on the phone and dial the call park extension from the dial plan.
Call Pickup	Call pickup allows a user to pick up calls for another user on the phone that the user owns. For call pickup, the user must press the buttons or softkeys on the phone and dial the call pickup extension from the dial plan.

Table 40-1   Settings on the General Tab (continued)

Setting	Description
Reach Me Anywhere	Reach Me Anywhere associates other phones, such as a mobile phone, with line 1 from the desk phone of the user. Reach Me Anywhere only works for calls that occur on line 1. Reach Me Anywhere provides the following support: • Receiving an outside call on desk phone or external phone—An outside caller dials the user extension. The desk phone and external phone ring simultaneously. When the user answers one phone, the other phone stops ringing. The user can switch from the desk phone to an external phone during a call without losing the connection. Switching gets supported for incoming and outgoing calls. • Moving back from an external phone to a desk phone—If a call was initiated to or from the desk phone and then shifted to the external phone, the call can get shifted back to the desk phone. • Using midcall features—During a call, users can perform midcall functions, including hold/resume, transfer, call park, and conference. The external phone cannot resume calls that Cisco Unified IP Phones put on hold. **Note** If you enable Reach Me Anywhere, the call privileges for the Reach Me Anywhere call are always based on the highest calling privileges that are selected for the central site.
Extension Mobility	Cisco Extension Mobility allows users to temporarily access their primary phone configuration such as line appearances, services, and speed dials from a Cisco Extension Mobility-enabled phone. A user must log into the Cisco Extension Mobility-enabled phone to see the primary phone configuration. You enable Cisco Extension Mobility separately for the phone that can be logged in to and for the user that can log in to a Cisco Extension Mobility-enabled phone.

Table 40-1   Settings on the General Tab (continued)

Setting	Description
Voicemail	For voicemail support, your users can perform the following tasks: • Call into the voice messaging system • Send voice messages by using the phone keypad • Check voice messages by using the phone keypad • Reply to voice messages by using the phone keypad • Forward voice messages by using the phone keypad • Manage receipts by using the phone keypad—Receipts indicate when a voice message was played by an intended recipient, when it was received by the intended recipient, and if it was received by the intended recipient. **Note** Before you enable voicemail, verify whether you have installed licenses for voicemail. You must install voicemail licenses for each user that can use voicemail.
Call Divert	Call divert allows a user to transfer a ringing, connected, or held call directly to voicemail. After a call is diverted, the line becomes available to place or receive new calls. For call divert to work, the user must press the call divert softkey/button on the phone. You must enable voicemail in the usage profile for the user to use call divert.

Table 40-1   Settings on the General Tab (continued)

Setting	Description
Forward Busy Calls	For call forward busy, Cisco Unified Communications Manager Business Edition 3000 automatically transfers the call to the destination when the line is busy.
	Select the **Forward Busy Calls** check box; then, select **To Voicemail**, if available, or enter the phone number, including outside dial codes, area codes, and so on, where you want calls forwarded when the line is busy. (Enter a phone number as if you were placing a call on the phone.)
	A phone number may include up to 50 digits, asterisk, or octothorpe (#).
	The voicemail option only displays if you enable voicemail in the call features section of the usage profile.

Table 40-1   Settings on the General Tab (continued)

Setting	Description
Forward No Answer Calls To	For call forward no answer, Cisco Unified Communications Manager Business Edition 3000 automatically transfers the call to the configured destination when the called party does not answer the call.
	Select the **Forward No Answer Calls To** check box; then, select **To Voicemail**, if available, or enter the phone number, including outside dial codes, area codes, and so on, where you want calls forwarded when the user does not answer a call. (Enter a phone number as if you were placing a call on the phone.)
	If you leave the phone number blank, the phone continues to ring until the caller hangs up the phone.
	A phone number, which may include up to 50 digits, asterisk, or octothorpe (#).
	The voicemail option only displays if you enable voicemail in the call features section of the usage profile.
Audio for Hold	The music on hold feature plays music to users when they are put on hold, so this setting impacts whether audio streams to the user when a call is put on hold. From the drop-down list box, select the source for audio for hold:
	• Sample Audio Source—Audio streams to the user when the phone is put on hold.
	• Silence—When the phone is put on hold, music on hold does not play.
	• Audio Jack—This option requires a USB to audio jack assembly.
	Tip Before you can use music on hold, you must enable music on hold on the Sites pages. To use an audio .wav file other than the sample audio source that is provided with your system, you can upload a .wav file through the Music On Hold page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**System Settings > Music On Hold**).

Phone Button Template Tab

Using the phone button template provides a fast way to assign a common button configuration to a large number of phones. The phone button template that is configured in the usage profile determines the order of line buttons and the types of functionality that displays next to the line buttons on the phone; for example, for all lines except line 1, which must be a line because of user-phone ownership, you can designate a line as a speed dial, line, or feature button (Mobility, Meet-Me Conference, and so on). In the usage profile, you must establish the purpose for 12 line buttons on the phone, even if the phone does not support 12 buttons.

Table 40-2   Settings on the Phone Button Template Tab

Button Number	Feature
Line Button 1	Button Number 1 is automatically designated as a line by the system because button number 1 is used to correlate the phone and user when the user extension is assigned to line 1 on the phone. You cannot update Line Button 1.
Line Buttons 2 through 12	You can assign some phone features, lines, and speed dials to line buttons 2 through 8. To assign a feature to a line, perform the following steps: 1. Double-click the name of the feature to display the drop-down list box. 2. Select the option from the drop-down list box. 3. Press **Enter** or click outside of the drop-down list box. 4. Click **Save**.

Phone Features Tab

Table 40-3 describes the settings on the Phone Features tab. The Phone Features tab displays phone functionality that relates to phone hardware; for example, the PC port, phone screen, headset, speakerphone, and so on.

Table 40-3   Settings on the Phone Features Tab

Setting	Description
Phone Features	
Speakerphone and Headset	To enable or disable the speakerphone and headset, select one of the options from the drop-down list box. You can enable the headset only, disable the headset and the speakerphone, or enable the speakerphone and headset. Default: Enable Speakerphone and Headset

Table 40-3   Settings on the Phone Features Tab (continued)

Setting	Description
PC Port Access	For security purposes, you can prevent access to the PC port on the phone. To enable access to the PC port on the back of the phone, select this check box. Default: Enabled
Web Access	For security purposes, you may want to disallow access to the web pages on the phone. To allow the phone to accept connections from a web browser or other HTTP client, select this check box. If this check box is cleared, the user cannot access the internal web pages on the phone. Default: Enabled
Span to PC Port	Select this check box to allow the phone to forward packets that have been transmitted and received on the phone port to the PC port. You must enable this setting if you are running an application on the PC port that monitors traffic on the phone. Default: Disabled
Phone Display	
Power Save	To allow the phone to power down, check the **Power Save** check box.
Turn Off Phone Screen On:	To turn off the phone screen on specified days of the week, select the check boxes for the appropriate days. To specify the days, you must select the **Power Save** check box.
Turn Off Phone Screen Between:	To turn off the phone screen between specified times, click the field and select the times.
Turn Off Phone Screen After Idle for:	Determine the amount of time that the system waits before turning off the phone screen after it is idle. Select the hours and minutes that the system should wait before turning off the phone screen.

Phone Application Tab

Phone applications display interactive content, such as text and graphics, on some phone models. You can add customized phone applications that provide information on weather, stocks, company news, and so on. Users access these phone applications on the phone by using the services and directories buttons or menu options (availability varies by phone model). When a user presses the services button (or chooses the services menu item), a menu of configured phone applications displays. The user then chooses a phone application from the list, and the phone displays the phone application.

Table 40-4 describes the settings on the Phone Application tab. From this tab, you can assign or unassign phone applications to the usage profile and you can quickly add new phone applications, which automatically display in the Available section after they are added. To search for, edit, and delete phone applications, you must access the Phone Applications page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**Users/Phones > Phone Applications**).

Table 40-4   *Settings on Phone Application Tab*

Setting	Description
Available	This section displays the applications that are available with your system but that are not currently being used by the usage profile. To assign a phone application to this usage profile, move it to the Selected section.
Selected	This section displays the applications that are currently being used by the usage profile.
Add Phone Application Name Description URL	To add a phone application to the Available section, click **Add Phone Application**, and perform the following tasks: 1. Enter the name of the phone application. You can enter up to 32 characters. The name that you enter displays on the phone where phone applications are accessed. 2. Enter a description of the service that the phone application provides. The description can include up to 100 characters, but it cannot include quotation marks (") or grave accent (`). 3. Enter the URL of the server where the phone application is located. Do not enter a URL from the Cisco Unified Communications Manager Business Edition 3000 server. For the applications to be available to the phones, the phones must have network connectivity to the server where the phone application is located. Enter up to 512 alphanumeric characters, spaces, or !#$%&'()*+,./:;<=>?@][^_{|}~\-

C H A P T E R 41

User Settings

GUI: Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

> **Tip**　User settings also display in the Cisco-provided .xls data configuration file.

In the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, you can add, edit, and delete user configuration. Table 41-1 describes the settings that display on the User page (**Users/Phones > Users**), which allows you to add and edit user configuration.

Before you add a user, determine whether the user can act as an administrator of the system. All users can use the phones and access the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface where they can manage some phone features and functionality, such as speed dials and so on. Administrators, though, can administer the entire system, including but not limited to monitoring the system, and adding, updating, and deleting phones, users, and so on. Administrators can access all pages in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface and Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface and perform all duties that are necessary to administer the system. When you configure a user, you specify whether the user is an administrator.

> **Tip**　Before you can add a phone (**Users/Phones > Phones**), you must add an extension to the user.

Table 41-1　Settings on the Users Page

Setting	Description
First Name	Enter the first name of the user. Enter up to 64 characters, except for quotation marks (").
Last Name	Enter the last name of the user. Enter up to 64 characters, except for quotation marks (").
E-mail Address	Enter the email address of the user. In this field, enter a valid email address that includes the domain for the user; for example, *<user>@<domain>*.com. This email address works with the Reset Credentials button, which displays in the Edit User page.

Table 41-1   Settings on the Users Page (continued)

Setting	Description
Usage Profile	Select the usage profile that you want to assign to the user. The usage profile that you select gives rights to the user, such as the ability to use certain calling features if the phone supports the feature.
User ID	Enter the unique identification name for the user. You can enter any character, including alphanumeric and special characters. No character restrictions exist for this field.
	Each user ID must be unique; you cannot create two users that have the same user ID.
	Note Enter a user ID that identifies who the user is, not the function that the user performs. For example, enter an email ID to identify the user. Do not enter a value that specifies a function, such as operator.

Table 41-1   Settings on the Users Page (continued)

Setting	Description
Password Confirm Password Reset Credentials User Must Change Password At Next Login	To create a password for the user, enter a password that contains alphanumeric or special characters in the Password field. In the Confirm Password field, enter the password again.
	When you enter a password, the password displays as encrypted dotted text. After you save the configuration, the password fields display as blank.
	If the user must change the password the next time that the user logs in to the GUI, check **User Must Change Password At Next Login**. (This applies to any interface that the user can access. If the user has not changed the password, the check box remains checked.)
	In the Edit User page, the Reset Credentials button displays. To change the password and Phone PIN at the same time for the user, click **Reset Credentials**. In a dialog box, an autogenerated password and Phone PIN display. You can send an email to the user if a valid email address displays in the Email Address field. If you want the user to change the password on next login, check the check box and click **OK**. (Before you reset the credentials, you are asked to save any changes that you made to the page.)
	A non-trivial password meets the following criteria: • Does contain three of the four allowable characteristics: uppercase character, lowercase character, number, symbol. • Does not use a character or number more than three times consecutively. • Does not repeat or include the alias, username, or extension. • Does not consist of 3 consecutive characters or numbers (for example, passwords such as 321 or ABC).

Table 41-1   Settings on the Users Page (continued)

Setting	Description
Phone PIN Confirm Phone PIN	If the user is allowed to use Cisco Extension Mobility, as indicated in the assigned usage profile, the user enters this Phone PIN upon logging in to a Cisco Extension Mobility-enabled phone. To create a PIN for the user, enter a PIN that includes numerals only in the Phone PIN field. In the Confirm Phone PIN field, enter the PIN again. **Tip** The user can change this PIN in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface. Enter up to 64 characters, except for quotation marks ("). A non-trivial PIN meets the following criteria: • Does not use the same number more than two times consecutively. • Does not repeat or include the user extension or mailbox or the reverse of the user extension or mailbox. • Does contain three different numbers; for example, a PIN such as 121212 is trivial. • Does not match the numeric representation (that is, dial by name) for the first or last name of the user. • Does not contain groups of repeated digits, such as 408408, or patterns that are dialed in a straight line on a keypad, such as 2580, 159, or 753.
Enable Administrator Access	If you want this user to be able to log in to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, check the **Enable Administrator Access** check box. If you check this check box, the user can access any page in the interfaces and perform all tasks in the interfaces. No restrictions apply.

Table 41-1   Settings on the Users Page (continued)

Setting	Description
Line Number External Caller ID Call Forward All	For extensions (lines) that you want to associate with this user, perform the following tasks:
	1. In the Line Number field, enter a unique extension for the user. Enter an extension that is within the extension range that is specified in the Dial Plan page (**System Settings > Dial Plan**). (Line numbers must be unique to this user.)
	Note You can configure a maximum of 10 line numbers for each user.
	2. In the External Caller ID field, enter a phone number that identifies the user when the user makes an outgoing call that goes through the PSTN. By default, the main business number from the dial plan displays.
	3. To forward all incoming calls for the user to another phone number or to voicemail, check the **Call Forward All** check box; then select **To VoiceMail**, if available, or enter the phone number, including access codes, area codes, and so on, in the Call Forward All field. (Enter a phone number as if you were placing a call on the phone. Do not enter hyphens.) If the user updates the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface for call forwarding, the update displays in this field. (The voicemail option only displays if the usage profile that is assigned to the user has voicemail enabled.)
	The first row specifies the primary line for the phone. To make a secondary line the primary line, click the arrow icon. The secondary line moves to the top of the list and becomes the new primary line, and the former primary line becomes the secondary line and displays immediately after the new primary line.
	The phone button template that is assigned in the usage profile determines the order of buttons on the phone. If the phone model does not support all of the buttons that are specified in the phone button template, only the number of buttons that the phone supports display on the phone.
	The primary line displays on a Cisco Extension Mobility-enabled phone when a user is logged into that phone. The primary line is also used with call forward all and Reach Me Anywhere.

Table 41-1   Settings on the Users Page (continued)

Setting	Description
	To add more rows, click the **Plus** icon. To delete a row, click the **Minus** icon for the row that you want to delete.
Show User's Phones	To identify a list of phones that are associated with the assigned lines for the user, click **Show User's Phones**. After you view the list, click **OK**. (The user owns a phone when line 1 is assigned to the phone.) **Tip** The Show User's Phones link displays only in the Edit User page. You can reorder the entries after the entries display.
Phone Label Phone Number	For speed dials, perform the following tasks: **1.** Enter the phone label and associated phone number in the rows. In the Phone Label field, enter any characters. In the Phone Number field, enter a phone number that includes an access code, area code, and so on. (Enter a phone number as if you are placing a call on the phone.) **2.** To reorder the speed dials, click the arrows. **3.** Save your changes. **Tip** To clear the data that you entered for a speed dial, click **x**; then, save your changes. **Tip** The phone button template that is assigned in the usage profile determines the order of buttons on the phone. If the phone model does not support all of the buttons that are specified in the phone button template, only the number of buttons that the phone supports display on the phone. **Tip** The speed dials that the user enters in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface displays in this section. In addition, the speed dials that you enter display in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface.

When a user who does not have administrator access tries to log in, the system displays an error message. In such a case, the user can perform the following actions:

- If the user is using Internet Explorer 8 or later, the user must close the browser, reopen it, and then log in.

- If the user is using Mozilla Firefox, the user can either clear the browser cache and log in or close the browser, reopen it, and then log in.

C H A P T E R 42

User Preferences Settings

GUI: Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface

Tip The following information displays when the user clicks **Help** in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface.

You can use your computer to sign in to the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface where you can set Reach Me Anywhere, call forwarding, speed dials, your phone PIN for Cisco Extension Mobility, and your password for the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface. In addition, you can use Cisco Web Dialer to place a call to an extension in the corporate directory.

To sign in to your Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface for the first time, obtain your URL, user ID, and default password from the locale representative that assists you with managing your phone. Open a web browser on your computer and enter the URL. When the sign-in page displays, sign in by entering your user ID and default password.

Tip If the system administrator for your phone has not set up the feature for you, you may not see the settings that are described in Table 42-1. If you encounter any problems, contact the local representative that assists you with managing your phone.

If an upgrade of the system is in progress, you cannot update your user preferences.

Table 42-1 describes the tasks that you can perform in the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface.

Table 42-1   Tasks on the User Preferences Page

If you want to....	Then do this after you sign in...
Set Reach Me Anywhere Reach Me Anywhere associates other phones, such as a mobile phone, with line 1 from your desk phone. Reach Me Anywhere only works for calls that occur on line 1. When you receive a call on line 1 of your desk phone, all phones ring. When you answer the call on one of the phones, the other phones stop ringing, are disconnected, and display a missed call message.	1. Check the **Reach Me Anywhere** check box. 2. Perform one of the following tasks: • Enter a phone number that includes an access code, area code, and so on. (For example, enter the phone number as if you were placing a call from your desk phone.) • Select a phone number from the drop-down list box, if a phone number displays. (These phone numbers are the last 5 numbers that you entered for this setting.) A maximum of five phone numbers can display in the list. The newest number that you entered displays at the top of the list; the oldest phone number displays at the bottom. You can edit a phone number in the list by pressing backspace on your keyboard. If you edit a phone number, the original number continues to display in the list. 3. Click **Save**. The phone number that displays in the field rings when line 1 on your desk phone receives a call. **Tip** To remove all phone numbers from the list, click **Clear History**. Then, click **OK** in the dialog box that displays. **Tip** To turn off Reach Me Anywhere, uncheck the **Reach Me Anywhere** check box.
Set Forward Calls to Use call forwarding to redirect all incoming calls that arrive on line 1 on your phone to a different phone number on another phone.	1. Check the **Forward Calls to** check box. 2. Perform one of the following tasks: • Enter a phone number that includes an access code, area code, and so on. (For example, enter the phone number as if you were placing a call from your desk phone.) • Select a phone number from the drop-down list box, if a phone number displays. • Select **to Voicemail** to forward all calls to voicemail. 3. Click **Save**. When your phone receives a call, the call gets redirected to the phone number that displays in the field. **Tip** To remove all phone numbers from the list, click **Clear History**. Then, click **OK** in the dialog box that displays. **Tip** To turn off call forwarding, uncheck the **Forward Calls to** check box.

Table 42-1   Tasks on the User Preferences Page (continued)

If you want to....	Then do this after you sign in...

Use Cisco Web Dialer to place a call to someone in the corporate directory
 	
Cisco Web Dialer allows you to place calls from the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface. For example, Cisco Web Dialer uses hyperlinked telephone numbers in a corporate directory to allow you to make calls from Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface by clicking on the telephone number (extension) of the person that you are trying to call.
	1. Click **Search directory and place call**.
	
	2. After the Cisco Web Dialer search page displays, select your search criteria from the Filter drop-down list box. Then, enter the appropriate search text, if applicable.
	
	3. Click **Go**. A list of discovered names displays. To place a call, the Call Extension link must display for the person that you want to call.
	
	4. Highlight a phone number from the drop-down list box, if a phone number displays.
	
	5. Click **Call Extension** to dial the extension.
	
	   The Cisco Web Dialer - Make Call window displays.
	
	6. If the extension that is displayed in the Phone Number field is correct, click **Dial**. Otherwise, edit the number before clicking **Dial**.
	
	7. If you can use Cisco Extension Mobility, you can select **Use Extension Mobility** from the Calling Device drop-down list box.
	
	8. Check one of the following check boxes:
	
	  • **Do not display call confirmation** - If selected, the Cisco Web Dialer - Make Call window will not display the next time that Cisco Web Dialer is used. Calls will automatically be dialed after clicking on a contact from the Cisco Web Dialer window.
	
	  • **Disable Auto Close** - If selected, the Cisco Web Dialer- Make Call window does not close automatically after fifteen seconds.
	
	9. **Choose the Preferred language** - The specified language gets used for Cisco Web Dialer settings and prompts.
	
	10. Click **Save**.

Table 42-1 **Tasks on the User Preferences Page (continued)**

If you want to....	Then do this after you sign in...
Set your speed dials You can set up to 12 speed-dial lines, although your phones may not support 12 speed-dial lines. The rows where you add speed dials are a prioritized list with the top row being the first speed dial that you want to display on the phone, and so on. The buttons on your phones may be designated for other purposes besides speed dials. If the button on your phone has an extension or text next to it that is not for speed dials, the button has been designated for another purpose. The speed dials that you assign and prioritize apply to all phones that belong to you. Your speed dials may display on Cisco Extension Mobility-enabled phones if you are allowed to use Cisco Extension Mobility.	**1.** Enter the phone label and associated phone number in the rows. In the Phone Label field, enter any characters. In the Phone Number field, enter a phone number that includes an access code, area code, and so on. **2.** To reorder the speed dials, click the arrows. **3.** Click **Save**. **Tip** To clear the data that you entered for a speed dial, click **x**. Then, click **Save**.
Configure your Busy Lamp Feature (BLF) When a speed-dial button is configured to dial an internal number, the speed-dial button light will illuminate when the destination phone is picked up. It remains lit until the other phone goes off hook. As a result, the phone with the speed-dial button can determine if the other party is currently on the phone or not. Using this feature, an attendant can monitor other lines before transferring a call to that line. Certain phone types, such as the Cisco Unified IP Phone 6900 Series, have softkeys on the screen, as opposed to physical buttons on the phone. These on-screen buttons are not compatible with the Busy Lamp Feature (BLF) and therefore do not show the presence of the other party.	**Note** When placing a call, or transferring a call, using speed dials, be aware of the following: if the destination phone has roll-over lines enabled, on-hook/off-hook illumination will apply only to the first appearance of that line on the phone. For example, if the destination number is 5000, and the line 5000 appears multiple times on the destination phone—so that calls roll over from the first appearance to the next when the first appearance is busy—then only that first appearance is monitored. If the user on the destination phone is on a call using the second appearance of 5000, the speed dial notices that the first appearance is not busy and the light may not illuminate to indicate that line 5000 is busy.
Reset your password for the Cisco Unified Communications Manager Business Edition 3000 User Preferences Interface	**1.** Check the **Change Password** check box. **2.** Enter a password that does not contain spaces or underscores. **3.** Re-enter your password and click **Save**.

Table 42-1   Tasks on the User Preferences Page (continued)

If you want to....	Then do this after you sign in...
Reset your phone PIN You enter your phone PIN when you log in to a Cisco Extension Mobility-enabled phone. When you log into a Cisco Extension Mobility-enabled phone, your extension for line 1 displays, and your speed dials may display on the phone. The Phone PIN settings always display, even if your system administrator has not set up Cisco Extension Mobility for you. Before you attempt to use Cisco Extension Mobility, verify with the local representative that manages your phone system that you are allowed to use Cisco Extension Mobility.	1. Check the **Change Phone PIN** check box. 2. Enter a PIN that includes the digits 0 through 9. 3. Reenter your PIN and click **Save**.
Save	After you make your changes, click **Save**.
Reset	To discard your changes and display the saved data, click **Reset**.

C H A P T E R 43

Voice Feature Settings

GUI: Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

The Voice Features Settings page allows you to configure a variety of phone-impacting settings that automatically get applied to all phones in your system. If you do not update this page, the system uses the default settings. Some settings on this page work in conjunction with settings that are configured on the Phone or Usage Profile pages. Table 43-1 describes the settings that display on the Voice Feature Settings page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**System Settings > Voice Feature Settings**).

Table 43-1   Settings on the Voice Features Settings Page

Setting	Description
Line Display Format	
Internal Caller ID	From the drop-down list box, select how you want a caller to be identified for internal calls that display on the phone. Internal calls, which originate and terminate without going through a gateway to the PSTN, are placed and received by users that are part of the Cisco Unified Communications Manager Business Edition 3000 system.
	• None—This option displays the extension of the caller.
	• First Name, Last Name—This option displays the first and last name of the caller (in that order).
	• Last Name, First Name—This option displays the last and first name of the caller (in that order).
	Tip The External Caller ID, which is the phone number that displays for a caller when the user places an outgoing call over the PSTN, is added per extension on the User page (**Users/Phones > Users**).

Table 43-1   Settings on the Voice Features Settings Page (continued)

Setting	Description
Line Text Display	From this drop-down list box, select the type of information that you want to display next to the buttons for assigned lines on the phones: • None—This option displays the extension of the caller. • First Name, Last Name—This option displays the first and last name of the caller (in that order). • Last Name, First Name—This option displays the last and first name of the caller (in that order).
Call Forward No Answer Timeout	
No Answer Timeout (sec)	This setting specifies the number of seconds to wait before forwarding an unanswered call to the phone number that is configured for the Call Forward No Answer setting, which exists in the usage profile (**Users/Phones > Usage Profile**). Default—12 seconds Enter a value from 12 to 300.
Do Not Disturb	
Option	This parameter allows you to specify how incoming calls get handled with Do Not Disturb: • Call Reject—If you select this option, no incoming call information gets presented to the user. Depending on how you configure the Incoming Call Alert setting, the phone may play a beep or display a flash notification of the call. • Ringer Off—This option turns off the ringer, but incoming call information gets presented to the phone, so the user can accept the call. **Tip** This setting only applies for phones where you turned on Do Not Disturb. You turn on Do Not Disturb in the phone configuration (**Users/Phones > Phones**) or on the phone itself. Default—Ringer Off

Table 43-1   Settings on the Voice Features Settings Page (continued)

Setting	Description
Incoming Call Alert	This setting specifies how an incoming call displays on a phone when Do Not Disturb is turned on. This setting works with the Option setting. From the drop-down list, choose one of the following options: • Disable—This option disables both beep and flash notification for a call, but for the Ringer Off option, incoming call information still gets displayed. For the Call Reject option, no call alerts display, and no information gets sent to the device. • Beep Only—For an incoming call, this option causes the phone to beep. • Flash Only—For an incoming call, this option causes the phone to display a flash alert. **Tip** This setting only applies for phones where you turned on Do Not Disturb. You turn on Do Not Disturb in the phone configuration (**Users/Phones > Phones**) or on the phone itself. Default—Beep Only

P A R T 5

Troubleshooting in Cisco Unified Communications Manager Business Edition 3000

C H A P T E R 45

Troubleshooting Overview

This chapter, which provides a basic overview of troubleshooting in Cisco Unified Communications Manager Business Edition 3000, provides information on the following topics:

Troubleshooting Tools

Cisco Unified Communications Manager Business Edition 3000 provides you with the following functionality to assist you with troubleshooting your system:

- The Health Summary page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**Monitoring > Health Summary**)—This page allows you to quickly determine the health of major subsystems in your system. The page indicates whether you have a problem, and the online help for the Health Summary page provides you with possible causes and tasks that you can perform to resolve the issue. You should access this page first when you begin troubleshooting.

- The Diagnostics page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**Monitoring > Diagnostics**)—From this page, you can enable detail logging during recurring events and you can collect logs, which you can send to your technical support (either the Value Added Reseller or Cisco Technical Assistance Center (TAC)). You access this page when the Value Added Reseller, Cisco TAC, or Health Summary page indicate that you need to perform tasks on this page.

- The Cisco Diagnostics Tool—The Cisco Diagnostic Tool allows you to diagnose your system if you cannot access the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface

- If you file a case with Cisco TAC, you may need additional troubleshooting tools, as described in the "Opening a Case with Cisco Technical Assistance Center" section on page 50-91.

General Model of Problem Solving

When troubleshooting a telephony or IP network environment, define the specific symptoms, identify all potential problems that could be causing the symptoms, and then systematically eliminate each potential problem (from most likely to least likely) until the symptoms disappear.

The following steps provide guidelines to use in the problem-solving process.

Procedure

Step 1 Analyze the network problem and create a clear problem statement. Define symptoms and potential causes. In most cases, the Health Summary page, along with the online help for that page, assists you with defining the problem and potential causes of the problem.

Step 2 Gather the facts that you need to help isolate possible causes. In most cases, the Health Summary page, along with the online help for that page, assists you with defining the potential causes of the problem.

Step 3 Consider possible causes based on the facts that you gathered. In most cases, the Health Summary page, along with the online help for that page, assists you with defining the potential causes of the problem.

Step 4 Create an action plan based on those causes. Begin with the most likely problem and devise a plan in which you manipulate only one variable. In most cases, the Health Summary page, along with the online help for that page, assists you with the action plan.

Step 5 Implement the action plan; perform each step carefully while testing to see whether the symptom disappears.

Step 6 Analyze the results to determine whether the problem has been resolved. If the problem was resolved, consider the process complete.

Step 7 If the problem has not been resolved, create an action plan based on the next most probable cause on your list. Return to Step 4 and repeat the process until the problem is solved.

Make sure that you undo anything that you changed while implementing your action plan. Remember that you want to change only one variable at a time.

> **Note** If you exhaust all the common causes and actions (either those outlined in this document or others that you have identified in your environment), contact your technical support team; in this case, either the Value Added Reseller (VAR), of if you are the Value Added Reseller, contact Cisco Technical Assistance Center (TAC).

Troubleshooting Tips

The following tips may help you when you are troubleshooting Cisco Unified Communications Manager Business Edition 3000.

- Check the release notes for Cisco Unified Communications Manager Business Edition 3000 for known problems.

- Identify the approximate time of the problem.

  Multiple calls may have occurred, so knowing the approximate time of the call helps TAC quickly locate the issue.

- Obtain phone statistics from phones that can display phone statistics.

- When you are running a test to reproduce the issue and produce information, know the following data that is crucial to understanding the issue:

  - Calling number/called number

  - Any other number that is involved in the specific scenario

  - Time of the call

- You can always recover more easily from a network failure if you are prepared ahead of time. To determine if you are prepared for a network failure, answer the following questions:

  - Do you have an accurate physical and logical map of your Internetwork that outlines the physical location of all of the devices on the network and how they are connected as well as a logical map of network addresses, network numbers, and subnetworks?

  - Do you know which protocols are being routed and the correct, up-to-date configuration information for each protocol?

  - Do you know all the points of contact to external networks, including any connections to the Internet?

  - Has your organization documented normal network behavior and performance, so you can compare current problems with a baseline?

  If you can answer yes to these questions, faster recovery from a failure results.

- If you must collect a log file, save the log file to a USB key or desktop to prevent the system from overwriting it.

- If you plan to file a case with Cisco TAC, see the "Information You Will Need" section on page 50-92 and the "Required Preliminary Information" section on page 50-92.

Related Topics

How to Diagnose a Problem

This chapter contains the following procedures that you can perform to help troubleshoot issues:

Troubleshooting from the Health Summary Page

Accessing the Health Summary page is the first step that you perform when you troubleshoot.

The Health Summary page provides status about your system and assistance with troubleshooting issues. The Health Summary page displays subsystems (Table 46-1) and status messages for each subsystem. If no problem occurs in the subsystem, a green check mark and the message, *This subsystem is operating normally*, displays for the subsystem. If an issue occurs in the subsystem, a red X displays next to the category, and a status message indicates that an issue occurred.

The status of the system gets checked every 30 seconds. When a check occurs, the status that currently displays is compared to the status that is returned from the server. If the status does not match, the status message and icon get updated on the page. (For example, if an issue occurred and the system check indicates that the issue resolved itself, the status for the subsystem changes from a red cross to a green check mark.)

Perform the following procedure to troubleshoot through the Health Summary page.

Procedure

Step 1 Log in to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Step 2 To access the Health Summary page, select **Monitoring > Health Summary**. Under each subsystem, the status displays. If an X displays next to a category, an issue has occurred.

Table 46-1 describes the subsystems that display on the Health Summary page (**Monitoring > Health Summary**).

Table 46-1   Subsystems on the Health Summary Page

Subsystems	Description
System Health	This category provides status for your server and the services that are running on your server. It also provides status of system parameters such as CPU Voltage, Temperature, and fan speed, if these parameters exceed the threshold values.
Telephony Network Gateways	This category displays status of your internal and external gateways; for example, this category identifies whether the gateway is unregistered from the system.
Telephony Network Connection	This category displays status on the health of your telephony network connection; for example, whether your telephony network connection is operational, whether your gateway is connecting properly to the telephony network, and so on.
Internet Connection	This category displays status information for your Internet network; for example, this category identifies issues with IP addresses, DNS, and host configuration.
Internal Network	This category displays the status of registered devices such as phones, gateways and trunks. If the number of registered devices is less than 66.67%, the status of registered devices is displayed as down.

Tip   Multiple issues may display on this page at the same time.

Step 3   To review information on how to troubleshoot the issue, click the **here** link that displays in the status message. Follow the steps in the online help to resolve the issue.

Step 4   If the online help indicates that you need to collect logs or enable detailed logging during the event, you must perform additional tasks to troubleshoot the issue. See the "Troubleshooting From the Diagnostics Page" section on page 46-41.

Additional Information

- Troubleshooting From the Diagnostics Page, page 46-41
- Troubleshooting Issues, page 47-51

Troubleshooting From the Diagnostics Page

The Diagnostics page allows you to run diagnostics for your system, gather diagnostic information for your system, and download the diagnostic information. If your Value Added Reseller (VAR), Cisco Technical Assistance Center (TAC), or the online help for the Health Summary page indicate that you need to use the Diagnostic page to continue to a diagnose an issue, perform the following procedure.

Tip   The system zips up the logs by using WinZip. The system only allows you to keep one zip file at a time on your Cisco Unified Communications Manager Business Edition 3000 server. When you generate a log file, you automatically overwrite the last zip file on the server. Make sure that you download the log file to a location on your PC that can handle the size of the zip file.

Procedure

Step 1   If you have not already done so, select **Monitoring > Diagnostics** in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Step 2   Determine your next steps:

- You can generate a log file immediately without enabling detailed logging. (See Step 3.) The online help for the Health Summary page indicates when you can immediately generate a log file.

- You can enable detailed logging and attempt to reproduce the event. (See Step 4.) Enable detailed logging under the following circumstances:

    - The online help for the Health Summary page indicates that you need to attempt to reproduce the issue.

    - Your technical support team indicates that you need to enable detailed logging before you attempt to reproduce the issue; for example, the Value Added Reseller (VAR) or Cisco Technical Assistance Center (TAC) recommends that you enable detailed logging.

Caution   Turning on detailed logging, which increases the trace level that is running on the Cisco Unified Communications Manager Business Edition 3000 server, impacts system performance. Only turn on detailed logging when it is recommended that you do so.

Step 3   To generate a log file immediately without enabling detailed logging, click **Generate Log File**. The generation of the log file may take awhile, so wait while the generation occurs. After the log file is generated, download the log file to your PC.

Step 4   If you need to enable detailed logging, perform the following tasks:

a.   Click **Enable Logging**.

b.   Attempt to reproduce the issue.

c.   After you reproduce the issue or if you cannot reproduce the issue for some reason, click **Disable Logging**.

d.   Generate the log file by clicking **Generate Log File**.

e.   After the log file is generated, download the file to your PC.

Step 5   Send the zip file to your technical support team; for example, either the Value Added Reseller (VAR), or if you are the reseller, send it to the Cisco Technical Assistance Center (TAC).

Step 6   Work with the technical support team to analyze the log file.

Troubleshooting Using MCS 7890-C1 LEDs

The LEDs on the front of the MCS 7890-C1, as shown in , are color coded to indicate the status of the MCS 7890-C1.

Figure 46-1   *MCS 7890-C1 LEDs*
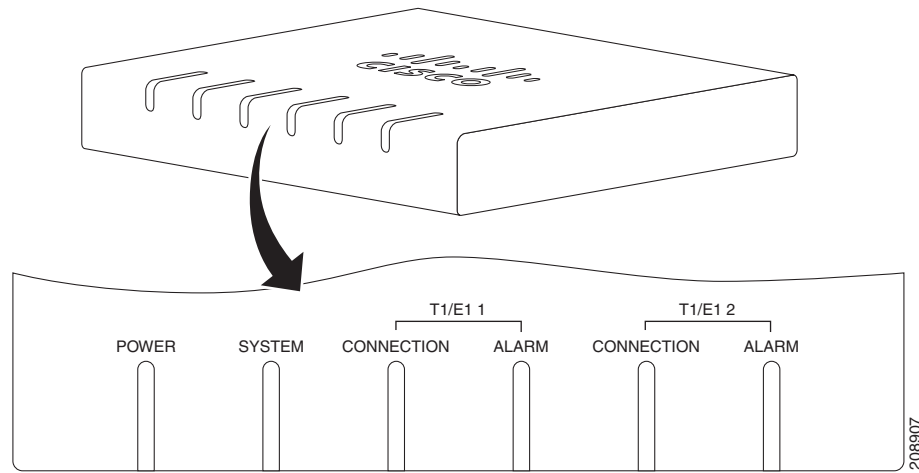
Table 46-2 describes the MCS 7890-C1 LEDs and explains their meanings.

Note   The Power LED is also the front power button.

Table 46-2   *MCS 7890-C1 LEDs*

Name	Color	Meaning	When you see this LED, do this:
Power	Green	Power is on.	--

Table 46-2   MCS 7890-C1 LEDs (continued)

Name		Color	Meaning	When you see this LED, do this:
System **Note** This LED color matches the status information in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface Health Summary window.		Green	MCS 7890-C1 is operating normally.	--
		Orange	Cisco Unified Communications Manager Business Edition 3000 Administrative Interface Health Summary window displays a warning.	Log in to CUCM Business Edition 3000 admin page to determine if there are any red "X" marks. If yes, check the online troubleshooting. If problem persists, reboot. If that does not resolve the issue, contact your Cisco-certified partner.
		Red blinking	Cisco Unified Communications Manager Business Edition 3000 Administrative Interface Health Summary window displays an error.	Same as above. If problem persists, reboot. If that does not resolve the issue, contact your Cisco-certified partner.
T1 / E1 1	Connection	None (LED is off.)	MCS 7890-C1 detects no carrier signal.	Ensure that the PSTN connection is correct.
		Green on	MCS 7890-C1 detects carrier signal.	--
		Yellow blinking	This port is in loopback mode.	This is not an error condition, but rather an indication that the port has been put in loopback mode for maintenance.
	Alarm	None (LED is off.)	MCS 7890-C1 detects no alarms.	--
		Yellow	The device that is sending the signal has an error.	This is due to a framing error which reports an error in the far end. Check the connection between the far end and the MCS 7890-C1.
		Red	MCS 7890-C1 detects an alarm.	The result of an MCS 7890-C1 framing error. Check the connection between the MCS 7890-C1 and the far end.

Table 46-2   MCS 7890-C1 LEDs (continued)

Name		Color	Meaning	When you see this LED, do this:
T1 / E1 2	Connection	None (LED is off.)	MCS 7890-C1 detects no carrier signal.	Same as T1/E1 1
		Green on	MCS 7890-C1 detects carrier signal.	--
		Yellow blinking	This port is in loopback mode.	Same as T1/E1 1
	Alarm	None (LED is off.)	MCS 7890-C1 detects no alarms.	Same as T1/E1 1
		Yellow	The device that is sending the signal has an error.	--
		Red	MCS 7890-C1 detects an alarm.	Same as T1/E1 1

Troubleshooting When You Cannot Access the Graphical User Interfaces

If you cannot access the GUIs, you may need to perform the following procedures, especially if your technical support team advises that you do so:

Troubleshooting by Using Cisco Diagnostics USB

Cisco Diagnostics USB key allows you, the Value Added Reseller (VAR), to perform the servers diagnostics and collect the required log files when the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface is not accessible and before you reboot or reimage the Cisco Unified Communications Manager Business Edition 3000 server.

Cisco Diagnostics USB key contains the Cisco Diagnostics USB Signature file named **diagnose.xml** file, which can be downloaded from www.cisco.com or generated from the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. The diagnostics starts automatically after you insert the Cisco Diagnostics USB key in Cisco Unified Communications Manager Business Edition 3000, and collects the required log files, generates a static HTML report and saves the logs and the html report to the USB key.

The Cisco Diagnostics USB Signature file consists of components for which system diagnostic is executed and associated log files are collected.

The following steps explain the USB Diagnostics process:

Procedure

Step 1   To generate the Cisco Diagnostics USB Signature file, click **Save File** in the Diagnostics page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. (Select **Monitoring > Diagnostics**.)

Tip   You can also obtain the Cisco Diagnostics USB Signature file, **diagnose.xml**, from www.cisco.com.

Step 2   Save the Cisco Diagnostics USB Signature file on the Cisco Diagnostics USB key.

Step 3   Insert the Cisco Diagnostics USB key on the Cisco Unified Communications Manager Business Edition 3000 server.

The system diagnostics is automatically triggered and the following components are diagnosed. Table 46-3 describes the contents on the diagnose.xml file.

Table 46-3   Scanning of System Health through Cisco Diagnostics USB Key

HardDisk	Configure the value to either **Yes** or **No**. The following system attribute is diagnosed: • Diskspace—Checks disk space and verifies critical operating system files
Network	Configure the value to either **Yes** or **No**. The following system attributes are diagnosed: • Validate Network—Validate network settings • NTP Reachability—Checks the availability of external NTP servers • NTP Clock Drift—Checks the local clocks drift from NTP servers • NTP Stratum—Checks the stratum level of the reference clock
System	Configure the value to either **Yes** or **No**. The following system attributes are diagnosed: • Service Manager—Checks if service manager is running • System Info—Collects system information into diagnostic log
WebServer	Configure the value to either **Yes** or **No**. The following system attributes are diagnosed: • Tomcat—Checks for the Tomcat process • Tomcat Deadlocks—Checks Tomcat for deadlocked threads • Tomcat Keystore—Checks Tomcat for keystore issues • Tomcat Connectors—Checks Tomcat for connector issues • Tomcat Threads—Checks Tomcat for thread issues • Tomcat Memory—Checks Tomcat for memory issues • Tomcat Sessions—Checks Tomcat for session issues
FileSystem	Configure the value to either **Yes** or **No**. The following system attributes are diagnosed: • disk_files—Checks for usually large files in root • sdl_fragmentation—Checks the fragmentation of files in SDL directory • sdi_fragmentation—Checks the fragmentation of files in SDI directory **Note** The FileSystem attributes explained above are CPU intensive diagnostics and consume substantial time for completion.
CollectLogs	Configure the value to either **none** or **min** or **max**. • none—No logs are collected. • min—Minimum number of system logs are collected. • max—Maximum number of system logs are collected.

Step 4   When the system diagnostics is completed, the following files are generated and stored on the Cisco Diagnostic USB key.

Table 46-4 describes the files that are generated after diagnostic completion.

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Table 46-4   Generated Files After Diagnostic Completion

Cisco_Diagnostics_Report.html	A static HTML file that displays • System Configuration • Diagnostics Log and • Old Reports
usbdiag.log.txt	Log file generated after a USB Diagnostics
css	Cascading Style Sheet folder
archive	Collects information of the previous three diagnostic reports. It also includes a compressed image file (.tar.gz) which must be uploaded to www.cisco.com.

To troubleshoot a problem, analyze the HTML report and log files and then perform corrective action to resolve the error.

Note   If the Cisco Diagnostic USB key is short of free space but has enough space to only save the static HTML report, then an error report is generated and saved in the Cisco Diagnostic USB key. This error report lists the total available free space, required space to save the logs and amount of space that must be freed manually.

If you need assistance with evaluating the diagnostic report, send the diagnostic report and logs to the Cisco TAC for further analysis.

The log files for analysis are located in the archive folder in a compressed format with **.tar.gz** extension. The archive folder contains a separate folder for each host for which the USB Diagnostics is executed. You can identify the compressed file for each host from its time and date stamp. Select the required file and upload it on www.cisco.com.

If the issue persists after rebooting, you can reimage the server as described in the "Reimaging or Replacing the Cisco Unified Communications Manager Business Edition 3000 Server" section on page 48-77. Only reimage the server when your technical support team advises that you do so.

Troubleshooting with the Network USB Key When You Cannot Access the Administrative Interface

If you cannot access the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface because your network configuration is not correct, you can use an updated configure.xml file on a USB key to set up temporary access to the network. By performing the following procedure, you can access the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface and then verify and update the network configuration. The following procedure allows you to

• Access and update the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface when the server is moved to a new network with a different subnet.

• Access and update the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface when your network configuration is not correct.

Timesaver   Cisco recommends that you perform Step 1 through Step 4 before an issue occurs. If you perform these steps before an issue occurs, you can start with Step 5 if a network configuration issue is identified. If you do not perform Step 1 through Step 4 before an issue occurs, you must perform all of the steps if an issue occurs.

Perform the following procedure to use the Cisco Network Configuration USB key to obtain access to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface:

Procedure

Step 1   Perform one of the following tasks:

- Download **configure.xml** from www.cisco.com and save it to your laptop.

- If you can access the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, click **Save File** on the **Connections > Network** page to download the USB Network Diagnostics file (filename: configure.xml).

Step 2   Open the configure.xml file on your laptop and update its contents. Table 46-5 describes the contents of the configure.xml file.

Table 46-5   *Contents of configure.xml*

Parameter	Description
Configure Network	By default, the value is no.
	To create a temporary network interface, which assumes that you want to update the IP address, subnet mask, and the default gateway, change this value to **yes**. This temporary network interface exists along with the current configuration in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. The temporary network interface gets removed from the system after you restart the server.
IPAddress	Enter the appropriate IP Address based on the customer LAN.
	This is a mandatory requirement to change the network configuration.
SubnetMask	Enter the appropriate subnet mask of the customer LAN.
	This is a mandatory requirement to change the network configuration.
Gateway	Enter the default gateway details of the customer LAN. This is optional.

Step 3   Save the updated configure.xml file to the root directory of a USB key that is used exclusively for this purpose (setting up temporary access to the network).

Step 4   Remove the USB Key from the laptop. Label the USB key, and put it in a location that you will remember. For example, call it Cisco Network Configuration.

Step 5   Run diagnostics, as described in the "Troubleshooting by Using Cisco Diagnostics USB" section on page 46-44. In the diagnostics report, verify that the network information is incorrect.

Step 6 If the network information is incorrect, insert the Cisco Network Configuration USB Key in the Cisco Unified Communications Manager Business Edition 3000 server.

> **Note** Before you insert the USB key, make sure that the server is running.

Step 7 Log in to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface by using the IP address that is in the configure.xml file.

Step 8 After you log in, verify that the network configuration is correct in the Network page (**System Settings > Network**). If necessary, update the configuration.

Step 9 Restart the server (**Maintenance > Restart/Shutdown**).

For More Information

Troubleshooting Using the System LED

You, as a VAR administrator, can also monitor the health of the Cisco Unified Communications Manager Business Edition 3000 system through the status of the System LED mounted on the MCS 7890 server. This LED gives you primary information about the system health without having to access the web interface. However, you need to log in to the web interface to diagnose the problem in detail.

The System LED status will reflect the health of the following subsystems:

- System Health
- Telephony Network Gateways
- Internet Connection

The LED displays different colors depending on the health of the system. If there are no issues in the system, the LED displays solid green color. If an issue occurs in either of the subsystems, the color of the LED changes to orange or red depending on the severity of the problem.

Table 46-6 describes the various categories of the system health and the corresponding LED status:

Table 46-6   System Health Categories

System Health	LED Status	Possible Issues
Good	Solid Green	—
In Progress	Blinking Green	—

Table 46-6   *System Health Categories (continued)*

System Health	LED Status	Possible Issues
Warning	Solid Orange	• Insufficient disk space • Low virtual memory • DNS configured but failed to resolve
Error	Blinking Red	• One or more critical services not running • One or more ports of the internal gateway not registered • Hardware failure • System temperature, fan speed, or CPU voltage exceeding the prescribed limits

Note   The status of System LED will be Blinking Green when the system is rebooting.

For information on resolving the issues mentioned above, see "Troubleshooting Issues, page 47-51".

C H A P T E R 47

Troubleshooting Issues

If a problem occurs with your system, the Health Summary page displays a red X next to the real-time status category and a link that you can click that displays information about how to resolve the issue. The following status messages may display when there is a system issue:

- A critical internal software component is down and the system must be restarted
- The conference bridge is experiencing an issue
- The system has reached maximum capacity for multiparty conferencing
- A large number of devices (phones) are unable to register with the system, possibly indicating a problem with the internal network or network services
- The gateway is experiencing an issue
- One or more gateway ports are unable to communicate with the telephone network
- The system is unable to communicate with the telephone network through the SIP trunk
- Problems have been detected with the gateways connecting the system to the telephone network
- The system is unable to offload call detail records
- The maximum storage capacity for call detail records has been exceeded
- The DNS service is incorrectly configured or unreachable
- A required service failed
- A problem has been detected with the system hardware
- A firmware update is required for MCS 7890
- An MCS 7890 is experiencing hardware issues
- An MCS 7890 requires a BIOS recovery
- The system is experiencing sustained high CPU usage
- The system is nearing maximum memory capacity
- The system is nearing maximum processing capacity
- The system has reached maximum capacity for calls going through the telephone network
- The system is nearing maximum call capacity
- The system has experienced an internal software error and must be restarted
- A phone failed to register
- PSTN calls are not established due to the value of the Called Party type number
- Product licensing is out of compliance

- The system has overheated and must be powered off and then restarted
- The system fan is not operating properly and the system must be powered off and then restarted
- The system CPU voltage is too high and the system must be powered off and then restarted
- The system has experienced an error with voicemail and auto attendant services and must be restarted
- The system has reached capacity for voicemail and auto attendant calls. Voicemail and auto attendant services are unreachable
- Voicemail and auto attendant capacity is reduced due to an unresponsive connection
- Due to an internal problem, the system is running very low on hard disk space
- A VM/AA service is utilizing a large amount of CPU resources
- How do I Enable or disable T1/E1 and ECAN Statistics Logging?

The following issues do not display in the Health Summary page:

- How do I Enable or disable T1/E1 and ECAN Statistics Logging?
- The phone has one-way audio
- A phone call cannot be established
- Operator Assisted and Transit Network Dialing does not always work
- A gateway is not listed in the Site Gateway Usage list
- When you choose Local Gateways, a remote gateway is listed in the Local Gateway list
- Local gateway is not listed in the Local Gateway list
- Gateways from a deleted site are no longer used
- Problems reported with the SPA8800
- Order of the PSTN Gateways used to route calls changes
- Upgrade of the Cisco Unified Communications Manager Business Edition 3000 software failed
- Text displays in English, not in my chosen locale
- The restore of data failed
- Cannot delete SPA8800 phone/connection
- Unable to make calls to local mobile phone numbers
- Outgoing PSTN calls take a long time to get established
- Upgrade of Connection Pack fails during installation

A critical internal software component is down and the system must be restarted

Description

A critical service, which is needed to support the operation of the system, is not operational.

Resolution

Restart the system to recover the service. If this problem persists, contact your technical support team; for example, contact your Value Added Reseller (VAR), or if you are the Value Added Reseller, contact the Cisco Technical Assistance Center (TAC).

The conference bridge is experiencing an issue

Description

A conference device is no longer registered to the system. The conference service is unavailable until the device re-registers.

Resolution

Perform any of the following actions:

*   Check to see if the conference bridge hardware is powered down (this could be the ISR router, such as the Cisco 2901) and, if so, restore power.

*   Check if a network issue has occurred by using the ICMP ping command to ping the gateway and the Cisco Unified Communications Manager Business Edition 3000 server.

> **Note**   When using the ping command, ensure that the PC is on the same subnet.

*   Verify that the Ethernet connection is secure to the gateway and the Cisco Unified Communications Manager Business Edition 3000 server.

*   Verify that the gateway configuration (the CLI commands generated by Cisco Unified Communications Manager Business Edition 3000) is correct and has not changed.

The system has reached maximum capacity for multiparty conferencing

Description

All available conference bridge resources are being used (for example, too many conferences are active simultaneously).

Resolution

Perform any of the following actions:

*   Wait until conference resources become available.

*   Review the conference usage information on the Call Detail Reports page (**Monitoring > Call Detail Reports**) to better understand the resource needs.

*   Upgrade to a telephony appliance system that provides more conference resources; for example, perform a configuration export and import your data to Cisco Unified Communications Manager Business Edition 5000.

A large number of devices (phones) are unable to register with the system, possibly indicating a problem with the internal network or network services

Description

Cisco Unified Communications Manager Business Edition 3000 detected a large number of unregistered devices.

Resolution

Check for the following items:

- The switch or other network devices (such as the router) is powered down, inoperable, or not properly connected
- Phones are not physically deployed
- Phones are not properly configured
- DNS service is not properly configured
- DHCP service is not properly configured

The gateway is experiencing an issue

External Gateway

Description

An external gateway is no longer registered to the system. This service is unavailable until the device re-registers.

Resolution

Perform any of the following actions:

- Check to see if the gateway is powered down (this could be the ISR router, such as the Cisco 2901) and, if so, restore power.
- Check if a network issue has occurred by using the ICMP ping command to ping the gateway and the Cisco Unified Communications Manager Business Edition 3000 server.

> **Note**   When using the ping command, ensure that the PC is on the same subnet.

- Verify that the Ethernet connection is secure to the gateway and the Cisco Unified Communications Manager Business Edition 3000 server.
- Verify that the gateway configuration (the CLI commands generated by Cisco Unified Communications Manager Business Edition 3000) is correct and has not changed.
- Verify connectivity from your telephony service provider to the gateway (for example, check that layer 1 and 2 are established by observing the LEDs on the gateway).

Internal Gateway

Description

The internal gateway is no longer registered to the system. This service is unavailable until the device re-registers.

Resolution

Reboot the system. If this problem persists, contact your technical support team; for example, contact your Value Added Reseller (VAR), or if you are the Value Added Reseller, contact the Cisco Technical Assistance Center (TAC).

One or more gateway ports are unable to communicate with the telephone network

Description

The gateway is registered but not functioning (layer 3 of the OSI Model/D channel is inoperable).

Resolution

Perform any of the following actions:

- Verify that the gateway configuration (the CLI commands generated by the Cisco Unified Communications Manager Business Edition 3000) is correct and has not changed.
- Check the gateway status (for example, verify that it is powered on and correctly deployed).
- Verify connectivity from your telephony service provider to the gateway (for example, check that layer 1 and 2 are established by observing the LEDs on the gateway).
- Restart the gateway.
- Restart the Cisco Unified Communications Manager Business Edition 3000 server. (Select **Maintenance > Restart/Shutdown**.)

✎

Note   If you cannot resolve the issue by taking the previous actions, generate a log file by navigating to **Monitoring > Diagnostics**; download the log file, and send it to your technical support team; for example, contact your Value Added Reseller (VAR), or if you are the Value Added Reseller, contact the Cisco Technical Assistance Center (TAC).

The system is unable to communicate with the telephone network through the SIP trunk

Description

The system is unable to communicate with the telephone network through the SIP trunk.

Resolution

Perform the following actions:

- Check to see if the session border element is powered down and, if so, restore power.

- Check if a network issue has occurred by using the ping command to ping the session border element and the Cisco Unified Communications Manager Business Edition 3000 server.

✎
Note   When using the ping command, ensure that the PC is on the same subnet.

- Check if the Options Ping is enabled for the SIP trunk connection. In the **PSTN Connections > Edit** (corresponding SIP trunk connection) page, select the checkbox **Enable Options Ping** to enable the Options ping.

✎
Note   The **Options Ping** is enabled by default if the session border element is Cisco Unified Border Element (Cisco ISR8xx Series).

- By default, the service provider port for the SIP trunk connection is in the range 1025 to 65535. When a service provider port is configured on a port beyond the range, the PSTN connection will be established successfully. However, the system will not be able to communicate with the telephone network. An error displays on **Monitoring > Health Summary > Telephony Network Gateways** section on the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Procedure

a. In the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, go to **Connections > PSTN Connections** page.

b. Select the appropriate SIP trunk PSTN connection and click **Edit**.

c. In the Connection Settings area, update the Provider Port with the appropriate port value in the range 1025 to 65535.

✎
Note   Do not configure the provider port to 5061.

d. Click **Save** to save the changes made to the SIP trunk settings.

- Check to see if the session border element is powered down and, if so, restore power.
- Check if a network issue has occurred by using the ping command to ping the session border element and the Cisco Unified Communications Manager Business Edition 3000 server.

✎
Note   When using the ping command, ensure that the PC is on the same subnet.

- Check if the Options Ping is enabled for the SIP trunk connection. In the **PSTN Connections > Edit** (corresponding SIP trunk connection) page, check the check box **Enable Options Ping** to enable the Options ping.

✎
Note   If CUBE on Cisco ISR 8xx Series is used as the session border element, the Options Ping is enabled by default and is not visible on the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface.

Problems have been detected with the gateways connecting the system to the telephone network

Description

Connection has been lost between the Cisco Unified Communication Manager Business Edition 3000 and the SPA8800.

Resolution

Perform the following actions:

a. Verify that all information has been entered correctly (example: MAC address, IP address, and so on) and that all information is consistent.

b. Ensure that there is connectivity between the SPA8800 and Cisco Unified Communication Manager Business Edition 3000—that routers, firewalls, switches, and so forth, are configured and operating correctly.

c. Once the information has been verified, reboot the SPA8800.

The system is unable to offload call detail records

Description

Delivery of the Call Details Report files to the Remote Server failed to offload after three unsuccessful attempts.

Resolution

Perform the following actions:

- Use the Test Connection button to ensure the access information to the server is correct and that the directory is reachable.

- Ensure that the information entered is correct (IP address, name, password, protocol, and path).

- Verify that the protocol server is operating correctly.

- Ensure that the user has appropriate access rights and that the remote location is not full.

The maximum storage capacity for call detail records has been exceeded

Description

The CDR files disk usage exceeded maximum disk allocation. Some undelivered files may have been deleted to bring disk usage down. Call detail records within the last 30 days are being deleted, starting with the oldest records.

Resolution

Perform the following actions:

- Ensure that there is not a hardware disk problem on the local server.

- Determine if too many undelivered CDR files have accumulated.

- Use the Test Connection button to ensure the access information to the server is correct and that the directory is reachable.

- Ensure that the information entered is correct (IP address, name, password, protocol, and path).

- Verify that the protocol server is operating correctly.

- Ensure that the user has appropriate access rights.

The DNS service is incorrectly configured or unreachable

Description

The DNS service for the Cisco Unified Communications Manager Business Edition 3000 server was expecting one DNS name but saw another name.

Resolution

Check the DNS service to verify that the DNS name matches the IP address that you added for the Cisco Unified Communications Manager Business Edition 3000 server or gateway.

A required service failed

Description

A required service that is needed to support the Cisco Unified Communications Manager Business Edition 3000 server failed.

Resolution

Perform any of the following actions:

- Restart the server. (Select **Maintenance > Restart/Shutdown**.)

- If the issue persists, generate a log file by navigating to **Monitoring > Diagnostics**; then, download the log file to your PC and send it to the technical support team; for example, contact your Value Added Reseller (VAR), or if you are the Value Added Reseller, contact the Cisco Technical Assistance Center (TAC).

A problem has been detected with the system hardware

Description

A hardware failure, such as a problem with the fan, hard drive, or memory, occurred.

Resolution

- Restart the server. (Select **Maintenance > Restart/Shutdown**.)

- If the issue persists, contact your technical support team; for example, contact your Value Added Reseller (VAR), or if you are the Value Added Reseller, contact the Cisco Technical Assistance Center (TAC).

A firmware update is required for MCS 7890

In the event a critical firmware update is required for the MCS 7890 platform, this upgrade will be made available to customers in the form of an offline bootable tool called the Cisco Firmware Update CD (FWUCD). Customers can search Cisco.com for the latest FWUCD releases that are applicable to MCS 7890 server.

> **Note**   Customers are advised to monitor Cisco.com for any new FWUCD releases, and apply FWUCD releases as soon as possible to mitigate any critical problems. Additional details concerning contents, critical fix information, and firmware will be made available along with each FWCD release.

The release of FWUCD is independent of MCS 7890 and Cisco Unified Communications Manager releases. It follows an independent release cycle based on new critical firmware fixes, and is made available as and when it is needed. As a result, FWUCD media is not provided at the time of purchase.

> **Warning**   **To prevent firmware corruption, which can result in a catastrophic failure of the MCS 7890, use of a UPS is highly recommended. The time to complete a firmware update is generally less than 30 minutes.**

An MCS 7890 is experiencing hardware issues

For hardware issues, contact your Cisco-certified partner.

An MCS 7890 requires a BIOS recovery

> **Note**   Use the supplied USB key for recovery operations.

If using a different USB key than the one provide with the MCS 7890, the USB key must be set up as non-bootable. Use the following procedures, for both Windows 7 and Linux, to ensure that the USB key is non-bootable:

Windows 7

Procedure

Step 1   From the cmd prompt in Windows 7 enter **DISKPART**.

Step 2   Enter "LIST DISK" to view a table containing a list of available disks.

Step 3   Enter "SELECT DISK=" followed by the disk number for the USB key.

Step 4   Enter "CLEAN ALL" to remove all contents from USB key.

Step 5   Enter "CREATE PARTITION PRIMARY" to create a primary partition on the USB key.

Step 6   Enter "SELECT PARTITION 1" to select that partition.

Step 7   Enter "INACTIVE" to ensure that the partition is marked as inactive.

Step 8   Enter "FORMAT FS=FAT32" to complete the formatting of the USB key.

Step 9   Enter "EXIT" to exit DISKPART.

Step 10   The USB key is now formatted as non-bootable.

Linux

> **Note**   Set up of USB key using Linux requires root privileges.

Procedure

Step 1   Plug the USB key into the server. From the command line, enter dmesg | tail. This displays the detection information and device location for the USB key. On a single disk system it will most likely be sdb, but it may also be sdc, sdd, etc. Confirm the USB key's device location before proceeding.

Step 2   Enter "fdisk" using the device path found in step 1 (for example: "fdisk /dev/sdb"). The command prompt appears. Enter the print command by typing "p" to see details about the device

Step 3   If the partition is marked bootable by the "*" under the boot column, toggle the bootable attribute using the "a" command and enter "1" to select the first partition. Print the data again and you will see it is no longer bootable.

Step 4   Write changes to the disk using the "w" command, which also results in an exit from fdisk. Wait a few seconds for the write to complete, and then remove the USB key.

MCS 7890 should now not wait on a prompt of invalid boot media when the USB key is booted with the USB plugged in.

> **Warning**   **To prevent firmware corruption, which can result in a catastrophic failure of the MCS 7890, use of a UPS is highly recommended. The time to complete a BIOS upgrade is approximately 30 minutes.**

BIOS recovery works in two different modes:

1.   Automatic mode

2.   Manual mode

Automatic Mode

If the BIOS is found to be corrupt during the system boot process, plug in a USB key with a valid rom file and then reboot the server. The rom file name must use the format "recovery.rom" and will be provided by your VAR or Cisco-certified partner.

Manual Mode

Manual mode requires forcing the system into the recovery mode even if the BIOS is not corrupted. To do this requires a jumper (not supplied) across two open pins on the motherboard, as shown in Figure 47-1. The jumper is located just inside the point where the power supply and SATA cables plug into the motherboard.

Note   Use of normal electrostatic discharge precautions is advised.

Figure 47-1   Jumper
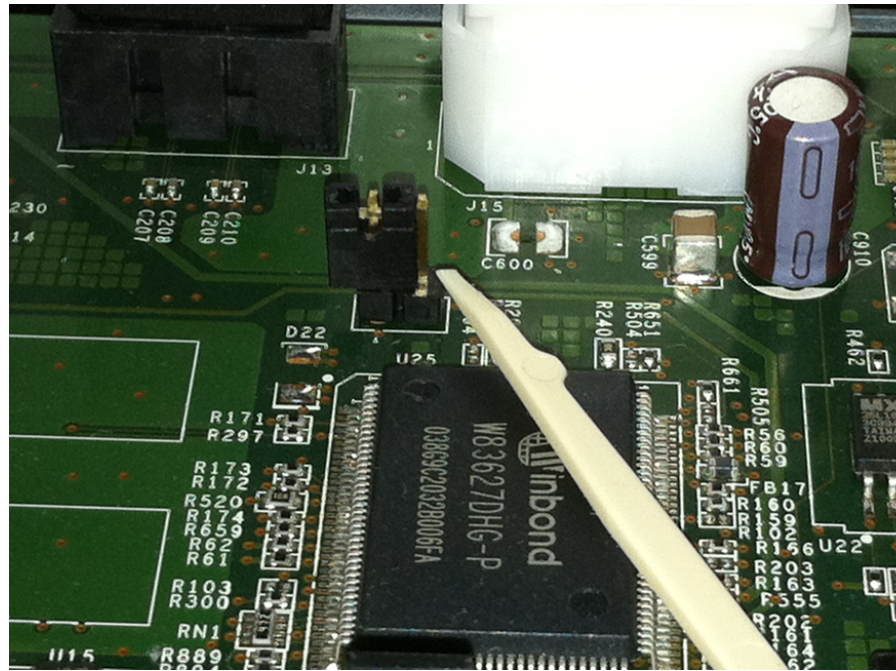
If the jumper is properly placed, the system will sound two short chirps during system power on. If a compatible rom file is found on a USB key, the system will go into recovery mode and prompt the user to continue with BIOS flash.

The system is experiencing sustained high CPU usage

Description

Services are consuming a large percentage of the CPU resources (for example, high call volume is occurring for a sustained period of time).

Resolution

Perform any of the following actions:

- Monitor the system for issues and restart the system if issues occur. (Select **Maintenance > Restart/Shutdown**.)

- If high usage persists, generate a log file by navigating to **Monitoring > Diagnostics**; download the log file, and then send it to technical support team; for example, contact your Value Added Reseller (VAR), or if you are the Value Added Reseller, contact the Cisco Technical Assistance Center (TAC).

Note If no system issues occur but the CPU usage remains high, restart the system during the next available maintenance window.

The system is nearing maximum memory capacity

Description

A large number of memory resources are being consumed.

Resolution

Perform any of the following actions:

- Restart the server. (Select **Maintenance > Restart/Shutdown**.)
- If the issue persists, generate a log file by navigating to **Monitoring > Diagnostics**; then, download the log file to your PC and send it to your technical support team; for example, contact your Value Added Reseller (VAR), or if you are the Value Added Reseller, contact the Cisco Technical Assistance Center (TAC).

The system is nearing maximum processing capacity

Description

A large amount of system resources is being consumed, which may include processes, threads, handles, and so on.

Resolution:

Perform any of the following actions:

- Restart the server. (Select **Maintenance > Restart/Shutdown**.)
- If the issue persists, generate a log file by navigating to **Monitoring > Diagnostics**; then, download the log file to your PC and send it to the technical support team; for example, contact your Value Added Reseller (VAR), or if you are the Value Added Reseller, contact the Cisco Technical Assistance Center (TAC).

The system has reached maximum capacity for calls going through the telephone network

Description

Too many inbound/outbound calls have caused the external call resources to be low.

Resolution

Perform any of the following actions:

- Verify that a loop call is not being generated.
- Investigate system usage for high volume by reviewing the reports on the Call Detail Reports page (**Monitoring > Call Detail Reports**).
- If only one PRI interface is provisioned, purchase and provision another.

Note   An error message displays on the Health Summary page if the system reaches the maximum capacity for the PSTN calls. This error message continues to display on the Health Summary page for the next 60 minutes after the issue is resolved.

The system is nearing maximum call capacity

Description

The amount of resources that are being utilized is nearing capacity, which could cause system issues.

Resolution

Perform any of the following actions:

- Review the reports for high call volume on the Call Detail Reports page (**Monitoring > Call Detail Reports**).
- If call volume is not high, monitor the system to verify that dial tone is not impaired. (Dial tone is impaired if it is noticeably delayed after picking up a handset.) If dial tone is impaired, restart the server.
- If the issue occurs again, perform the following tasks:
  - Enable tracing on the Diagnostics page (**Monitoring > Diagnostics**).
  - Attempt to reproduce the issue.
  - Generate a log file on the Diagnostics page, and download the log file to your PC.
  - Send the log file to the technical support team; for example, contact your Value Added Reseller (VAR), or if you are the Value Added Reseller, contact the Cisco Technical Assistance Center (TAC).

The system has experienced an internal software error and must be restarted

Description

A critical internal issue occurred.

Resolution

Perform any of the following actions:

- Restart the server. (Select **Maintenance > Restart/Shutdown**.)

- If the issue occurs again in a week, perform the following tasks:

    – Enable tracing on the Diagnostics page (Select **Monitoring > Diagnostics**).

    – Attempt to reproduce the issue.

    – Generate a log file on the Diagnostics page, and download the log file to your PC.

    – Send the log file to the technical support team; for example, contact your Value Added Reseller (VAR), or if you are the Value Added Reseller, contact the Cisco Technical Assistance Center (TAC).

A phone failed to register

Description

A phone may fail to register for different reasons, such as a phone name on the Phones page (**Users/Phones > Phones**) contains a typographical error or a phone may exist but be unknown on the network.

Resolution

Perform any of the following actions:

- Check the name of the unregistered phone for possible typographical errors. (Select **Users/Phones > Phones**.)

- Investigate all unregistered phones. The Phone page in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**Users/Phones > Phones**) displays the registration status of the phone.

- Verify that the network is running properly.

- If you are using DHCP, verify that the DHCP server is configured appropriately. Verify that the phone is obtaining an IP address from the DHCP server.

- Review any status messages that display on the phone. Verify that the TFTP Server menu option on the phone contains the IP address of the Cisco Unified Communications Manager Business Edition 3000 server. For information on status messages and the TFTP Server option, refer to the phone administration documentation that supports your phone model.

PSTN calls are not established due to the value of the Called Party type number

Description

When you route PSTN calls using T1/E1 PRI or T1 CAS connections, the Cisco Unified Communications Manager Business Edition 3000 communicates the 'type of number' for the Called Party to the service provider. The type of the number depends on whether the called number is local, long distance, or an international number.

If the number format is not valid, the service provider returns an error with a cause code of 28 (Invalid Number Format), and the PSTN calls will not be established.

Resolution

Select **Connections > PSTN Connections > Edit PSTN Connection > Connection Settings > Show Advanced Settings/Hide Advanced Settings.** Set the 'Called Party IE number' to Unknown. The type of number will be designated as a unknown number type and the PSTN calls will not fail from the service provider with cause code of 28.

Product licensing is out of compliance

Description

One of the following issues may have occurred:

- After you provisioned something that requires the use of a license, for example, you provisioned a a phone, a feature, and so on, licenses were consumed by the system. More licenses were consumed by the system than are available (installed).

- After an upgrade to a major release of the software, the system identified that you need to install additional licenses.

Resolution

Perform any of the following tasks:

- Determine which license types are oversubscribed. (Select **Maintenance > Manage Licenses**.) Purchase licenses and install them on the Manage License page.

- Delete any phones in the system that are not being used. When you delete the phone, the system automatically credits you with licenses.

The system has overheated and must be powered off and then restarted

Description

The system has overheated.

Resolution

Restart the server. (Select **Maintenance > Restart/Shutdown**.)

The system fan is not operating properly and the system must be powered off and then restarted

Description

The system fan is not operating properly.

Resolution

Restart the server. (Select **Maintenance > Restart/Shutdown**.)

The system CPU voltage is too high and the system must be powered off and then restarted

Description

The system CPU voltage is very high.

Resolution

Restart the server. (Select **Maintenance > Restart/Shutdown**.)

The system has experienced an error with voicemail and auto attendant services and must be restarted

Description

A required voicemail or auto attendant service is not running.

Resolution

Take the following actions:

- Restart the server. (Select **Maintenance > Restart/Shutdown**.)

- If the issue persists, generate a log file by navigating to **Monitoring > Diagnostics**; then, download the log file to your PC and send it to the technical support team; for example, contact your Value Added Reseller (VAR), or if you are the Value Added Reseller, contact the Cisco Technical Assistance Center (TAC).

The system has experienced an error with voicemail and auto attendant services and must be restarted

Description

The voicemail database is not working. The system cannot access the database, the user experienced an issue with voicemail, or the voice-mail message was not delivered to voicemail.

Resolution

Take the following actions:

- Restart the server. (Select **Maintenance > Restart/Shutdown**.)

- If the issue persists, generate a log file by navigating to **Monitoring > Diagnostics**; then, download the log file to your PC and send it to the technical support team; for example, contact your Value Added Reseller (VAR), or if you are the Value Added Reseller, contact the Cisco Technical Assistance Center (TAC).

Chapter 47   Troubleshooting Issues

The system has reached capacity for voicemail and auto attendant calls. Voicemail and auto attendant services are ■

The system has reached capacity for voicemail and auto attendant calls. Voicemail and auto attendant services are unreachable

Description

All voicemail and auto attendant ports are being used, or a system issue is occurring. Callers cannot leave voice-mail messages.

Resolution

- Wait to see if the issue resolves itself.

- Restart the server. (Select **Maintenance > Restart/Shutdown**.)

- If the issue persists, generate a log file by navigating to **Monitoring > Diagnostics**; then, download the log file to your PC and send it to the technical support team; for example, contact your Value Added Reseller (VAR), or if you are the Value Added Reseller, contact the Cisco Technical Assistance Center (TAC).

- Discuss with your technical support team whether you need to purchase and use Cisco Unified Communications Manager Business Edition 5000. (Configuration export is required.)

Voicemail and auto attendant capacity is reduced due to an unresponsive connection

Description

The port is connected longer than expected, so a caller cannot leave a voice-mail message.

Resolution

- Wait to see if the issue resolves itself.

- Restart the server. (Select **Maintenance > Restart/Shutdown**.)

- If the issue persists, generate a log file by navigating to **Monitoring > Diagnostics**; then, download the log file to your PC and send it to the technical support team; for example, contact your Value Added Reseller (VAR), or if you are the Value Added Reseller, contact the Cisco Technical Assistance Center (TAC).

The system has experienced an error with voicemail and auto attendant services and must be restarted

Description

A voicemail or auto attendant service was not able to register with the telephony service. Callers cannot leave voicemail messages.

Resolution

- Restart the server. (Select **Maintenance > Restart/Shutdown**.)

- If the issue persists, generate a log file by navigating to **Monitoring > Diagnostics**; then, download the log file to your PC and send it to the technical support team; for example, contact your Value Added Reseller (VAR), or if you are the Value Added Reseller, contact the Cisco Technical Assistance Center (TAC).

Due to an internal problem, the system is running very low on hard disk space

Description

The disk space for voice is almost at 100%, so callers cannot leave voice-mail messages.

Resolution

- Ask your users to delete old voice-mail messages.

A VM/AA service is utilizing a large amount of CPU resources

Description

A voicemail or auto attendant component is using a large amount of CPU resources.

Resolution

- Restart the server. (Select **Maintenance > Restart/Shutdown**.)

- If the issue persists, generate a log file by navigating to **Monitoring > Diagnostics**; then, download the log file to your PC and send it to the technical support team; for example, contact your Value Added Reseller (VAR), or if you are the Value Added Reseller, contact the Cisco Technical Assistance Center (TAC).

The system has experienced an error with voicemail and auto attendant services and must be restarted

Description

When the caller attempted to use voicemail, an error occurred.

Resolution

- Ask the caller to try again.

- If the issue occurs again, perform the following tasks:

  - Enable tracing on the Diagnostics page (**Monitoring > Diagnostics**).

  - Attempt to reproduce the issue.

  - Generate a log file on the Diagnostics page, and download the log file to your PC.

  - Send the log file to the technical support team; for example, contact your Value Added Reseller (VAR), or if you are the Value Added Reseller, contact the Cisco Technical Assistance Center (TAC).

Chapter 47   Troubleshooting Issues

How do I Enable or disable T1/E1 and ECAN Statistics Logging?

How do I Enable or disable T1/E1 and ECAN Statistics Logging?

Description

When I Enable or disable the T1/E1 and ECAN statistics logging in the Administrative Interface, if the alarm is activated, the T1/E1 status does not increase.

The T1/E1 and ECAN statistics is activated based on the following:

- Enable logging on the Administrative Interface
- When the error count related to T1/E1 increases, the T1/E1 statistics is logged for every 30 seconds in FGASyslog.
- When there is no error count related to T1/E1, the T1/E1 statistics is logged for every 2 minutes FGASyslog.
- ECAN is collected for every 1 minute and it is collected on all active channels only.
- The ECAN Logging Stops if FGA resets.

Resolution

- To Enable T1/E1 and ECAN statistics perform the following steps:
  - Click **Enable Logging** on the Diagnostics page (**Monitoring > Diagnostics**). The T1/E1 and ECAN statistics logging is also enabled.
  - Click the **Generate Log File** on the Diagnostics page, and download the file to your PC to view the FGASyslog file, which contains the T1/E1 and ECAN statistics logs.
- To Disable T1/E1 and ECAN statistics click **Disable Logging** on the Diagnostics page (**Monitoring > Diagnostics**). The T1/E1 and ECAN statistics logging is also disabled.

The phone is registered but automatically resets

Description

If users report that their phones are resetting during calls or while idle on their desks, investigate the cause. If the network connection and Cisco Unified Communications Manager Business Edition 3000 connection are stable, a phone should not reset on its own. Typically, a phone resets if it has problems connecting to the Ethernet network or to the Cisco Unified Communications Manager Business Edition 3000 server.

The phone resets when it loses contact with the Cisco Unified Communications Manager Business Edition 3000 software. This lost connection can be due to any network connectivity disruption, including cable breaks, switch outages, and switch reboots.

Resolution

Perform any of the following tasks:

- Verify that the Ethernet connection to which the phone is connected is up. For example, check whether the particular port or switch to which the phone is connected is down and that the switch is not rebooting. Also make sure that there are no cable breaks.

- Intermittent network outages affect data and voice traffic differently. Your network might have been experiencing intermittent outages without detection. If so, data traffic can resend lost packets and verify that packets are received and transmitted. However, voice traffic cannot recapture lost packets. Rather than retransmitting a lost network connection, the phone resets and attempts to reconnect its network connection. If you are experiencing problems with the voice network, you should investigate whether an existing problem is simply being exposed.

- If you are using DHCP, verify whether the DHCP server is set up appropriately. Verify whether the phone is obtaining an IP address from the DHCP server.

- If the phone uses a static IP address, verify that you entered the IP address correctly on the phone.

The phone has one-way audio

Description

When at least one person in a call does not receive audio, IP connectivity between phones is not established.

Resolution

Check the configurations in routers and switches to ensure that IP connectivity is properly configured.

A phone call cannot be established

Description

The phone does not have an IP address from the DHCP, or for some reason, it is unable to register to Cisco Unified Communications Manager Business Edition 3000.

Resolution

Perform any of the following tasks:

- Verify that the Ethernet cable is attached.

- Verify whether a critical service has failed to start. The Health Summary page identifies when a critical service is down.

- Verify that both phones are registered. (Select **Users/Phones > Phones**, or locate the phone and view the status messages.)

Operator Assisted and Transit Network Dialing does not always work

Description

When calls are routed through gateway of another site, operator assisted and transit network dialing will not always work. If there is more than one site in your system and all the local gateways are in use, calls are routed through a gateway in another site if both the following conditions are satisfied.

- One or more gateways are in different sites

- Gateway usage option is set to All Gateways or Custom so that nonlocal gateways can be used for routing your calls

Resolution

Set gateway usage for the site hosting the calling phone to **Local Gateways**. This will restrict you from using gateway of the other site for placing the calls.

A gateway is not listed in the Site Gateway Usage list

Description

If you set the gateway usage option to All Gateways or Local Gateways and click the link "Show Local Gateways" or "Show All Gateways", the expected gateways are not displayed.

Resolution:

Ensure that you add correct subnet corresponding to the gateway IP address to one of the configured sites, as required. After the gateway is associated to a site correctly, the correct gateways are displayed.

When you choose Local Gateways, a remote gateway is listed in the Local Gateway list

Description

If you set the gateway usage option to Local Gateways, when you click the link **Show Local Gateways**, a few gateways from a different site are listed.

Resolution

Ensure that the subnet corresponding to that gateway IP address is removed from the current site and added to the appropriate site. After the PSTN gateway is associated to a site correctly, the correct gateways are displayed.

Local gateway is not listed in the Local Gateway list

Description

After you add a new IP address or a subnet mask to one of your sites, a few gateways listed as local to the current site are not displayed when you click **Show Local Gateways** in the PSTN Access section**.**

Resolution

The subnet mask assigned to another site may be a closer match to the gateway IP address than that assigned to your current site. The gateway loses association to the current site and is treated as associated to the other site. Ensure that you assign subnets based on IP address of your gateway, depending on the physical location and association to a site in your system.

Gateways from a deleted site are no longer used

Description

After you delete a site, the gateways associated with that site are not used even when other sites are configured to use All Gateways in the PSTN Access section.

Resolution

Currently, these gateways are considered to be in the Unknown location. Ensure that you add appropriate subnets to sites depending on the physical location of the gateways and their IP address. Ensure that the gateways and their IP address are associated to the correct site in your system.

Problems reported with the SPA8800

Description

Problems are found with the SPA8800 (for example: hardware issues, impedances not available, voice quality after parameter adjustment, and so forth).

Resolution

If problems are found with the SPA8800, contact:

*   TAC, who will identify the issue. If they determine that the problem relates directly to the SPA8800, they will transfer to SBTG TAC

*   SBTG TAC, in cases where the SPA8800 is clearly the problem. SBTG TAC may request running configurations to troubleshoot.

To run configurations from Cisco Unified Communications Manager Business Edition 3000:

1. Ensure that the connection is between the remote computer and Cisco Unified Communications Manager Business Edition 3000 over the standard TFTP port, UDP port 69.

2. Retrieve the following: tftp://{CUCMBE 3000 IP}/spa{MAC of SPA8800}.cnf.xml.

    For example, for a SPA8800 with the MAC address 0123456789AB and a CUCMBE 3000 with an IP address of 10.89.1.2, the address would be: tftp://10.89.1.2/spa0123456789AB.cnf.xml.

To run configurations from the SPA8800 web admin GUI:

1. Access the SPA8800 web GUI via http://{IP of SPA8800}/admin/voice/advanced

2. On the web browser, select File > Save As > HTML.

3. Configuration will be stored in the HTML file as embedded tags.

To ensure that SPA8800 provisioning is synched correctly:

1. Access the SPA8800 web GUI via http://{IP of SPA8800}/admin/voice/advanced

2. Check configuration and registration status.

Note   Line 1 or the trunk must be active.

For more information, refer to the Cisco Small Business Support Community:

https://supportforums.cisco.com/community/netpro/small-business

Order of the PSTN Gateways used to route calls changes

Description

If you set the gateway usage option to Local Gateways or All Gateways, calls are routed through selected gateways (as indicated by Show Gateways Accessed from this site on **Add Site > Call Settings > PSTN Access** page) in a particular order. If you change the name of your site or change the name or description of the PSTN connection corresponding to these gateways, the order in which the gateways are used to route the calls changes.

Resolution

The gateway usage selection allows you to add appropriate gateways to a route group that is used to route calls. The ordering of gateways within the route group is based on the following:

1. Site name

2. Gateway name

3. Connection the gateway

The distribution algorithm used for the route group is top-down. The gateways added to the route group are checked for availability in a Top Down order and the first available gateway is used for routing.

If the option chosen is "All Gateways," the local site gateways are added to the route group first. Gateways associated with other sites in the system are added after local gateways and these follow the same ordering as described above.

If you prefer to change the order of the gateway usage in the route group, select "Custom" and reorder the gateways using the arrows.

Upgrade of the Cisco Unified Communications Manager Business Edition 3000 software failed

Description

One of the following issues may have occurred:

- You are upgrading from a release that is not compatible or supported.

- There is not enough disk space on the server.

- The SFTP server does not contain the entire upgrade file.

Resolution

Perform any of the following tasks:

- Verify that you can upgrade from the release that you are currently running.

- If necessary, switch to the inactive version that was running on the system. (Select **Maintenance > Restart/Shutdown**.)

- Perform the upgrade again.

- Verify that the entire file copied over to the SFTP server.

- If the upgrade fails again, generate a log file by navigating to **Monitoring > Diagnostics**; then, download the log file to your PC and send it to the technical support team; for example, contact your Value Added Reseller (VAR), or if you are the Value Added Reseller, contact the Cisco Technical Assistance Center (TAC).

Text displays in English, not in my chosen locale

Description

One of the following issues may have occurred:

- You selected English_United States for the locale in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard. (You cannot change the locale after you set it in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard.)

- Your browser is set to display English.

- You are running a release of the Cisco Unified Communications Manager Business Edition 3000 software, for example, a software patch, and new text is not localized in the version that you are running.

Resolution

Perform any of the following tasks:

- Set your browser to the locale that you are using with the system. (To determine your locale, select **System Settings > Date/Time**.)

- After the new text is localized, upgrade to a version of the software that contains the localized text.

The restore of data failed

Description

One of the following issues may have occurred:

- The software version that was running during the backup was not the exact same software version that was running during the restore.

- After the backup, you changed the hostname of the server before you ran the restore.

- A problem occurred with the SFTP server.

Resolution

Perform any of the following tasks:

- Verify that the software version that is running during the restore exactly matches the software version that was running when you ran the backup.

- Verify that the hostname of the server was not changed before you ran the restore. The restore fails if the hostname that is included in the backup tar file does not match the hostname that is configured on the server.

- If you used a SFTP server, verify that the network connection is good. Verify that you entered the user credentials correctly on the Restore page. Verify that you have space on the SFTP server. Verify that you have access to the folder on the SFTP server where the backup tar file is stored.

Cannot delete SPA8800 phone/connection

Description

Cannot delete SPA8800 phone/connection. Either the Phone 1 or the Line 1 port must be configured on SPA8800 devices.

Resolution

Perform any of the following tasks:

- Delete SPA8800 connections from the PSTN Connections page:
  - Choose Delete for that connection from the PSTN Connection table.

Note   A warning appears for Connections configured for Emergency Calls Only, indicating that the DID used for the connection will no longer be used as an ELIN.

- The delete will not occur for Line 1 if Phone 1 is not configured on the device, as the SPA8800 requires that Line 1 or Phone 1 be configured. In such a case, Line 1 can only be deleted if the SPA8800 device is deleted. In all other cases the device reset dialog will appear notifying the user that the SPA8800 device will be reset and all calls of the associated phones and PSTN connections will be disconnected.
- The connection is removed from the PSTN Connections list.

Note   An associated device is not deleted as a result of removing the connection. A device can only be deleted from the Devices page.

- Delete the SPA8800 analog phone from the Phones page:
  - Choose Delete for that phone in the Phones table.
  - The delete will not occur for Phone 1 if Line 1 is not configured on the device, as the SPA8800 requires that Phone 1 or Line 1 be configured. In such a case, Phone 1 can only be deleted if the SPA8800 device is deleted. In all other cases the device reset dialog will appear notifying the user that the SPA8800 device will be reset and all calls of the associated phones and PSTN connections will be disconnected
  - The phone is removed from the Phones page.

Unable to make calls to local mobile phone numbers

Description

Users with local privileges are unable to dial calls to local mobile phone numbers when Cisco Unified Communications Manager Business Edition 3000 is deployed in some countries such as India, China, and so on.

Resolution

Ensure that you specify the local mobile phone prefixes for the site where the calls to local mobile phone numbers are failing.

Outgoing PSTN calls take a long time to get established

Description

PSTN users experience a delay prior to the system completing an outgoing call

Resolution

Select **System Settings > Dial Plan > Advanced Settings > Interdigit Timeout**. Decrease the Interdigit Timeout value to route the calls faster.

Upgrade of Connection Pack fails during installation

Description

One of the following issues may have occurred:

- An invalid provider XML file.
- The MD5 checksum validation failed.

Resolution

Perform any of the following tasks:

1. When connection pack installation fails, try re-installing the connection pack with a valid XML provider file.

2. Verify that you have entered the correct MD5 checksum value.

3. If the Connection Pack installation or upgrade fails again, generate a log file by navigating to **Monitoring > Diagnostics**; then, download the log file to your PC and send it to the technical support team; for example, contact your Value Added Reseller (VAR), or if you are the Value Added Reseller, contact the Cisco Technical Assistance Center (TAC).

C H A P T E R **48**

Reimaging or Replacing the Cisco Unified Communications Manager Business Edition 3000 Server

This chapter contains procedures that you can perform to reimage the Cisco Unified Communications Manager Business Edition 3000 server, perform a server recovery, or replace the Cisco Unified Communications Manager Business Edition 3000 server. Perform these procedures only if your technical support team advises that you do so.

- Reimaging an MCS 7890-C1, page 48-77
- Using a Network Cable to Set Up Server Access to the Network, page 48-80
- Using the Cisco Network Configuration USB Key, page 48-81
- Performing a Server Recovery, page 48-83
- Replacing the Cisco Unified Communications Manager Business Edition 3000 Server, page 48-84

Reimaging an MCS 7890-C1

The MCS 7890-C1 comes preinstalled with Cisco Unified Communications Manager Business Edition 3000. Cisco Unified Communications Manager Business Edition 3000 supports a reimage through a USB DVD drive only.

Tip Reimage the server only when your technical support team advises that you do so.

Note USB hard disk drives and USB keys should not be plugged in during MCS 7890-C1 reimaging or installation.

The following steps describe how to reimage a MCS 7890-C1. The following procedure does not describe how to restore data if you need to perform a server recovery. For information on a server recovery, see the "Performing a Server Recovery" section on page 48-83.

Procedure

Step 1 Connect the monitor to the VGA port and the USB keyboard to one of the USB ports.

Step 2   Connect a USB DVD drive to the MCS 7890-C1 according to the "Connecting a USB DVD Drive" section on page 2-21.

✎

Note   The install DVD contains a default configuration. Users will be asked to provide a customized configuration during first time setup. Use of a USB key for configuration data during install is not supported.

Step 3   Insert the Cisco-provided DVD for Cisco Unified Communications Manager Business Edition 3000.

⚠

Warning   **To prevent firmware corruption, which can result in a catastrophic failure of the MCS 7890-C1, use of a UPS is highly recommended. The time needed to complete a firmware installation is approximately 30 minutes.**

Step 4   Reboot the MCS 7890-C1.

Step 5   On reboot, the DVD boots up and a media check wizard appears, as shown in Figure 48-1 on page 48-78. Click **Yes** to proceed.

Figure 48-1   Media Check Wizard
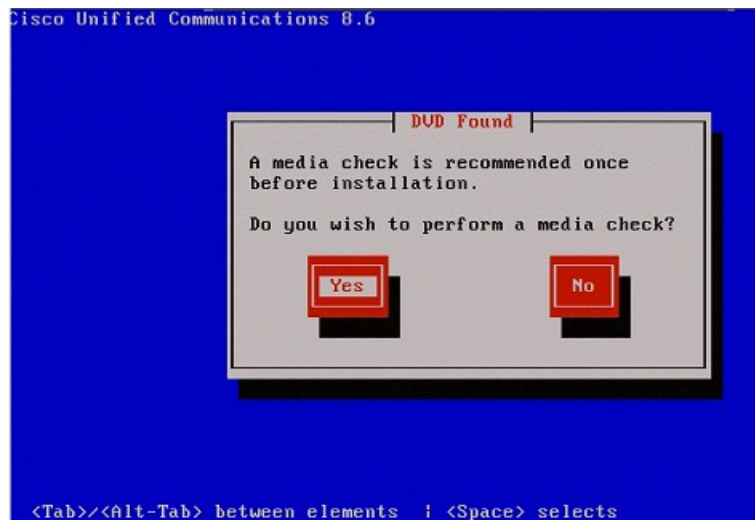
Step 6   Media check takes approximately 30 minutes to complete the media integrity check on the DVD (see Figure 48-2). Click **OK** to continue with Cisco Unified Communications Manager Business Edition 3000 installation. The system takes approximately 3 hours to install Cisco Unified Communications Manager Business Edition 3000.

Figure 48-2   Media Check Passed

![Media Check Passed screen showing: Cisco Unified Communications 8.6. Media Check Result. The media check of the image: Cisco Unified Communications 8.6 PASSED. It is OK to install from this media. OK button. <Tab>/<Alt-Tab> between elements | <Space> selects]

Note   During the installation or reimaging relating to a new Cisco Unified Communications Manager release, a server may require firmware updates applied if the MCS 7890-C1 server contained old firmware from a previous release.

This will cause the server to reboot during installation, to pick up new firmware updates. The following message appears when this happens:

"Hardware setup for server requires a reboot for new update or settings to take effect. Install will continue after server has rebooted."

The user must acknowledge this message, resulting in a server reboot back to the DVD. When prompted with the media check option in this subsequent reboot, the user can skip the media check option and continue with the installation.

Step 7   A prompt appears asking: "Do you want to overwrite the hard drive?" Click Yes.

Note   Some USB DVD drives will automatically retract the DVD tray after the initial install phase, and the system may boot off it again. If this happens, the check media prompt will be displayed again. This is normal. To correct, simply reboot the server, eject the DVD, and the second phase of the install will continue from the internal drive.

Step 8   The installation will proceed at this point. Look for the following to be displayed on the console: "Cisco Unified Communications Manager Business Edition 3000 administrative interface can be accessed using a supported web browser at https://192.168.1.250. For more information, refer to the Administration Guide for Cisco Unified CM Business Edition 3000."

Step 9   Disconnect the USB DVD drive from the MCS 7890-C1 according to the "Disconnecting a USB DVD Drive" section on page 2-22.

Step 10   The reimage resets the server to the default IP address of 192.168.1.250. To ensure that the server is recognized on the network, perform one of the following procedures:

Using a Network Cable to Set Up Server Access to the Network

Your server comes preinstalled with a default IP address of 192.168.1.250. To ensure that the Cisco Unified Communications Manager Business Edition 3000 server is recognized by the network, you must either use the Cisco Network Configuration USB key, as described in "Using the Cisco Network Configuration USB Key, page 48-81" or you must connect an Ethernet cable from the server to a laptop, as described in the following procedure.

Procedure

Step 1   On the laptop, set the IP address to 192.168.1.10 or another IP address in the same subnet.

Caution   Do not set the IP address of the laptop to the default IP address of the server.

Step 2   On the laptop, set your netmask to 255.255.255.0 and set the default gateway to 192.168.1.1.

Step 3   Connect the Ethernet cable from the server to the laptop. You may use a crossover cable or a straight Ethernet cable.

Step 4   If you have a Cisco-provided country pack, licenses, and the Cisco-provided .xls data configuration file on a USB key, insert the USB key into the server.

Step 5   Log in to the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard by using the default IP address of the server (192.168.1.250). Specify the username and password as follows:

- Username: **admin**
- Password: **BE-3000**

After you log in, you can update the network parameters, including the IP address of the server, one of the ways:

- On the Network page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (during the initial deployment)
- By uploading the Cisco-provided .xls data configuration file in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (during the initial deployment)

Step 6   After you complete the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard and the server restarts, you may disconnect the Ethernet cable from the laptop and server. Connect the laptop to the switch. If you have not already done so, connect the server to the switch so that the setup continues.

Using the Cisco Network Configuration USB Key

The Cisco Network Configuration USB Key consists of configure.xml file, also known as the Network Configuration signature file. The Cisco Network Configuration USB Key helps to create a temporary network interface, based on the values specified in the Network Configuration signature file, in a brand-new Cisco Unified Communications Manager Business Edition 3000 and access the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard.

The following procedure describes how to use the Cisco Network Configuration USB Key to create a temporary network interface to do the following:

- Connect to Cisco Unified Communications Manager Business Edition 3000 and access the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard.

- Access Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard after reimaging the Cisco Unified Communications Manager Business Edition 3000. Reimage the server only if your technical support team recommends that you do so.

To use the Cisco Network Configuration USB Key, you must download the Network Configuration signature file called configure.xml from www.cisco.com and update it with appropriate network configuration information. Save the updated Network Configuration signature file in the root directory of the Cisco Network Configuration USB key and insert it in the Cisco Unified Communications Manager Business Edition 3000 to create a temporary network interface without modifying the existing network configuration of the Cisco Unified Communications Manager Business Edition 3000. Using the temporary network interface, you can access the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard and permanently change the network setting of the Cisco Unified Communications Manager Business Edition 3000.

> **Note**   Ensure that the Cisco Unified Communications Manager Business Edition 3000 is in operational state and switched on before inserting a USB key.

The following steps explain the network configuration process using the Cisco Network Configuration USB Key:

Procedure

Step 1   Download the Configure Network Signature file called configure.xml from www.cisco.com and save it on your laptop.

Step 2   Open the Network Configuration signature file in your laptop and modify its content.

Table 48-1 describes the parameters in the network configuration signature file.

Table 48-1   Content of Network Configuration Signature File

Parameter	Description
Configure Network	By default, the value is hard coded to no. Change this to yes if you want to create a temporary network interface. This temporary network interface exists along with the current configuration in the Cisco Unified Communications Manager Business Edition 3000. This temporary interface is destroyed automatically when the Cisco Unified Communications Manager Business Edition 3000 is rebooted.
IPAddress	Enter the appropriate IP Address based on the customers LAN. This is a mandatory requirement to change the network configuration.
Subnet Mask	Enter the appropriate subnet mask of the customers LAN. This is a mandatory requirement to change the network configuration.
Gateway	Enter the gateway details of the customers LAN. This is an optional requirement.

Step 3   Save the Network Configuration signature file to the Cisco Network Configuration USB Key.

Step 4   Remove the Cisco Network Configuration USB Key from the laptop and put it in a location that you will remember.

Step 5   If you have not already done so, install the Cisco Unified Communications Manager Business Edition 3000 server in the customer LAN and power it up.

Step 6   Insert the Cisco Network Configuration USB Key in Cisco Unified Communications Manager Business Edition 3000. Inserting the USB key creates a temporary network interface which contains network management information that enables users to connect to the Cisco Unified Communications Manager Business Edition 3000 server.

Step 7   To connect the laptop to Cisco Unified Communications Manager Business Edition 3000, open a browser window to access the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard using the IP address that is configured in the Network Configuration signature file.

Step 8   After you log in, you may update the network parameters, including the IP address of the server, one of the ways:

- On the Network page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (during the initial deployment)

- By uploading the Cisco-provided .xls data configuration file in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard (during the initial deployment)

Tip   After you access the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, you can also generate the configure.xml file from the Network page and save it to a USB key. (Select **System Settings > Network**.)

Performing a Server Recovery

If your system is not working properly because of an issue with the MCS 7890-C1, you may need to perform a server recovery, which allows you to reinstall Cisco Unified Communications Manager Business Edition 3000 on the same server and then restore your data from a backup tar file. Perform a server recovery only when your technical support team advises you to do so.

The following procedure describes how to perform a server recovery.

Procedure

Step 1   Verify that you have a good backup tar file that is the exact same version as the version of software that you plan to install on your server. The versions must match *exactly* for the server recovery to be successful.

Step 2   Reimage the server, as described in the "Reimaging an MCS 7890-C1" section on page 48-77. Make sure that you install exactly the same version of Cisco Unified Communications Manager Business Edition 3000 software as was used in the backup tar file; otherwise, the restore of data fails.

Step 3   Run the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard.

⚠
Caution   If you used a country pack in your original setup, make sure that you reinstall the same country pack on the Change Country/Locale page.

In the Network page, make sure that you enter the same IP address and hostname of the server.

Step 4   If your backup is the same version as the software that you installed, restore the data now. In the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, select **Maintenance > Restore**.

⚠
Caution   Your backup tar file must be exactly the same version as the Cisco Unified Communications Manager Business Edition 3000 software version that is running on the server; otherwise, the restore fails.

Step 5   In the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, verify that your data is restored by viewing the entries on the various search pages where data was configured before the server recovery.

Step 6   In the Upgrade page, reinstall the following files if they were a part of your original setup:

- Device packs
- Locale updates
- Firmware updates

　　　　　　　　• Hotfixes, and so on

Step 7   Make internal and external calls to test your call capabilities.

Replacing the Cisco Unified Communications Manager Business Edition 3000 Server

The license files that you install correlate to the MAC address on the Cisco Unified Communications Manager Business Edition 3000 server; so, if you replace your server, you must perform the steps that are described in the following procedure.

Procedure

Step 1   Obtain a new server. The new server comes installed with the Cisco Unified Communications Manager Business Edition 3000 software on it. Deploy the new server, as described in the Setting Up the Customer Network and Central Site, page 6-2.

Step 2   You cannot access the GUIs until the network recognizes the server. For the network to recognize the server, you must perform one of the following procedures:

　　• Using a Network Cable to Set Up Server Access to the Network, page 48-80.

　　• Using the Cisco Network Configuration USB Key, page 48-81

Step 3   Log in to the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, and run the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard.

⚠
Caution   If you need to install a country pack, install the country pack on the Country/Language page.

In the Network page, make sure that you enter the hostname for the old server. In the Network page, enter the IP address of the new server. The restore fails if you do not enter the hostname for the old server.

You do not need to perform other configuration tasks in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard because the backup tar file that you will restore contains your configured data.

Step 4   If your backup tar file is the exact same version as the Cisco Unified Communications Manager Business Edition 3000 software version that is running on the server, restore the data to the new server after you log in to the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. (Select Maintenance > Restore.)

⚠
Caution   Your backup tar file must be the exact same version as the Cisco Unified Communications Manager Business Edition 3000 software version that is running on the server; otherwise, the restore fails.

Step 5   In the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, verify that your data is restored by viewing the entries on the various search pages where data was configured before you replaced the server.

Step 6   In the Upgrade page, reinstall the following files if they were a part of your original setup; for example, reinstall:

- Device packs
- Locale updates
- Firmware updates
- Hotfixes, and so on

Step 7   Make internal and external calls to test your call capabilities.

Step 8   Although the backup tar file contains the license files, you cannot use them after the data is restored to the new server because the license files in the backup tar file are tied to the MAC address of the previous server.

Cisco gives you 30 days to obtain and install new license files. During that 30 day window, you cannot upgrade the Cisco Unified Communications Manager Business Edition 3000 software to a later release than was originally on the previous server. During that window, the phones and users continue to function as expected, although you cannot add any new phones to the system or enable voicemail until you obtain and install new license files.

Step 9   Obtain and install new license files before the 30 day window expires.

C H A P T E R 49

Cisco Unified Communications Manager Business Edition 3000 TCP and UDP Port Usage

This chapter provides a list of the TCP and UDP ports that Cisco Unified Communications Manager Business Edition 3000 Release 8.6(2) uses for communications with external applications or devices.

Note Cisco has not verified all possible configuration scenarios for these ports. If you are having configuration problems using this list, contact Cisco technical support for assistance.

The ports that are listed in this chapter apply specifically to Cisco Unified Communications Manager Business Edition 3000 Release 8.6(2). Some ports change from one release to another, and future releases may introduce new ports. Therefore, make sure that you are using the correct version of this document for the version of Cisco Unified Communications Manager Business Edition 3000 that is installed.

Note The Ephemeral port range for the system is 32768 to 61000.

Port Descriptions

Table 49-1 describes the ports that are used by Cisco Unified Communications Manager Business Edition 3000.

Table 49-1   *TCP and UDP Ports Used by Cisco Unified Communications Manager Business Edition 3000*

From (Sender)	To (Listener)	Destination Port	Purpose
Browser	Cisco Unified Communications Manager Business Edition 3000	8080, 8443 / TCP	Provide access to: • Web admin • User Option pages
Cisco Unified Communications Manager Business Edition 3000	Endpoint	22 / TCP	Secure FTP service, SSH access

Table 49-1 **TCP and UDP Ports Used by Cisco Unified Communications Manager Business Edition 3000 (continued)**

From (Sender)	To (Listener)	Destination Port	Purpose
Endpoint or Gateway	Cisco Unified Communications Manager Business Edition 3000	69, Ephemeral (Linux) / UDP	Provide TFTP service to phones and gateways.
Endpoint or Gateway	Cisco Unified Communications Manager Business Edition 3000	6970 / TCP	Provide configuration, load, and firmware file service to phones and gateways over HTTP
SNMP Server	Cisco Unified Communications Manager Business Edition 3000	7999 / TCP	Cellular Digital Packet Data Protocol.
Browser	Cisco Unified Communications Manager Business Edition 3000	443 / TCP	HTTP over SSL (HTTPS)
Browser	Phone	80 / TCP	HTTP
Phone	Cisco Unified Communications Manager Business Edition 3000	2000 / TCP	Provide services to SCCP-based phones.
Gateway	Cisco Unified Communications Manager Business Edition 3000	2427 / UDP	Provide services to MGCP-based gateways.
Gateway	Cisco Unified Communications Manager Business Edition 3000	2428 / TCP	Provide services to MGCP-based gateways to backhaul Q.931 and Management messages.
Gateway	Cisco Unified Communications Manager Business Edition 3000	5060 / TCP and UDP	Provide trunk-based SIP services.
Cisco Unified Communications Manager Business Edition 3000	Gateway		
Gateway	Cisco Unified Communications Manager Business Edition 3000	24576-32767 / UDP	Audio media streaming. Kernel streaming device driver.
Cisco Unified Communications Manager Business Edition 3000	Gateway		
IMAP Server	Cisco Unified Communications Manager Business Edition 3000	7993 / TCP	IMAP inbox access to the Cisco Unified Communications Manager Business Edition 3000 server
VoIP devices (Phones and Gateways)	Cisco Unified Communications Manager Business Edition 3000	16384:21511/ UDP	Cisco Unified Communications Voice Media Mixer
Administrative Workstation	Cisco Unified Communications Manager Business Edition 3000	20532 / TCP	Cisco Unified Communications Database Proxy
Connection Mailbox Sync Service	Cisco Unified Communications Manager Business Edition 3000	9291 / UDP	Sync DAV Notification

Table 49-1   TCP and UDP Ports Used by Cisco Unified Communications Manager Business Edition 3000 (continued)

From (Sender)	To (Listener)	Destination Port	Purpose
Cisco Unified Communications Manager Business Edition 3000	SMTP	25, 8025 / TCP	Cisco Unified Communications SMTP Server
Browser	Cisco Unified Communications Manager Business Edition 3000	143, 8143, 993, 8993 / TCP	Cisco Unified Communications IMAP Server
IP Phone	Cisco Unified Communications Manager Business Edition 3000	21000:21512 / TCP	Cisco Unified Communications Service Manager Phone Apps Service

Glossary

Ephemeral Ports

In most cases, source ports are ephemeral, meaning random within a specified range. When an outgoing request is made, the application solicits the host device for a port from its ephemeral pool. In a few cases, the destination port is also ephemeral, meaning that both the source and destination ports are random.

IMAP

Internet Message Access Protocol—A protocol for retrieving e-mail messages.

SIP

Session Initiation Protocol—A signalling protocol used for establishing sessions in an IP network.

SSH

Secure Shell—A network protocol that allows exchange of data using a secure channel between two networked devices.

SMTP

Simple Mail Transfer Protocol—A protocol for sending e-mail messages between servers.

References

IETF TCP/UDP Port Assignment List

Internet Assigned Numbers Authority (IANA) IETF assigned Port List

http://www.iana.org/assignments/port-numbers

Opening a Case with Cisco Technical Assistance Center

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, Cisco Technical Support provides 24-hour-a-day, award-winning technical assistance. The Cisco Technical Support Website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website remains available 24 hours a day, 365 days a year at this URL:

http://www.cisco.com/techsupport

Using the online TAC Service Request Tool represents the fastest way to open S3 and S4 service requests. (S3 and S4 service requests specify those requests in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool automatically provides recommended solutions. If your issue is not resolved by using the recommended resources, your service request will get assigned to a Cisco TAC engineer. Find the TAC Service Request Tool at this URL:

http://www.cisco.com/techsupport/servicerequest

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests represent those in which your production network is down or severely degraded.) Cisco TAC engineers get assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553 2447

For a complete list of Cisco TAC contacts, go to this URL:

http://www.cisco.com/techsupport/contacts

This section contains details on the type of information that you need when you contact TAC and information on methods of sharing information with TAC personnel:

- Information You Will Need, page 50-92
- Required Preliminary Information, page 50-92
- Online Cases, page 50-93

Information You Will Need

When you open a case with the Cisco TAC, you must provide preliminary information to better identify and qualify the issue. You may need to provide additional information, depending on the nature of the issue. Waiting to collect the following information until you have an engineer request after opening a case inevitably results in resolution delay.

- Required Preliminary Information
    - Network Layout
    - Problem Description
    - General Information
- Online Cases
- Related Topics

Required Preliminary Information

For all issues, always provide the following information to TAC. Collect and save this information for use upon opening a TAC case and update it regularly with any changes.

- Network Layout
- Problem Description
- General Information

Network Layout

Provide a detailed description of the physical and logical setup, as well as all the following network elements that are involved in the voice network (if applicable):

- Obtain the Cisco Unified Communications Manager Business Edition 3000 release that is running on your server. (Click the **About** link in the GUI.)
- Obtain the software release that is running on the gateway.
- Identify the OS version and the VLAN configuration for the switch.
- Identify details of your dial plan; for example, provide the main business number, extension range, and so on.
- Identify the devices that are having issues. Include the IP addresses for the devices.

Ideally, submit a Visio or other detailed diagram, such as JPG. Using the whiteboard, you may also provide the diagram through a Cisco Live! session.

Problem Description

Provide step-by-step detail of actions that the user performed when the issue occurs. Ensure the detailed information includes

- Expected behavior
- Detailed observed behavior

General Information

Make sure that the following information is readily available:

- Is this a new installation? Has this issue occurred since the beginning? (If not, what changes were recently made to the system?)
- Is the issue reproducible?
  - If reproducible, is it under normal or special circumstances?
  - If not reproducible, is there anything special about when it does occur?
  - What is the frequency of occurrence?
- What are the affected devices?
  - If specific devices are affected, what do they have in common?
  - Identify the device names that are impacted, the extensions, and the IP addresses for all devices that are involved in the problem.
- What devices are on the Call-Path (if applicable)?

> **Note**   TAC handles all access information with the utmost discretion, and no changes will get made to the system without customer consent.

Online Cases

Opening a case online through www.cisco.com gives it initial priority over all other case-opening methods. High-priority cases (P1 and P2) provide an exception to this rule.

Provide an accurate problem description when you open a case. That description of the problem returns URL links that may provide you with an immediate solution.

If you do not find a solution to your problem, continue the process of sending your case to a TAC engineer.

Related Topics

- Health Summary, page 24-1
- Troubleshooting Issues, page 47-51
- Troubleshooting from the Health Summary Page, page 46-39
- Troubleshooting From the Diagnostics Page, page 46-41

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