Newer Cisco SBA Guides Available

This guide is part of an older series of Cisco Smart Business Architecture designs. To access the latest Cisco SBA Guides, go to http://www.cisco.com/go/sba

Cisco strives to update and enhance SBA guides on a regular basis. As we develop a new series of SBA guides, we test them together, as a complete system. To ensure the mutual compatibility of designs in Cisco SBA guides, you should use guides that belong to the same series.

Help Desk Using Cisco UCCX Deployment Guide

SMART BUSINESS ARCHITECTURE

August 2012 Series

Preface

Who Should Read This Guide

This Cisco® Smart Business Architecture (SBA) guide is for people who fill a variety of roles:

- Systems engineers who need standard procedures for implementing solutions
- Project managers who create statements of work for Cisco SBA implementations
- Sales partners who sell new technology or who create implementation documentation
- Trainers who need material for classroom instruction or on-the-job training

In general, you can also use Cisco SBA guides to improve consistency among engineers and deployments, as well as to improve scoping and costing of deployment jobs.

Release Series

Cisco strives to update and enhance SBA guides on a regular basis. As we develop a series of SBA guides, we test them together, as a complete system. To ensure the mutual compatibility of designs in Cisco SBA guides, you should use guides that belong to the same series.

The Release Notes for a series provides a summary of additions and changes made in the series.

All Cisco SBA guides include the series name on the cover and at the bottom left of each page. We name the series for the month and year that we release them, as follows:

month year Series

For example, the series of guides that we released in August 2012 are the "August 2012 Series".

You can find the most recent series of SBA guides at the following sites:

Customer access: http://www.cisco.com/go/sba

Partner access: http://www.cisco.com/go/sbachannel

How to Read Commands

Many Cisco SBA guides provide specific details about how to configure Cisco network devices that run Cisco IOS, Cisco NX-OS, or other operating systems that you configure at a command-line interface (CLI). This section describes the conventions used to specify commands that you must enter.

Commands to enter at a CLI appear as follows:

```
configure terminal
```

Commands that specify a value for a variable appear as follows:

```
ntp server 10.10.48.17
```

Commands with variables that you must define appear as follows:

```
class-map [highest class name]
```

Commands shown in an interactive example, such as a script or when the command prompt is included, appear as follows:

```
Router# enable
```

Long commands that line wrap are underlined. Enter them as one command:

```
wrr-queue random-detect max-threshold 1 100 100 100 100 100
100 100 100
```

Noteworthy parts of system output or device configuration files appear highlighted, as follows:

```
interface Vlan64
  ip address 10.5.204.5 255.255.255.0
```

Comments and Questions

If you would like to comment on a guide or ask questions, please use the SBA feedback form.

If you would like to be notified when new comments are posted, an RSS feed is available from the SBA customer and partner pages.

Table of Contents

What's In This SBA Guide

Cisco SBA Collaboration

Cisco SBA helps you design and quickly deploy a full-service business network. A Cisco SBA deployment is prescriptive, out-of-the-box, scalable, and flexible.

Cisco SBA incorporates LAN, WAN, wireless, security, data center, application optimization, and unified communication technologies—tested together as a complete system. This component-level approach simplifies system integration of multiple technologies, allowing you to select solutions that solve your organization's problems—without worrying about the technical complexity.

Cisco SBA Collaboration is a design incorporating unified communications, video collaboration, and web conferencing. By building upon the hierarchical model of network foundation, network services, and user services, Cisco SBA Collaboration provides dependable delivery of business applications and services.

Route to Success

To ensure your success when implementing the designs in this guide, you should first read any guides that this guide depends upon—shown to the left of this guide on the route below. As you read this guide, specific prerequisites are cited where they are applicable.

About This Guide

This *deployment guide* contains one or more deployment chapters, which each include the following sections:

- **Business Overview**—Describes the business use case for the design. Business decision makers may find this section especially useful.
- **Technology Overview**—Describes the technical design for the business use case, including an introduction to the Cisco products that make up the design. Technical decision makers can use this section to understand how the design works.
- **Deployment Details**—Provides step-by-step instructions for deploying and configuring the design. Systems engineers can use this section to get the design up and running quickly and reliably.

You can find the most recent series of Cisco SBA guides at the following sites:

Customer access: http://www.cisco.com/go/sba

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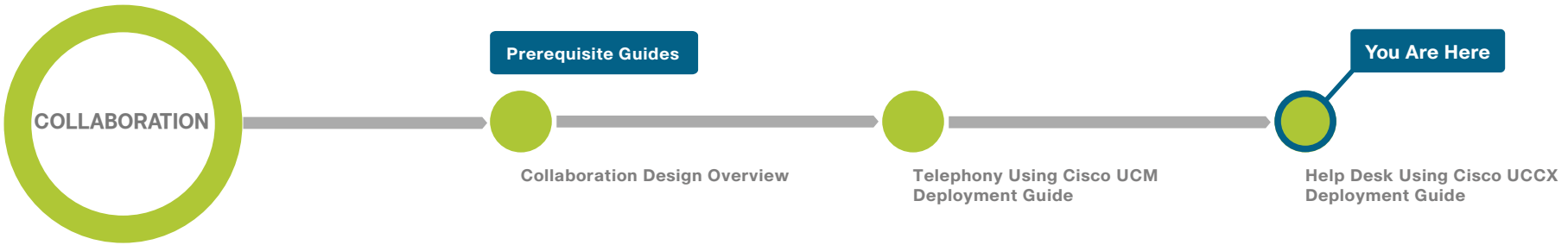


Introduction

Business Overview

The ability to easily add functionality into the telephony environment for corporate help desks has been challenging. Organizations use help desks in their Human Resources departments to answer personnel questions, in IT departments to help employees with their computer problems, and in their facilities departments to maintain and manage their buildings. A help desk helps to minimize the time it takes to answer employees' questions and maximize the available internal resources.

Traditional contact center solutions are difficult to implement because of the additional hardware components and the complexity of the software needed to implement them. The work is normally done by highly trained engineers who spend the majority of their time working with contact centers. The complexity makes the implementation a long process and the additional expertise makes the installation and maintenance quite expensive. Agents are required to work at the location of the contact center equipment because the inherent limitations of the hardware prevent them from working remotely. It is very difficult to integrate the overall system with the corporate data because common interfaces are not readily available.

Technical Overview

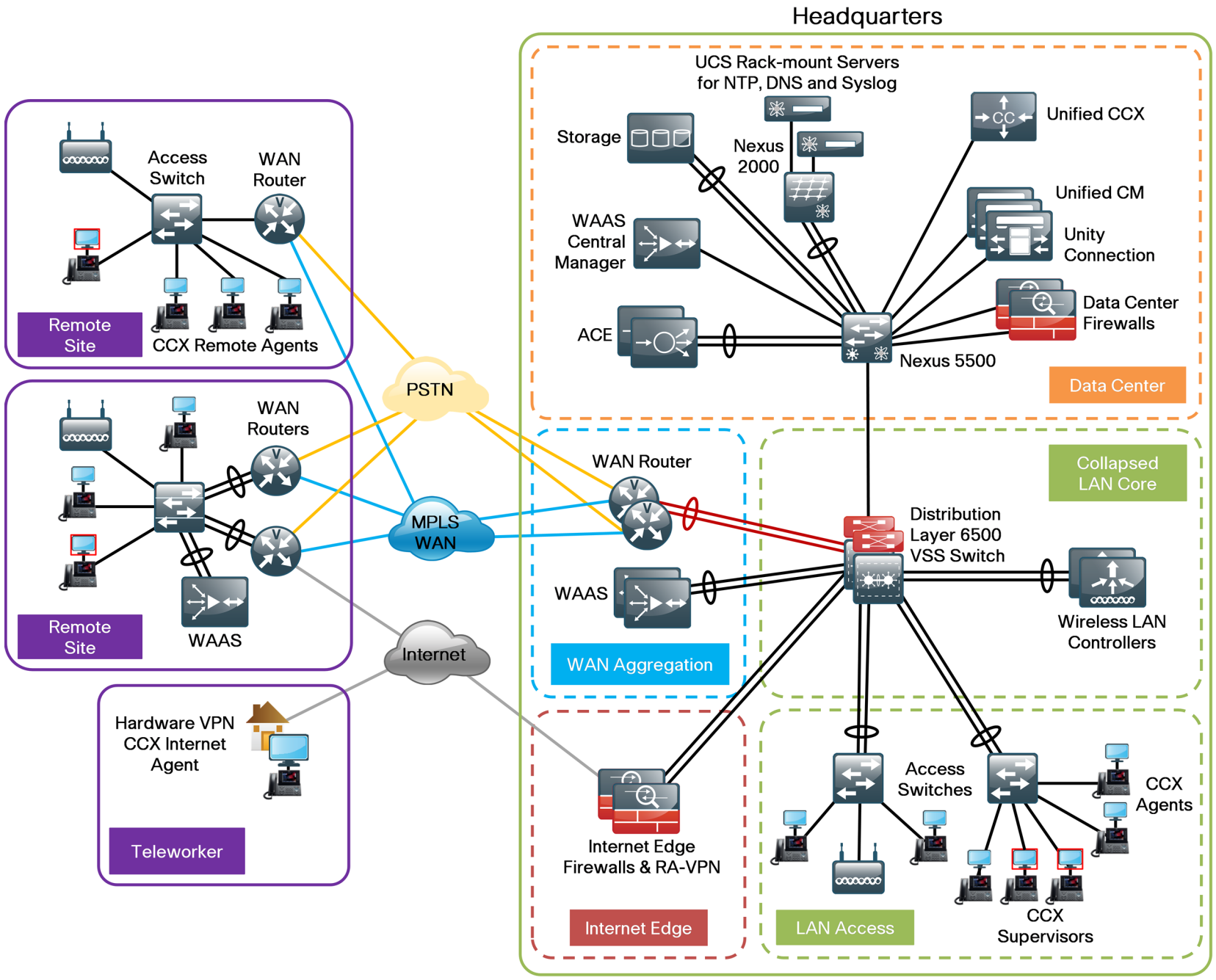
The next-generation IP help desk takes advantage of a company's internal network by making use of the IP private branch exchange (PBX) and other IP-based applications to create a better experience for the callers. Calls are routed to available agents who have the expertise to answer the questions, regardless of their physical location in the company. Agents can view information about the caller through integration with corporate databases; and historical data is saved and viewed in easily readable reports that help improve the day-to-day workings of the help desk. These are just a few of the benefits offered by a fully integrated IP help desk.

Cisco Unified Contact Center Express (Unified CCX) is the IP-based help desk solution offered by Cisco Systems. It is tightly integrated with other Cisco Unified Communications platforms. Design and testing is performed on the suite of Unified Communications products as part of a complete solution. Configuration of Unified CCX is easier than traditional systems because the components talk to each other over the internal IP network, which helps streamline the procedures. For example, when a phone number is created on Unified CCX to reach a help desk application, no additional configuration is needed in the Cisco Unified Communications Manager (Unified CM). The configuration is sent over the network to Unified CM and the directory number is created. Unified CM is automatically configured to pass calls for the directory number to Unified CCX for further processing.

When a call is placed to the help desk, it is first processed by Cisco Unified CM, which recognizes that the number is destined for the Cisco Unified CCX application server. Unified CCX receives the incoming call and identifies which application script is needed to handle the request based on the extension number that was dialed. The script plays prompts and collects digits as dictated by the steps in the script and, if necessary, uses the information from the caller to select an appropriate agent. If an appropriate agent is not available, the call is put in queue and music is streamed to the caller. As soon as an agent is available, Unified CCX instructs Unified CM to ring the agent's phone. When the agent picks up, information about the caller is populated into the agent's desktop application and the conversation begins.

Cisco Unified CCX has the features of a large contact center packaged into a single- or dual-server deployment. The system scales up to 400 concurrent agents, 42 supervisors, 150 agent groups, and 150 skill groups. It includes email, outbound calling, inbound calling, workforce optimization, and reporting.

Figure 1 - Typical Cisco Unified CCX deployment in the foundation architecture



The Cisco Unified CCX features are listed in more detail below:

- Automatic call distributor (ACD)—Unified CCX routes calls by using skills or resource groups. Skills-based routing distributes the call based on the skill level of the agent for a particular topic. It is the method most often used. Resource-group routing distributes calls to agents based on the resource group to which the agents are assigned.
- Interactive voice response (IVR)—IVR controls the interaction between the caller, prompts, and menus. Depending on the options the caller enters into the system, IVR uses an application script to determine how to handle the call. IVR can read or write corporate database information, play information such as tracking numbers to callers, and collect information from the caller through digits or speech recognition.
- Agent Email—Agent Email allows customers to contact the help desk by email. Agents are assigned skills, and email is distributed to agents based on their skills. Email agents can use preset templates in their replies to avoid writing repetitive emails.
- Agent Desktop—Cisco Agent Desktop is an application that resides on the agent's computer. Agents use the application to log in at the beginning of their shifts, indicate whether they are in a ready state or on a break, and log out at the end of the day. When an agent is logged in and ready, calls are sent to Agent Desktop, which presents information about the incoming call. The application has an integrated browser to access a customer database or browse the Internet to help answer a question. Agent Desktop is a great tool for agents because everything they need to do their job is in one place, which allows them to focus on answering the caller's question.
- Supervisor Desktop—Cisco Supervisor Desktop helps supervisors keep track of real-time statistics such as how many calls are in queue, the number of agents available, and the average time a caller is spending in queue. Supervisors can also use Supervisor Desktop to coach agents by silently monitoring calls, chatting with agents, joining a call, and pushing a webpage down to an Agent Desktop. Supervisor Desktop helps supervisors ensure that calls are being handled on a timely basis and agents are not giving callers incorrect information. If there is an issue, Supervisor Desktop allows them to quickly address the problem.
- Reporting—Cisco Unified CCX saves statistics in an internal database that can be accessed by the historical reporting client application to create reports. Reports can be scheduled on a recurring basis or created as needed. Reports can be general, such as information about the entire help desk over a year, or specific, such as information about a particular agent for one day. Historical reports allow managers to get a big picture of their help desk and to make changes to address issues.
- Workforce Management—Workforce Management is a tool that uses a sophisticated algorithm to look through historical data and create a schedule that will have the right number of agents on staff at the right times during the day. This tool helps ensure that more agents are on staff at busy times and agents have scheduled breaks during slow times.
- Quality Manager—Quality Manager is a tool that records calls. Quality Manager randomly selects calls throughout the day to be recorded, or you can select specific calls to record. This tool also creates standardized score sheets to help determine how well the agent handled the call. Quality Manager is a great coaching tool designed to make the help-desk experience more satisfying for the caller.

Cisco Unified CCX is a powerful application. Through its strong scripting engine, easy-to-use desktops, extensive reporting tools, and sophisticated workforce optimization, it can successfully operate even the most complicated corporate help desks. The next several sections of this document will guide you through the process of installing and configuring Cisco Unified CCX in a Unified CM environment.

Deployment Details

Cisco Unified CCX runs on the same Linux operating systems as several other Unified Communications platforms from Cisco. You install the operating system with the application by using the standard installation DVD.

Process

Preparing the Platform for Unified CCX

1. Prepare a virtual machine for Unified CCX
2. Prepare a server for Unified CCX

For a quick and easy installation experience, it is essential to know up-front what information you will need. For Unified CCX, make sure you have completed the following steps before you start:

- If you are installing Unified CCX on a new virtual machine (VM), download the Open Virtualization Archive (OVA) file from the Cisco website at: http://www.cisco.com/cisco/software/release.html?mdfid=270569179&softwareid=283733053
- Check the Cisco website to determine if there is a patch for your version of Unified CCX: http://www.cisco.com/cisco/software/release.html?mdfid=270569179&flowid=5217&softwareid=280840578

If you are installing a virtual machine, follow the steps in "Prepare a virtual machine for Unified CCX," later in this guide.

If you are installing a standalone server, locate the Unified CCX DVD that shipped with your order, and then follow the steps in "Prepare a server for Unified CCX," later in this guide.

Procedure 1 Prepare a virtual machine for Unified CCX

When you install Cisco Unified CCX on VMware, follow the steps below to deploy an OVA file to define the virtual machine requirements. You use the Open Virtualization Format (OVF) support of VMware to import and deploy the OVA file.

The Cisco Unified CCX OVA file for 100 agents defines the following virtual machine:

- Number of virtual CPUs—2 (with 900 MHz reservation)
- Amount of RAM—4 GB (with 4 GB reservation)
- Hard disk—146 GB
- ESXi support—ESXi 4.0 or ESXi 4.1 (VM version 7)
- OS support—Red Hat Enterprise Linux 4 (32-bit)

The Cisco Unified CCX OVA file for 300 agents defines the following virtual machine:

- Number of virtual CPUs—2 (with 900 MHz reservation)
- Amount of RAM—4 GB (with 4 GB reservation)
- Hard disks—2 x 146 GB
- ESXi support—ESXi 4.0 or ESXi 4.1 (VM version 7)
- OS support—Red Hat Enterprise Linux 4 (32-bit)

The Cisco Unified CCX OVA file for 400 agents defines the following virtual machine:

- Number of virtual CPUs—4 (with 900 MHz reservation)
- Amount of RAM—8 GB (with 8 GB reservation)
- Hard disks—2 x 146 GB
- ESXi support—ESXi 4.0 or ESXi 4.1 (VM version 7)
- OS support—Red Hat Enterprise Linux 4 (32-bit)

Step 1: In the VMware vSphere client, choose **File > Deploy OVF Template**.

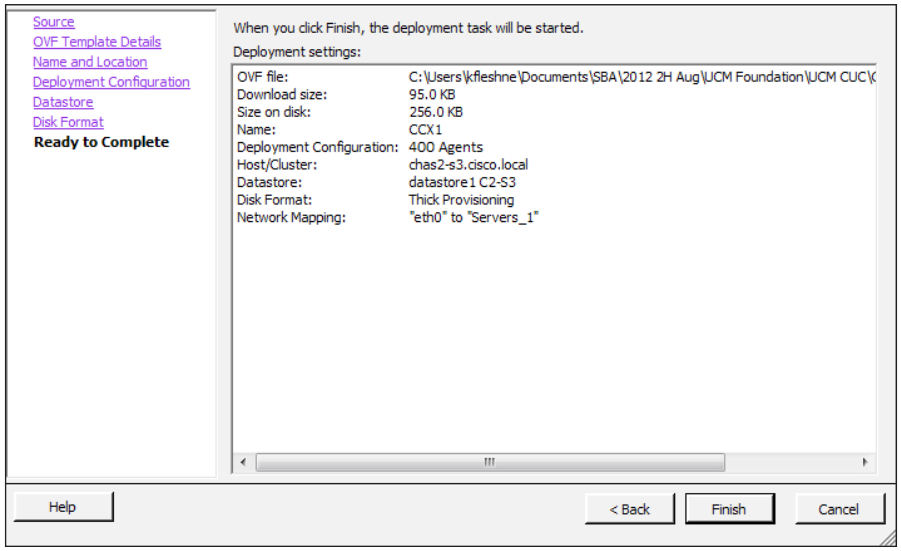
Step 2: Click the **Browse** button next to the **Deploy from a file or URL** box, find the location of the OVA file that you downloaded from Cisco, and then click **Next**.

Step 3: Verify the information on the **OVF Template Details** screen, and then click **Next**.

Step 4: Read the End User License Agreement, click **Accept**, and then click **Next.**

Step 5: Enter the following information in the Deploy OVF Template wizard, and then click **Finish**.

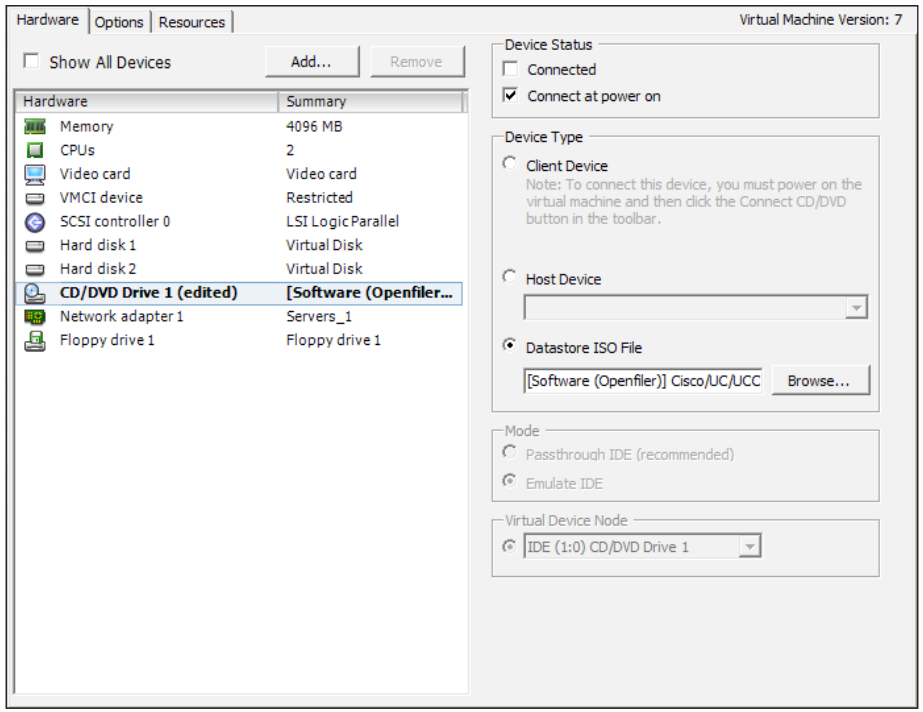
- On the **Name and Location** page, in the **Name** box, enter the virtual machine name CCX1, and then click **Next.**
- On the **Deployment Configuration** page, choose the **Configuration** type from the pull-down menu, and then click **Next.**
- On the **Datastore** page, choose the location to store the VM files, and then click **Next.**
- On the **Disk Format** page, choose a format in which to store the virtual machine's virtual disks, and then click **Next.**
- On the **Network Mapping** page, choose the **Source Networks** to map to the **Destination Networks**, and then click **Next.**
- On the **Ready to Complete** page, verify the settings, and then click **Finish**.



Step 6: After the virtual machine is created, on the **Getting Started** tab, choose **Edit virtual machine settings**.

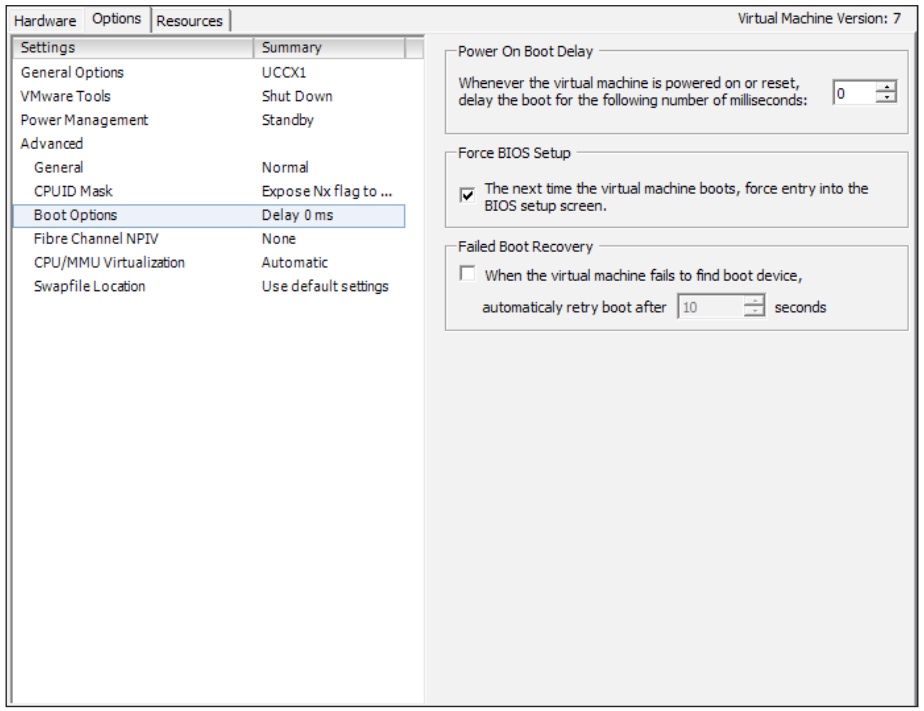
Step 7: On the Hardware tab, select **CD/DVD Drive 1**.

Step 8: Select **Datastore ISO File**, click **Browse**, and then navigate to the location of the Cisco Unified CCX bootable installation file.



Step 9: On the **Options** tab, choose **Boot Options.**

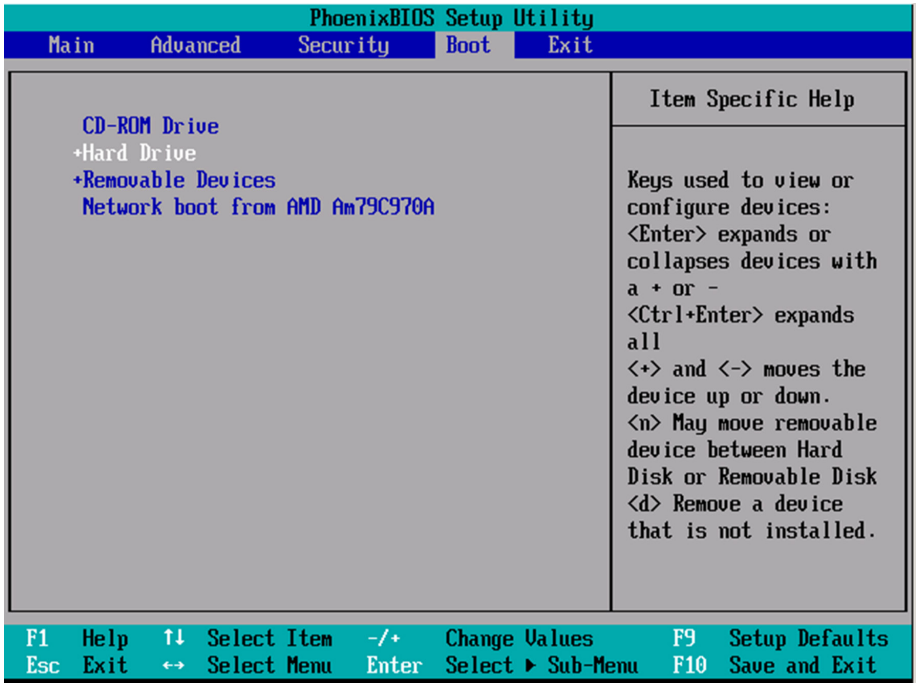
Step 10: Select **The next time the virtual machine boots, force entry into the BIOS setup screen**, and then click **OK**.



Step 11: On the **Getting Started** tab, choose **Power on the virtual machine**, and then click the **Console** tab to watch the server boot.

Step 12: After the machine boots into the PhoenixBIOS Setup Utility, use the right arrow key to move to the **Boot** tab.

Step 13: Edit the boot order with the **+** and **-** keys to make CD-ROM Drive the first item and Hard Drive the second.



Step 14: To save the BIOS settings, press the **F10** key.

Step 15: To complete the installation, follow the procedures in "Installing Cisco Unified CCX," later in this guide.

Procedure 2 Prepare a server for Unified CCX

When installing Cisco Unified CCX on a standalone server, use the following system requirements:

- CPU—Single Xeon Nehalem quad-core E5504 at 2.0 GHz
- RAM—8 GB
- Hard disks—2 x 146 GB SAS
- OS support—Red Hat Enterprise Linux 4 (32-bit)

Step 1: Physically install the server and attach the monitor, keyboard, and network cable.

Step 2: Insert the Cisco Unified CM DVD into the DVD drive.

Step 3: Power up the server. It boots from the DVD.

Step 4: After the DVD loads, follow the procedures in "Installing Cisco Unified CCX" to complete the installation.

Process

Installing Cisco Unified CCX

1. Install the Unified CCX platform
2. Set up application administration

The process is the same whether you are installing in a virtual environment or on a standalone server.

Make sure you have the following information:

- Time zone for the server
- Host name, IP address, network mask, and default gateway
- Domain Name System (DNS) server IP addresses
- Administrator ID and password
- Organization and unit
- Location, state, and country
- Network Time Protocol (NTP) server IP addresses
- Security password
- Application username and password

Complete the tasks listed below before you start the installation:

- Configure Cisco Unified CCX host name (CCX1) in DNS.
- Obtain license files from the Cisco licensing system.

Procedure 1 Install the Unified CCX platform

Step 1: On the **DVD Found** screen, choose to perform a media check by selecting **Yes**.

Step 2: If the media check is successful, click **OK** in order to continue with the installation process.

Step 3: If the media check does not pass, contact Cisco Technical Assistance Center or your local representative to replace the media, and then repeat Step 1.

Step 4: On the **Product Deployment Selection** page, click **OK**.

Step 5: On the **Proceed with Install** page, verify that the version is correct, and then click **Yes**.

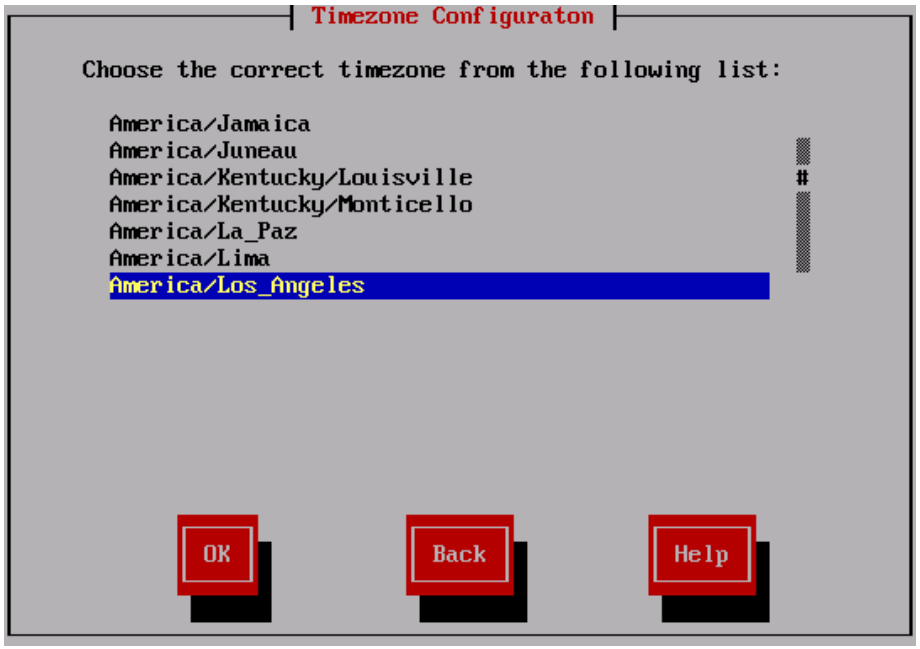
Step 6: On the **Platform Installation Wizard** page, click **Proceed**.

Step 7: On the **Apply Patch** page, do one of the following:

- If no upgrade patch exists for the version you are installing, click **No**.
- If an upgrade patch does exist, click **Yes**, and then follow the instructions on the screens to complete the process.

Step 8: On the **Basic Install** page, click **Continue**.

Step 9: On the **Timezone Configuration** page, choose the correct time zone for the server location, and then click **OK**.

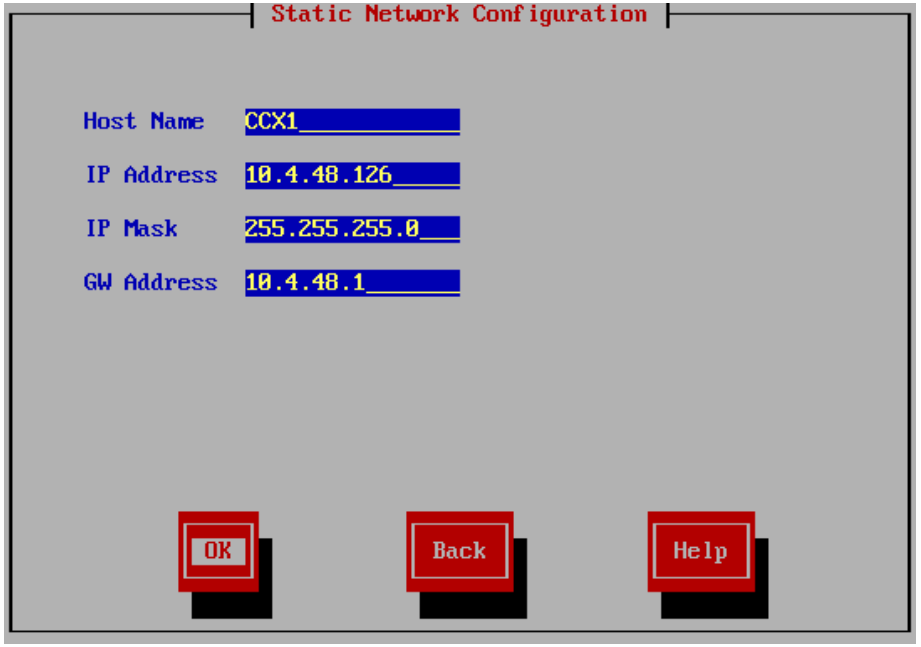


Step 10: On the **Auto Negotiation Configuration** page, click **Yes**.

Step 11: On the **MTU Configuration** page, click **No**. This keeps the default maximum transmission unit (MTU) size.

Step 12: On the **Static Network Configuration** page, enter the following information, and then click **OK**.

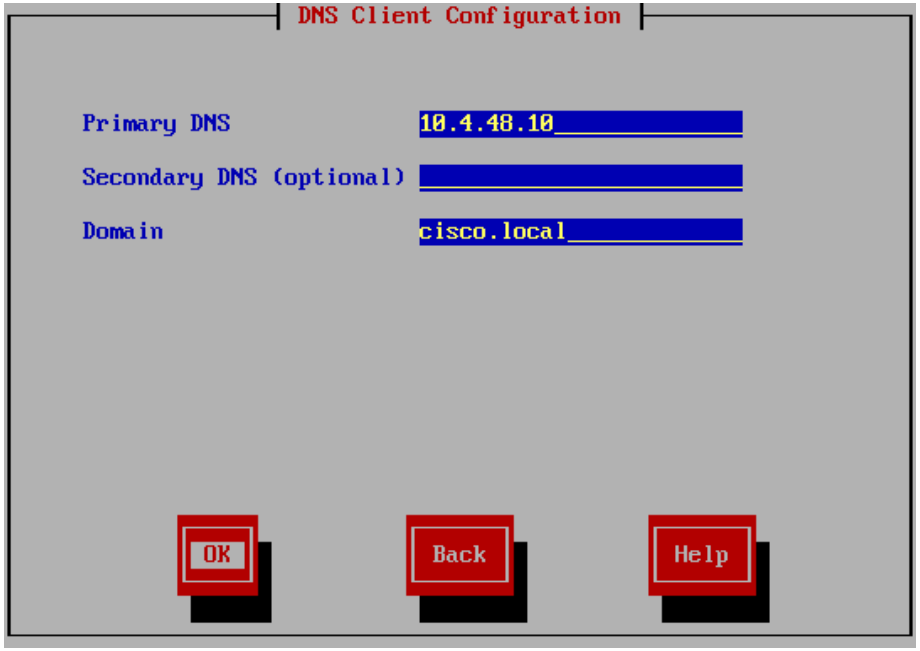
- Host Name—CCX1
- IP Address—10.4.48.126
- IP Mask—255.255.255.0
- GW Address—10.4.48.1



Step 13: On the first **DNS Client Configuration** page, click **Yes**.

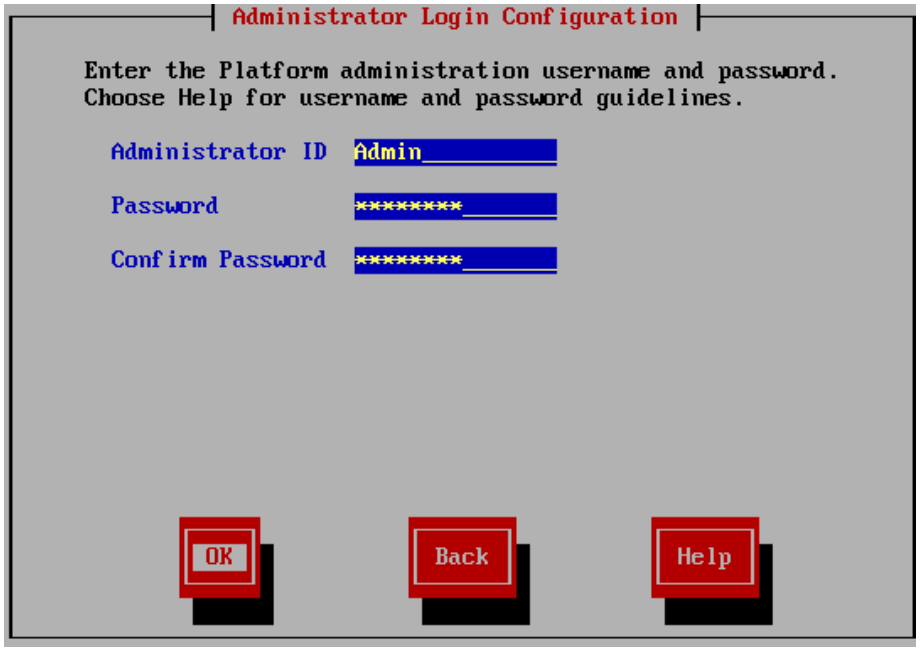
Step 14: On the second **DNS Client Configuration** page, enter the following information, and then click **OK.**

- Primary DNS—10.4.48.10
- Domain—cisco.local



Step 15: On the **Administrator Login Configuration** page, enter the following information, and then click **OK**.

- Administrator ID—Admin
- Password—[password]
- Confirm Password—[password]

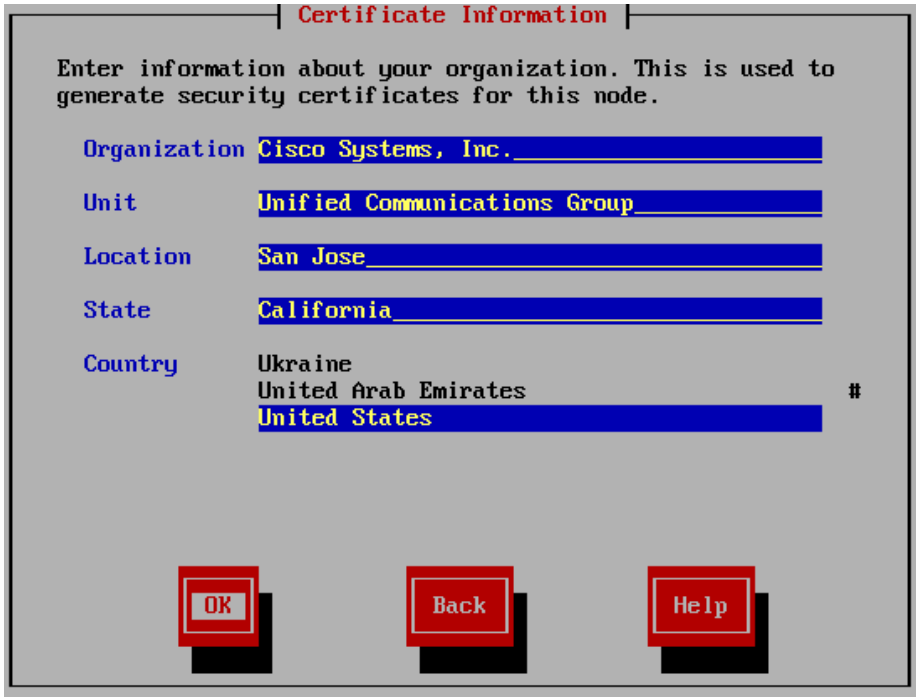


Step 16: On the **Certificate Information** page, enter the information that will be used to generate security certificates, and then click **OK**.

- Organization—Cisco Systems, Inc.
- Unit—Unified Communications Group
- Location—San Jose
- State—California
- Country—United States

Tech Tip

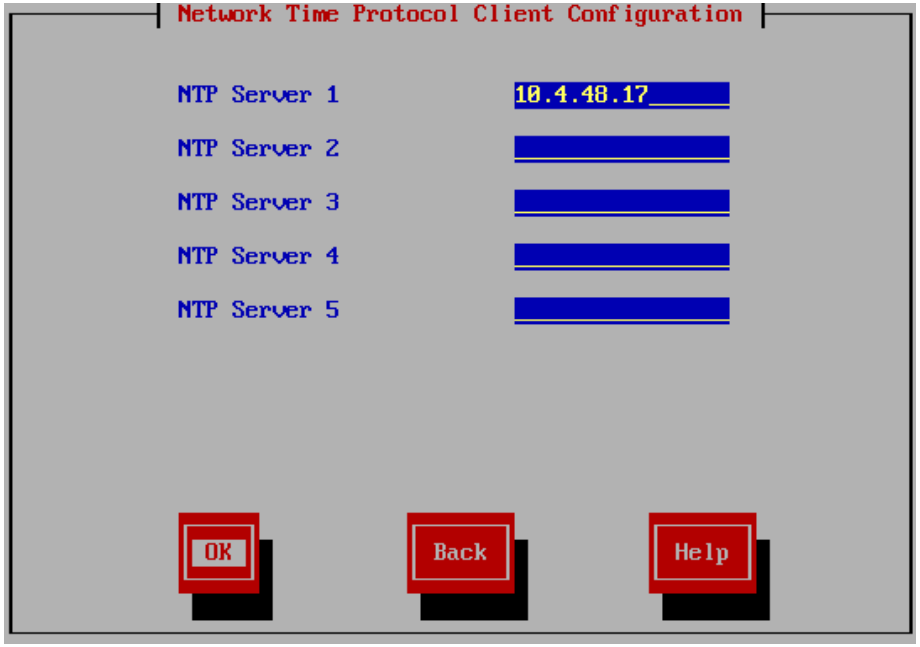
These fields must match the information submitted to Cisco, or the licenses will not be valid.



Step 17: On the **First Node Configuration** page, click **Yes**.

Step 18: On the **Network Time Protocol Client Configuration** page, enter the following information, and then click **OK**.

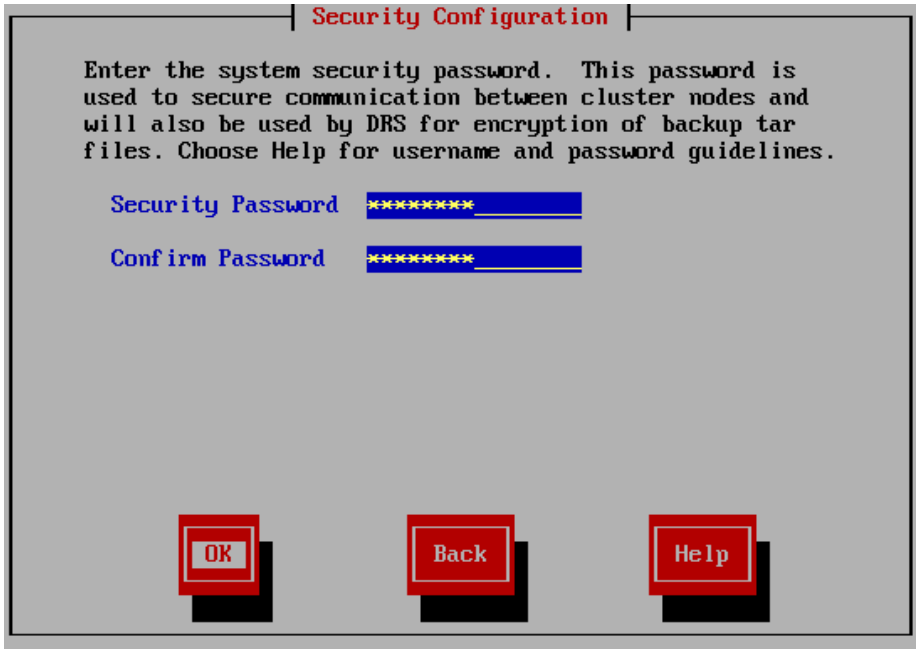
- NTP server 1—10.4.48.17



Step 19: On the **Security Configuration** page, enter the password for server-to-server communication, and then click **OK**.

Tech Tip

These passwords must match the information submitted to Cisco, or the licenses will not be valid.



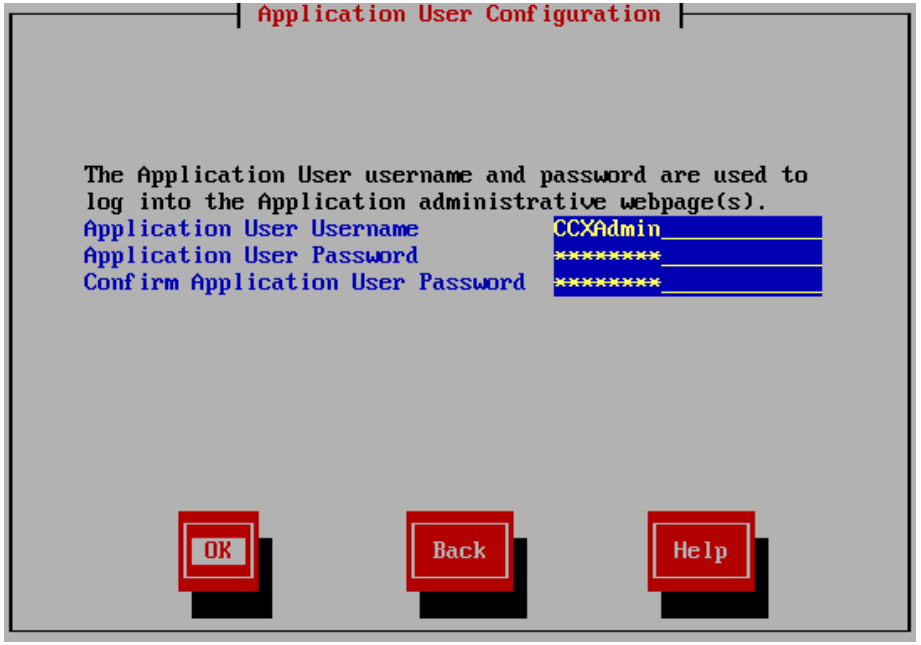
Step 20: On the **SMTP Host Configuration** page, click **No**.

Step 21: On the **Application User Configuration** page, enter the following information, and then click **OK**.

- Application User Username—CCXAdmin
- Password—[password]
- Confirm Password—[password]

Tech Tip

These values are used to initially access the Cisco Unified CCX Administration page and must match the license information submitted to Cisco. When specific users are given administrative rights during the application setup procedure, the initial user-name and password entered above will no longer work.



Step 22: On the **Platform Configuration Confirmation** page, click **OK**.

Step 23: On the **Unified CCX Deployment Type Selection** page, choose **Cisco Unified Communications Manager**, and then click **OK**.

The system will go through the rest of the installation process without user input. The system will reboot a few times during installation. The process can take 60 minutes or more, depending on your hardware.

Eventually, the server will open the command-line interface (CLI). For access to the CLI, use the administrator credentials entered on the **Administrator Login Configuration** screen in Step 15.

Step 24: If you deployed your server from a virtual template, return to the VMware vSphere client to disable the CD/DVD drive.

Step 25: From the vSphere client, navigate to the virtual machine's **Getting Started** tab, and choose **Edit virtual machine settings**.

Step 26: On the **Hardware** tab, choose **CD/DVD Drive 1**.

Step 27: Clear **Connect at power on**, and then click **OK**.

Procedure 2 Set up application administration

After the software is installed, use the web interface to complete the rest of the procedures.

Step 1: Using the web browser on your PC, access the Cisco Unified CCX Administration interface.

Step 2: In the center of the page, click the **Cisco Unified Contact Center Express** link.

Tech Tip

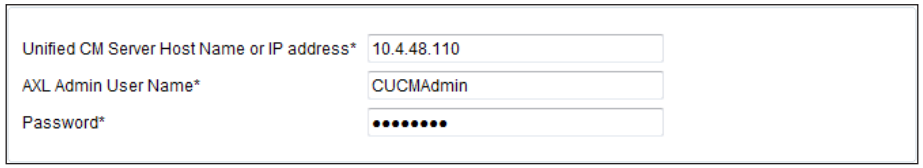
If you receive a warning about the website's security certificate, ignore it and continue to the page.

Step 3: Enter the name and password you entered on the Application User Configuration page in Step 21 of, "Install the Unified CCX platform," and then click **Login**.

Step 4: On the **Cisco Unified CCX Administrator Setup** screen, choose **Fresh Install**, and then click **Next**.

Step 5: On the **Cisco Unified CM Configuration - Service Provider Configuration** screen, enter the following information, and then click **Next**.

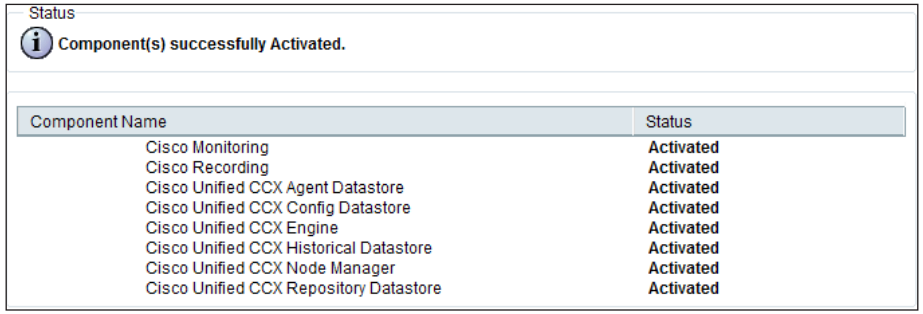
- Unified CM server IP address—10.4.48.110 (publisher)
- AXL Admin UserName—CUCMAdmin
- Password—[password] (must match the password on Cisco Unified CM)



Step 6: On the **License Information** screen, enter the location of the Unified CCX license file received from Cisco, and then click **Next**.

Step 7: After the license has been validated, click **Next**.

Step 8: After all of the components are successfully activated, click **Next**.



Step 9: On the **Publisher Activation** screen, click **Next**.

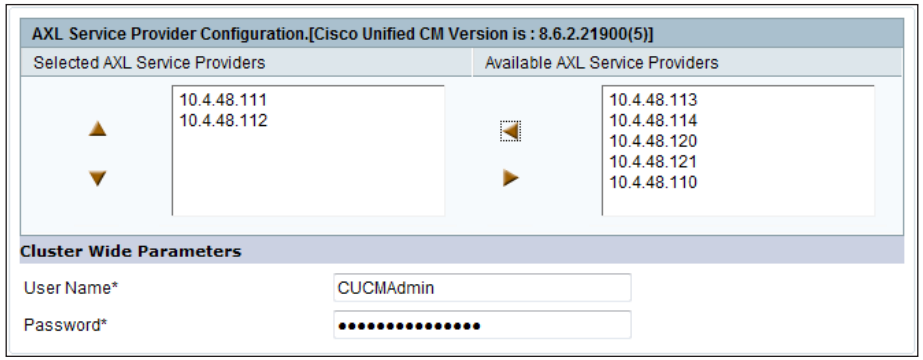
	Datastore Name	Server Name	Status
☑	Cisco Unified CCX Historical Datastore	CCX1	Not Activated
☑	Cisco Unified CCX Agent Datastore	CCX1	Not Activated
☑	Cisco Unified CCX Repository Datastore	CCX1	Not Activated

Step 10: On the **Cisco Unified CM Configuration** screen, in the AXL Service Provider Configuration section, under Selected AXL Service Providers, select the Unified CM server 10.4.48.110 (publisher), and then click the **right-facing arrow** to remove it from the list.

Step 11: Under Available AXL Service Providers, select the Unified CM servers 10.4.48.111 (subscriber 1) and 10.4.48.112 (subscriber 2), and then click the **left-facing arrow** to move them under Selected AXL Service Providers.

Step 12: In the Cluster Wide Parameters section, enter the following information:

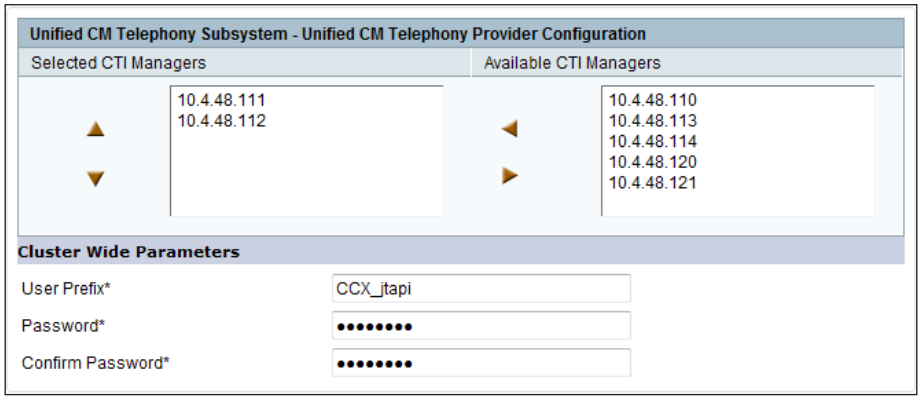
- User Name—CUCMAdmin
- Password—[password]



Step 13: In the Unified CM Telephony Subsystem - Unified CM Telephony Provider Configuration section, under Available CTI Managers, select the Unified CM servers 10.4.48.111 (subscriber 1) and 10.4.48.112 (subscriber 2), and then click the **left-facing arrow** to move them under Selected CTI Managers.

Step 14: In the Cluster Wide Parameters section, enter the following information:

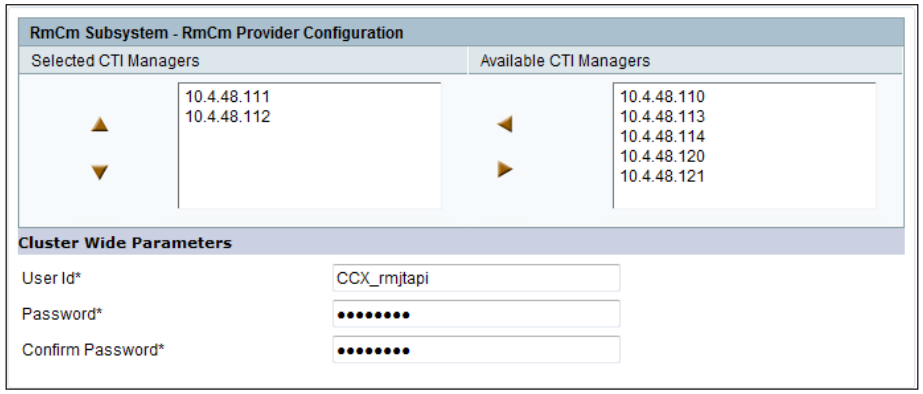
- User Prefix—CCX_jtapi
- Password—[password]
- Confirm Password—[password]



Step 15: In the RmCm Subsystem - RmCm Provider Configuration section, under Available CTI Managers, select the Unified CM servers 10.4.48.111 (subscriber 1) and 10.4.48.112 (Subscriber 2), and then click the left-facing arrow to move them under Selected CTI Managers.

Step 16: In the Cluster Wide Parameters section, enter the following information, and then click **Next**.

- User Id—CCX_rmjtapi
- Password—[password]
- Confirm Password—[password]



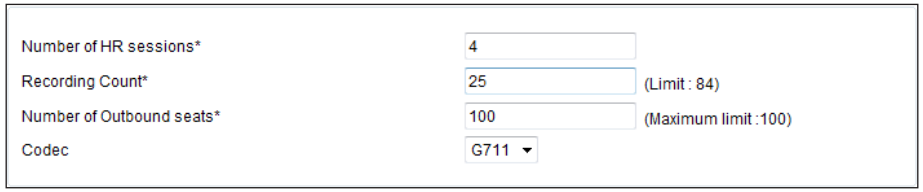
Unified CCX will send the user information to the Unified CM server, and the application users will be created automatically.

Tech Tip

For historical reporting of the number of HR sessions, use the maximum number of supervisors or administrators who will be running Unified CCX reports at the same time. For the Recording Count, enter the maximum number of concurrent ad-hoc recording sessions.

Step 17: On the **System Parameters Configuration** screen, enter the following information, and then click **Next**:

- Number of HR sessions—4
- Recording Count—25
- Number of Outbound seats—100
- Codec—G.711



Step 18: On the **Language Configuration** screen, enter the language that will be used for default IVR prompts, the Cisco Agent Desktop, and the Cisco Supervisor Desktop, and then click **Next**.

Step 19: On the Desktop Client Configuration Tool message, click **OK**.

Tech Tip

Make sure you give your own account administrator rights. After you give one of the Unified CM users administrator rights, the admin user account created during installation will not work.

Step 20: On the **User Configuration** page, select the Cisco Unified CM users who need administrative rights, click the **left-facing arrow** to move them to the Cisco Unified CCX Administrator section, and then click **Finish**.

The initial application administration setup is now complete. Please close your web browser.

Process

Configuring the Help Desk

1. Create the call control group
2. Create skills
3. Assign skills to contact service queues
4. Create resources
5. Configure the user's phone or extension
6. Assign skills to resources
7. Create the supervisors and teams
8. Create scripts and applications
9. Add a trigger
10. Associate application user with CTI
11. Create and upload the prompts
12. Verify Unified CCX Engine status

After you configure the application administration for the first time, the next task is to configure the help desk to allow the system to begin taking calls from end users.

Procedure 1 Create the call control group

A call control group creates a group of computer telephony integration (CTI) ports on Cisco Unified CM that are used to send calls to Unified CCX for IVR treatment and queuing. The call stays on the CTI port until it is sent to an agent.

Step 1: Using your web browser, access the Cisco Unified CCX Administration interface.

Step 2: In the center of the page, click the **Cisco Unified Contact Center Express** link.

Tech Tip

The account created during the installation of the server will no longer work for administering the application.

Step 3: Enter the username and password of one of the users you assigned administrative rights in Step 20 of the previous procedure, and then click **Login**.

Step 4: Navigate to **Subsystems** > **Cisco Unified CM Telephony** > **Call Control Group**, and then click **Add New**.

Step 5: Enter the following information, and then click **Add**.

- Description—Unified CM Telephony Group
- Number of CTI ports—4
- Media Termination Support—No
- Group Type—Inbound
- Device Name Prefix—CTIP
- Starting Directory Number—8009950
- Device Pool—DP_HQ1_1 (default for headquarters location)
- DN Calling Search Space—CSS_Base
- Location—Hub_None
- Partition—PAR_Base

Leave the rest of the fields at their default settings.

Procedure 2 Create skills

Create skills for each different type of call you expect to receive in the call center.

Step 1: Navigate to **Subsystems** > **RmCm** > **Skills** and click **Add New**.

Step 2: On the **Skill Configuration** screen, enter Information Technology, and then click **Save**.

Step 3: On the **Skills** search screen, click **Add New**.

Step 4: On the **Skill Configuration** screen, enter Human Resource, and then click **Save**.

Step 5: To create additional skills, repeat Step 3 and Step 4.

Procedure 3 Assign skills to contact service queues

Create contact service queues for each skill entered in the previous procedure.

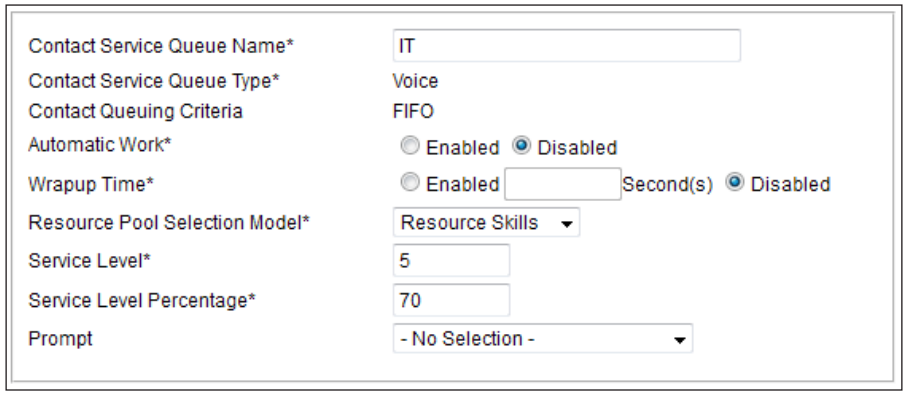
Tech Tip

The Contact Service Queue (CSQ) names created here must exactly match the queue names referenced in the application scripts which are described later in this document. The example script uses the CSQ names of **IT** and **HR**. Be sure to add these queues to the server.

Step 1: Navigate to **Subsystems** > **RmCm** > **Contact Service Queues** and click **Add New**.

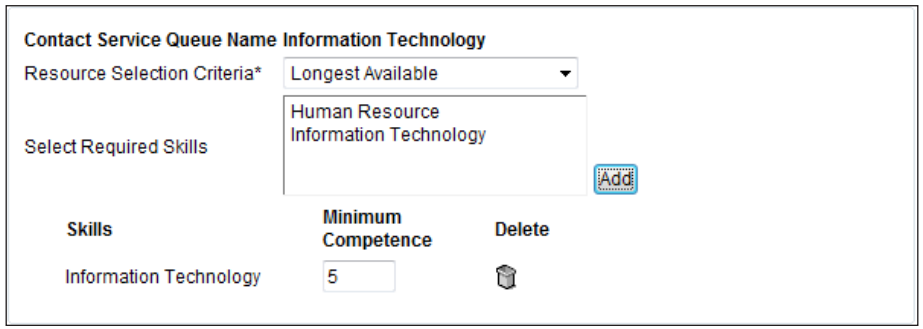
Step 2: On the first **Contact Service Queue Configuration** screen, enter the following information, and then click **Next**:

- Contact Service Queue Name—IT
- Contact Service Queue Type—Voice
- Automatic Work—Disabled
- Wrap-up Time—Disabled
- Resource Pool Selection Model—Resource Skills
- Service Level—5 (seconds)
- Service Level Percentage—70
- Prompt—No Selection



Step 3: On the second **Contact Service Queue Configuration** screen, enter the following information, and then click **Add:**

- Resource Selection Criteria—**Longest Available**
- Select Required Skills—**Information Technology** (and then next to the window, click **Add**)
- Minimum Competence—**5**



Step 4: For each additional skill, click **Add New**, and then repeat Step 2 and Step 3.

Procedure 4 Create resources

Perform the next two procedures on your Cisco Unified CM platform. First, you will assign phones to the agents and supervisors.

Step 1: From your browser, access the Unified CM Administration interface.

Step 2: In the center of the page, click the **Cisco Unified CM Administration** link.

Step 3: Enter the application administrator username and password for Unified CM, and then click **Login**.

Step 4: To locate an existing phone, navigate to **Device** > **Phone** and click **Find**.

Step 5: If the agent phone is found, click it to proceed to the next step. If the phone does not yet exist, click **Add New** to create it.

Step 6: On the **Phone Configuration** page, click **line [1]** to add Unified CCX information for the specific line on the phone.

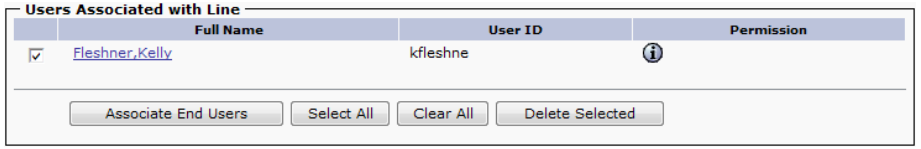
If this is a new phone, fill out the other fields on the Directory Number Configuration page that are important to your environment.

Step 7: Scroll down to the bottom of the page, and click **Associate End Users**.

Step 8: On the **Find and List Users** screen, click **Find**, and then choose the appropriate user for this line by selecting the check box next to their name.

Step 9: Click **Add Selected** and you will return to the previous page.

Step 10: Scroll down to the bottom of the **Directory Number Configuration** screen, select the check box to the left of the user's name, and then click **Save**.



Step 11: Repeat Step 4 through Step 10 for each additional agent and supervisor phone.

Procedure 5 Configure the user's phone or extension

The next set of steps associates the phone to the agent or supervisor user ID.

Step 1: Navigate to **User Management** > **End User** and click **Find**.

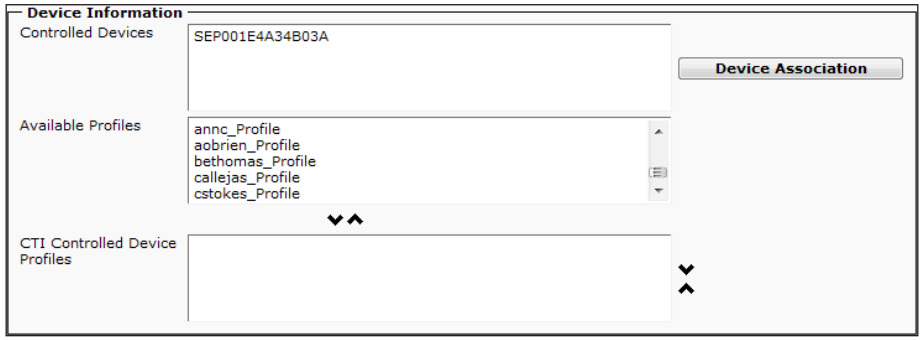
Step 2: Select the agent or supervisor from the previous procedure and click the user ID.

Step 3: On the **End User Configuration** screen, scroll down to the Device Information section, and then click **Device Association**.

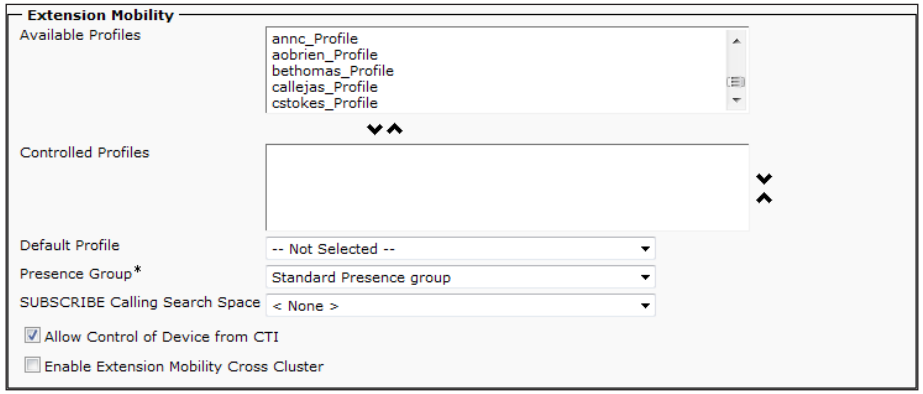
Step 4: On the **User Device Association** screen, click **Find**.

Step 5: Search for the agent device. Select the check box next to the agent's phone, and then click **Save Selected/Changes**.

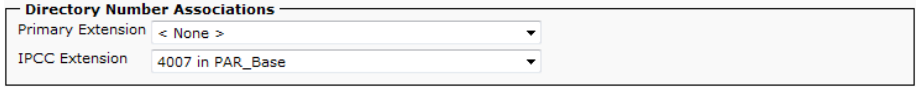
Step 6: In the upper-right corner of this page, in the Related Links drop-down list, choose **Back to User**, and then click **Go**.



Step 7: On the **End User Configuration** page, scroll down to the Extension Mobility section. Ensure that the **Allow Control of Device from CTI** check box is selected.



Step 8: Scroll down to the Directory Number Associations section, set the IPCC Extension to the agent directory number that you created in the previous procedure, and then click **Save**.



Step 9: For each additional agent or supervisor, repeat Step 2 through Step 8.

Procedure 6 Assign skills to resources

Cisco Unified CM users associated with IPCC extensions show up automatically as resources in Cisco Unified CCX. Using the resource list on the Cisco Unified CCX Administration page, you assign skills to resources, making them available to answer calls in particular Contact Service Queues (CSQs).

Step 1: Using your browser, access the Unified CCX Administration interface.

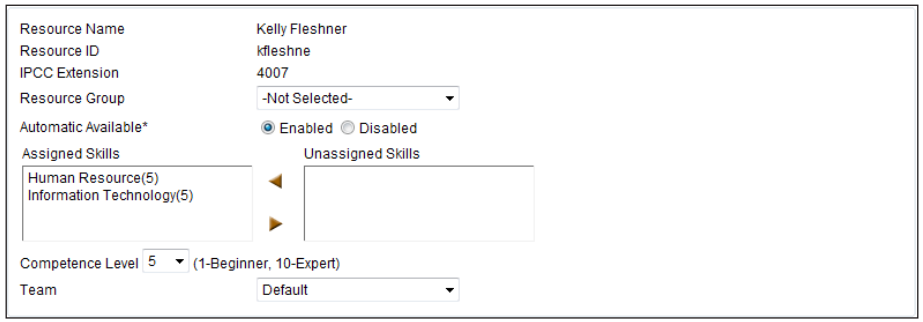
Step 2: In the center of the page, click the **Cisco Unified Contact Center Express** link.

Step 3: Enter the name and password of a user with administrative rights to Unified CCX, and then click **Login**.

Step 4: Navigate to **Subsystems > RmCm > Resources**. On the **Resources** search page, click a user under the **Resource Name**.

Step 5: On the **Resource Configuration** page, in the Unassigned Skills field, select the skill that you want to assign, and then click the **left-facing arrow** to move it to Assigned Skills.

Step 6: Select the Competence Level for the resource and click **Update**.



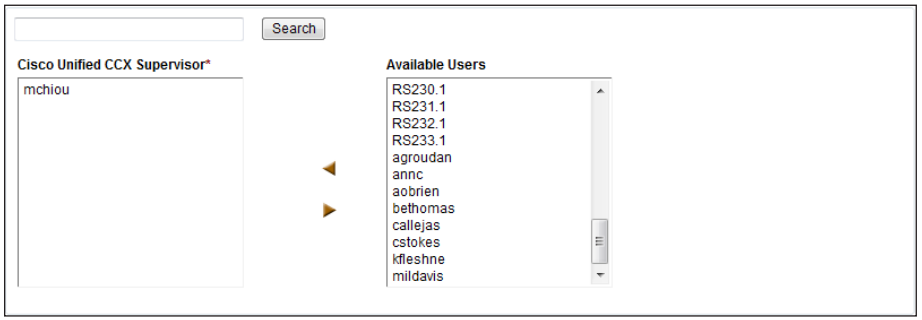
Step 7: For each additional resource, repeat Step 4 through Step 6.

Procedure 7 Create the supervisors and teams

The first step in building a team is to create a supervisor. A supervisor has a full view of a team's performance and can monitor the agents by using the Cisco Supervisor Desktop.

Step 1: Navigate to **Tools > User Management > Supervisor Capability View**.

Step 2: On the User Configuration screen, in the Available Users field, select the users you want to designate as supervisors, click the **left-facing arrow**, and then click **Update**.



Step 3: Navigate to **Subsystems > RmCm > Teams** and click **Add New**.

Step 4: On the **Team Configuration** screen, enter the following information, and then click **Save**.

- Team Name—Information Technology
- Primary Supervisor—[Supervisor]
- Assigned Resources—[Agent or supervisor]
- Assigned CSQs—Information Technology

Step 5: For each additional team, repeat Step 3 and Step 4.

Procedure 8 Create scripts and applications

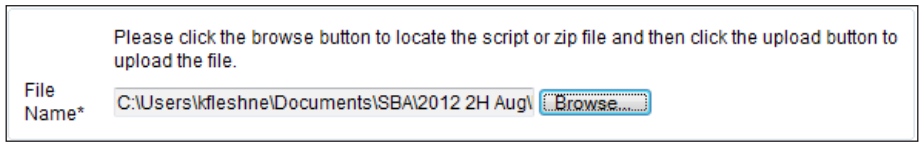
In this procedure an externally created script is uploaded to the server in order to quickly deploy the example configuration.

Reader Tip

This guide uses the example script and prompts from a zip file that is included with the document. The zip file can be found on http://www.cisco.com/go/sba/.

Step 1: Navigate to **Applications > Script Management** and click **Upload Scripts**.

Step 2: Click **Browse**, find the location of the script (scripts have the file extension .aef), and then click **Upload**.



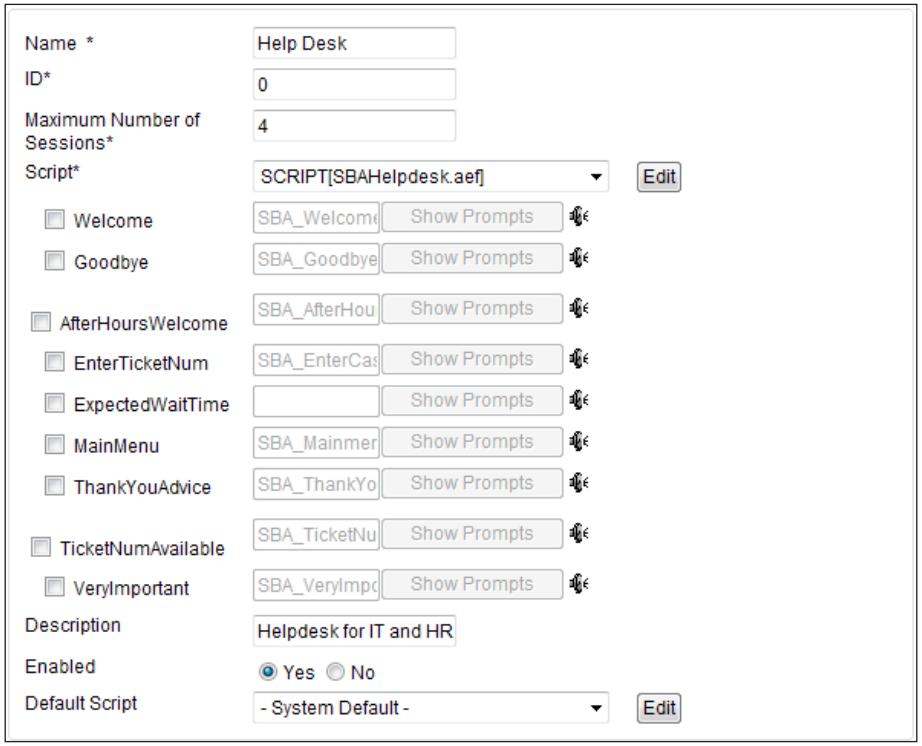
Step 3: After the script is successfully uploaded, click **Return to Script Management**.

Step 4: Navigate to **Applications** > **Application Management** and click **Add New**.

Step 5: On the **Add A New Application** screen, select **Cisco Script Application**, and then click **Next**.

Step 6: On the **Cisco Script Application** screen, enter the following information, and then click **Add**.

- Name—Help Desk
- ID—[automatic setting] (do not change this value)
- Maximum Number of Sessions—4
- Script—SCRIPT[SBAHelpdesk.aef]
- Description—Help desk for IT and HR
- Enabled—Yes
- Default Script—System Default



Procedure 9 Add a trigger

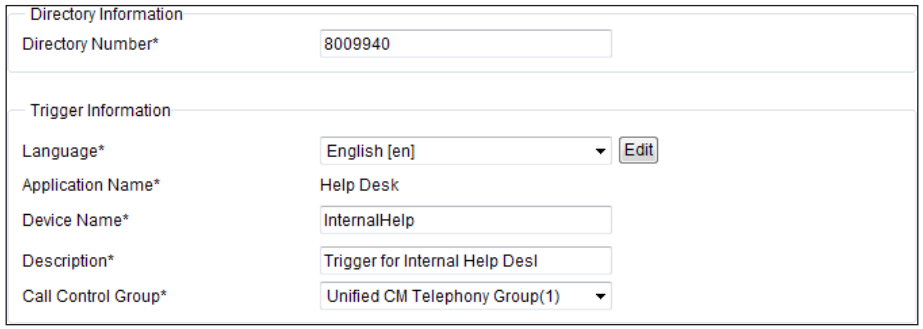
The trigger for an application is the phone number the users will dial when they want to speak with someone in the help desk.

Step 1: In the upper-left of the **Cisco Script Application** screen, click **Add New Trigger**.

Step 2: In the Trigger Type drop-down list, choose **Unified CM Telephony Trigger**, and then click **Next**.

Step 3: On the **Cisco Unified CM Telephony Trigger Configuration** screen, enter the following information:

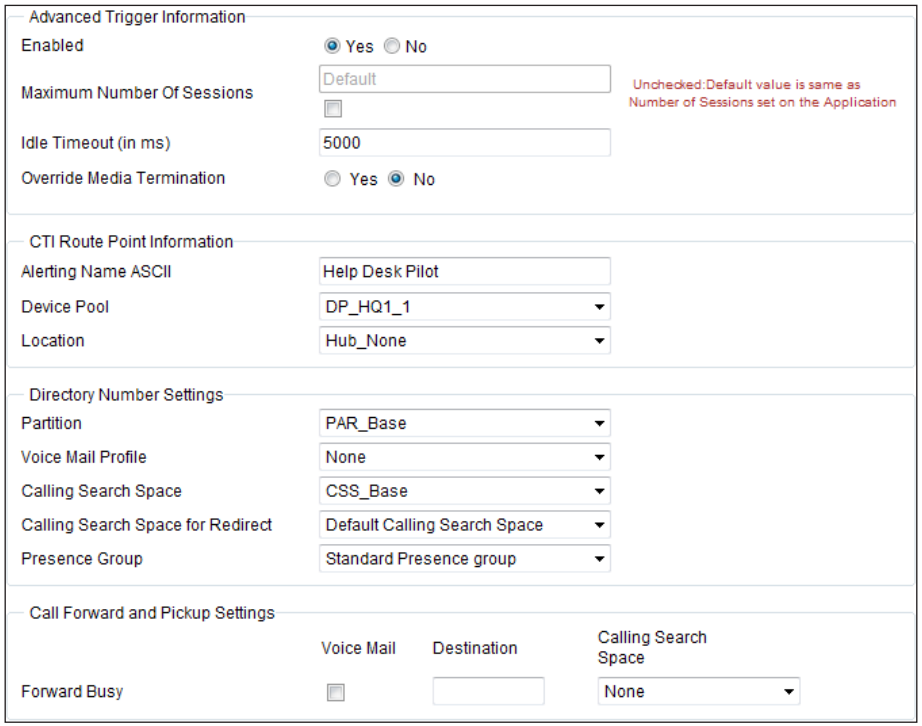
- Directory Number—8009940 (CTI Route Point that will be automatically created in Unified CM to direct calls to this application)
- Language—English (United States) [en_US]
- Device Name—InternalHelp
- Description—Trigger for Internal Help Desk
- Call Control Group—Unified CM Telephony Group(1)



Step 4: Click **Show More,** enter the following information, and then click **Add**:

- Enabled—Yes
- Maximum Number of Sessions—Default
- Idle Timeout (in ms)—5000
- Override Media Termination—No
- Alerting Name ASCII—Help Desk Pilot
- Device Pool—DP_HQ1_1 (headquarters default)
- Location—Hub_None (headquarters default)
- Partition—PAR_Base (phone default)
- Voice Mail Profile—None
- Calling Search Space—CSS_Base

Leave the rest of the fields at their defaults.



Procedure 10 Associate application user with CTI

This set of steps associates the CCX application user with the phones, CTI Route Point, and CTI Ports in Unified CM.

Step 1: From a new browser window, access the Cisco Unified CM Administration interface.

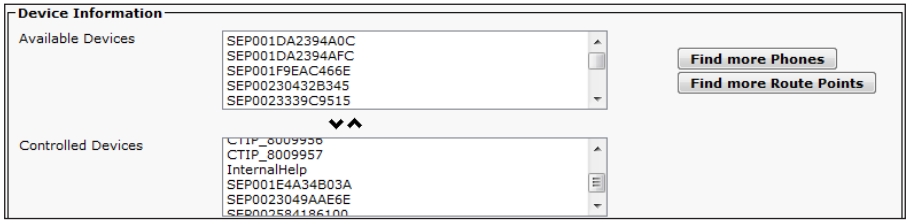
Step 2: In the center of the page, click the **Cisco Unified CM Administration** link.

Step 3: Enter the administrator username and password for Unified CM and then click **Login**.

Step 4: Navigate to **User Management** > **Application User**.

Step 5: On the **Application User** search page, click **Find,** and then select **CCX_rmjtapi.**

Step 6: On the **Application User Configuration** screen, in the **Device Information** section under **Available Devices**, select the agent and supervisor phones, the CTI ports, and the CTI route point, click the **down-facing arrow**, and then click **Save.**



Procedure 11 Create and upload the prompts

Prompts are played to the callers when they are in the application. You must record the prompts as .wav files and save them in a location reachable by the PC accessing the Cisco Unified CCX Administration page.

Reader Tip

This guide uses the example script and prompts from a zip file that is included with the document. The zip file can be found here: http://www.cisco.com/go/sba/

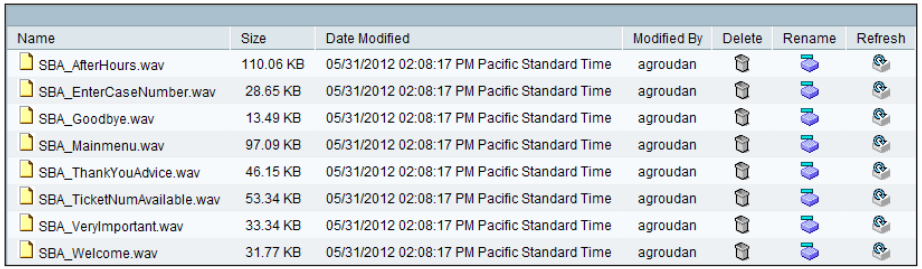
Step 1: Return to the **Cisco Unified CCX Administration** main page.

Step 2: Navigate to **Applications** > **Prompt Management**, and then click the **en_US** folder.

Step 3: After the folder opens, click **Upload Prompts**.

Step 4: Browse to the prompt WAV file, select it, and then click **Upload**.

Step 5: For each of the prompts file needed, repeat Step 3 and Step 4, and then click **Return to Prompt Management**.



Name	Size	Date Modified	Modified By	Delete	Rename	Refresh
SBA_AfterHours.wav	110.06 KB	05/31/2012 02:08:17 PM Pacific Standard Time	agroudan			
SBA_EnterCaseNumber.wav	28.65 KB	05/31/2012 02:08:17 PM Pacific Standard Time	agroudan			
SBA_Goodbye.wav	13.49 KB	05/31/2012 02:08:17 PM Pacific Standard Time	agroudan			
SBA_Mainmenu.wav	97.09 KB	05/31/2012 02:08:17 PM Pacific Standard Time	agroudan			
SBA_ThankYouAdvice.wav	46.15 KB	05/31/2012 02:08:17 PM Pacific Standard Time	agroudan			
SBA_TicketNumAvailable.wav	53.34 KB	05/31/2012 02:08:17 PM Pacific Standard Time	agroudan			
SBA_VeryImportant.wav	33.34 KB	05/31/2012 02:08:17 PM Pacific Standard Time	agroudan			
SBA_Welcome.wav	31.77 KB	05/31/2012 02:08:17 PM Pacific Standard Time	agroudan			

Step 6: Navigate to **Applications** > **Application Management**, and click the application that you created in Procedure 8, "Create scripts and applications."

Step 7: **(Optional)** If you need to change the names of the default prompts or use different prompts, select the check box next to each prompt, click **Show Prompts**, and then choose the appropriate prompt file. After they are all chosen, click **Update**.

Tech Tip

In order to make custom prompts you must be sure to format the WAV files correctly before uploading them to the server.

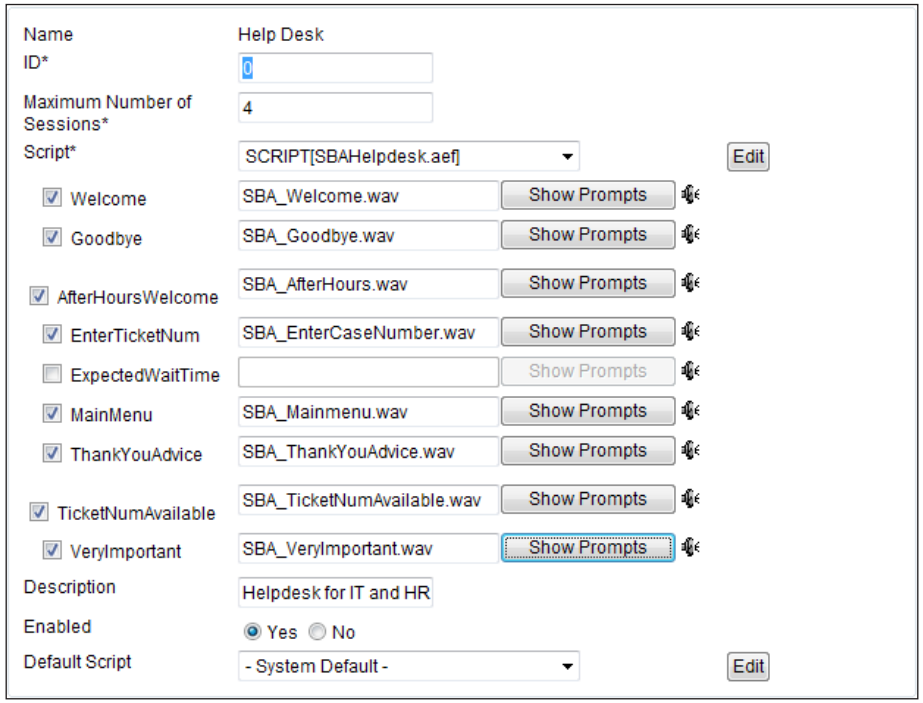
Bit Rate: 64 kbps

Audio sample size: 8 bit

Channels: 1 (mono)

Audio sample rate: 8 kHz

Audio format: CCITT u-Law



Procedure 12 Verify Unified CCX Engine status

Check the status of the server to ensure the integration with CUCM is working properly and is ready to receive calls.

Step 1: Using the **Navigation** drop down menu in the top right select **Cisco Unified CCX Serviceability** and click **Go**.

Step 2: Navigate to **Tools** > **Control Center-Network Services**.

Step 3: On the **Cisco Unified CCX Engine** line, the **Status** should read **In Service**; if this is the case configuration of the server is complete and you can skip ahead to Configuring the Client Desktop Software. If the **Status** is **Partial Service,** continue to the next step to attempt to fix the problem.

Step 4: Using the **Navigation** drop down menu in the top right select **Cisco Unified CCX Administration** and click **Go**.

Step 5: Navigate to **Subsystems** > **Cisco Unified CM Telephony** > **Data Synchronization**.

Step 6: Select **Call Control Group(s)**, **Trigger(s)**, and **CM Telephony User(s)** and click **Data Resync**.

Step 7: Repeat Step 1 thru Step 3 to recheck if Unified CCX Engine has come back into service.

Process

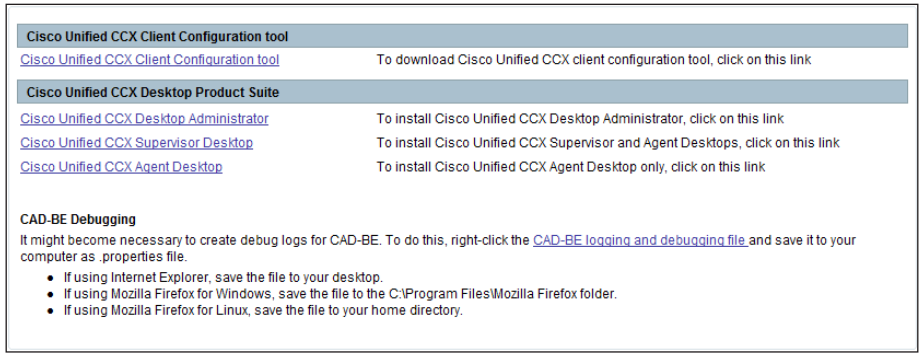
Configuring the Client Desktop Software

1. Download the client
2. Configure reason codes
3. Set up caution and warning levels

In this process, you download Cisco Agent Desktop, Cisco Supervisor Desktop, and Cisco Desktop Administrator clients from the server to a user's PC. You can download these applications to any PC that has network access to the server through the Cisco Unified CCX Administration page.

Procedure 1 Download the client

Step 1: Navigate to **Tools > Plug-ins**, and then click **Cisco Unified CCX Desktop Suites**.



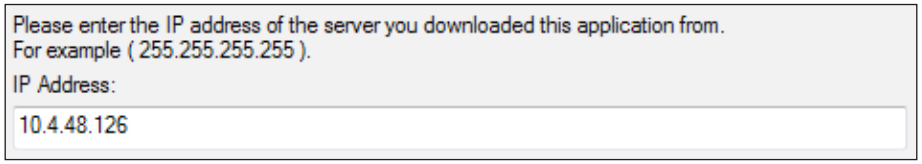
Tech Tip

Because this is the first time you're downloading the desktop applications, you must run the Cisco Unified CCX Client Configuration Tool. You only have to do this once per installation or upgrade.

Depending on the operating system and browser on your PC, you will have to answer and acknowledge several security-related prompts to download and run the tool.

Step 2: Click **Cisco Unified CCX Client Configuration Tool**.

Step 3: On the **CAD Client Configuration** screen, which may be hidden behind other windows on your PC, enter **10.4.48.126**, and then click **Next**.



The Client Configuration wizard configures the desktop applications into a format that can be downloaded by users of the system. After the wizard is finished, it returns to the download page of Unified CCX Administration. Depending on the speed of your connection to the server, this process can take up to 20 minutes to complete.

Step 4: Under Cisco Unified CCX Desktop Product Suite, click **Cisco Unified CCX Desktop Administrator**, and then follow the installation prompts.

Step 5: After installing Desktop Administrator, click the link for the type of desktop that is appropriate for this end user's role, and then follow the installation prompts.

Tech Tip

Install either the supervisor or agent desktop on a particular PC, but not both. The Supervisor Desktop installation includes both the agent and supervisor applications. The Agent Desktop installation includes only the agent application.

Procedure 2 Configure reason codes

Reason codes are used to identify the different tasks an agent may be doing before and after taking a call.

Step 1: Navigate to **Start** > **Programs** > **Cisco** > **Desktop** > **Admin**, and then click **Cisco Desktop Administrator**.

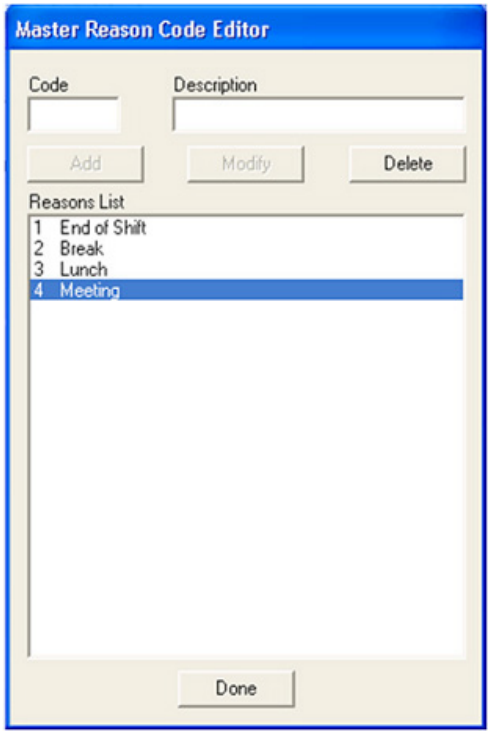
Tech Tip

The default path to the application on your hard drive is as follows: **C:\Program Files\Cisco\Desktop\bin\SplkView.exe**

Step 2: Navigate to **Call Center 1** > **Work Flow Configuration** > **Reason Codes** and click **Edit Master List**.

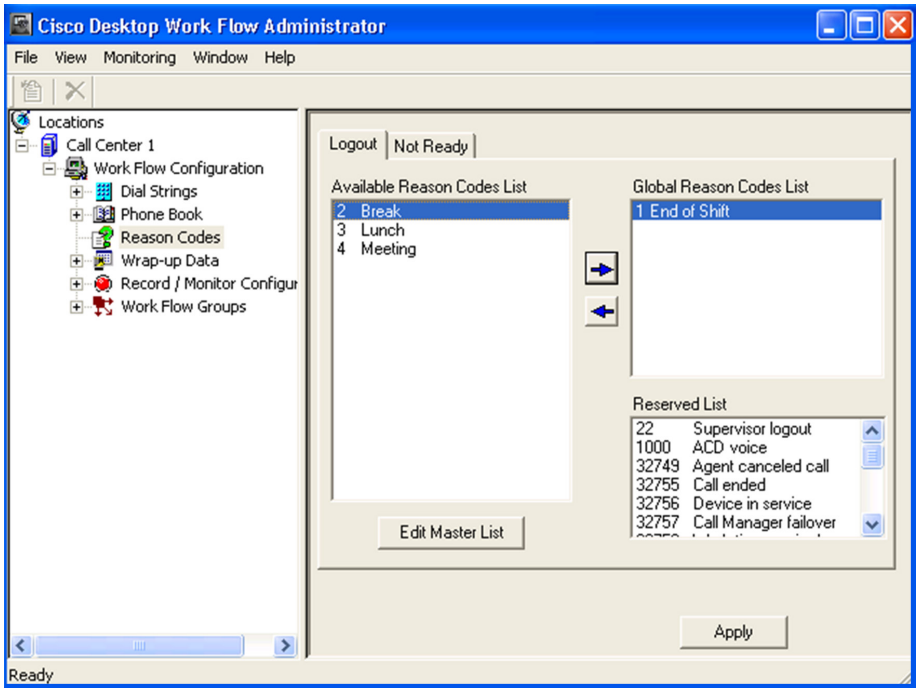
Step 3: On the **Master Reason Code Editor** page, enter the following information, and then click **Add**:

- Code—0 to 999 (Each reason must have a unique number.)
- Description—Describe the reason code.



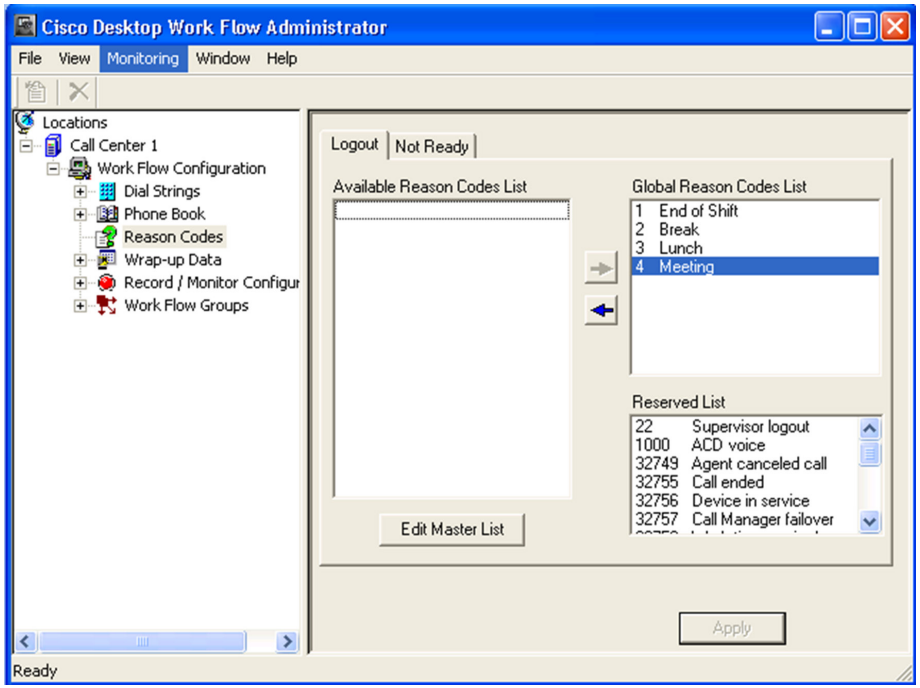
Step 4: To add more reasons, repeat Step 3, and then click **Done**.

Step 5: After you have created the master reason list, on the **Logout** tab, select the appropriate reasons for logging out, and then click the right arrow to make them available.



Step 6: On the **Not Ready** tab, select the appropriate reasons that an agent might not be ready, and then click the left arrow to make them available.

Step 7: After the Logout and Not Ready tabs are completed, click **Apply**.

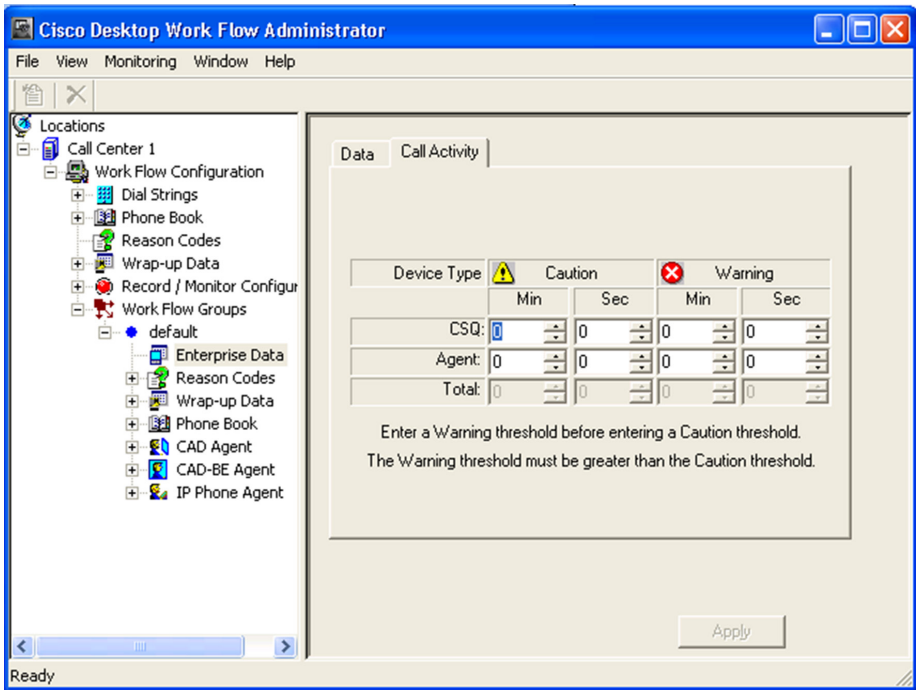


Procedure 3 Set up caution and warning levels

Caution and warning levels are thresholds set up by the administrator to let call center agents know when the call is going on longer than what is ideal for the given call center. You set the thresholds by using Cisco Desktop Workflow Administrator.

Step 1: Navigate to **Call Center 1** > **Work Flow Configuration** > **Work Flow Groups** > **default** > **Enterprise Data**.

Step 2: On the **Call Activity** tab, specify the time thresholds for the CSQ (time the caller was in queue) and agent (time the caller has been speaking to the agent), and then click **Apply**.



The baseline help desk configuration is now complete.

Notes

Appendix A: Product List

Data Center or Server Room

Functional Area	Product Description	Part Numbers	Software
Contact Center	Cisco Media Convergence Server 7845-I3 for Unified Contact Center Express up to 400 agents	MCS-7845-I3-CCXB1	8.5.1 SU3
	Cisco Media Convergence Server 7835-I3 for Unified Contact Center Express up to 100 agents	MCS-7835-I3-CCXB1	
Call Control	Cisco Media Convergence Server 7845-I3 for Unified Communications Manager up to 10,000 users	MCS7845I3-K9-CMD3A	8.6(2a)SU1
	Cisco Media Convergence Server 7835-I3 for Unified Communications Manager up to 2500 users	MCS7835I3-K9-CMD3A	
Business Edition Virtual Server	Unified CMBE6K UCS C200M2 for Unified Communications Manager up to 500 users	UCS-C200M2-BE6K	8.6(2a)SU1 ESXi 4.1
Call Control Virtual Servers	Cisco UCS C210 M2 General-Purpose Rack-Mount Server for unified communications applications	UCS-C210M2-VCD2	8.6(2a)SU1 ESXi 4.1
	Cisco UCS C200 M2 High-Density Rack-Mount Server for unified communications applications	UCS-C200M2-VCD2	
Contact Center Virtual Servers	Cisco UCS C210 M2 General-Purpose Rack-Mount Server for unified communications applications	UCS-C210M2-VCD2	8.5.1 SU3 ESXi 4.1
	Cisco UCS C200 M2 High-Density Rack-Mount Server for unified communications applications	UCS-C200M2-VCD2	

Appendix B: Changes

This appendix summarizes the changes to this guide since the previous Cisco SBA series.

- We added server scaling information for customers who need to support up to 400 agents, 42 supervisors, 150 agent groups and skill groups.
- We changed the dial plan information, to align it with new telephony integration guides. This change ensures the voice guides use a common set of extension numbers and dialing rules.
- We updated the software on the voice infrastructure equipment and the endpoints to the latest shipping versions.

Notes

Feedback

Click here to provide feedback to Cisco SBA.

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