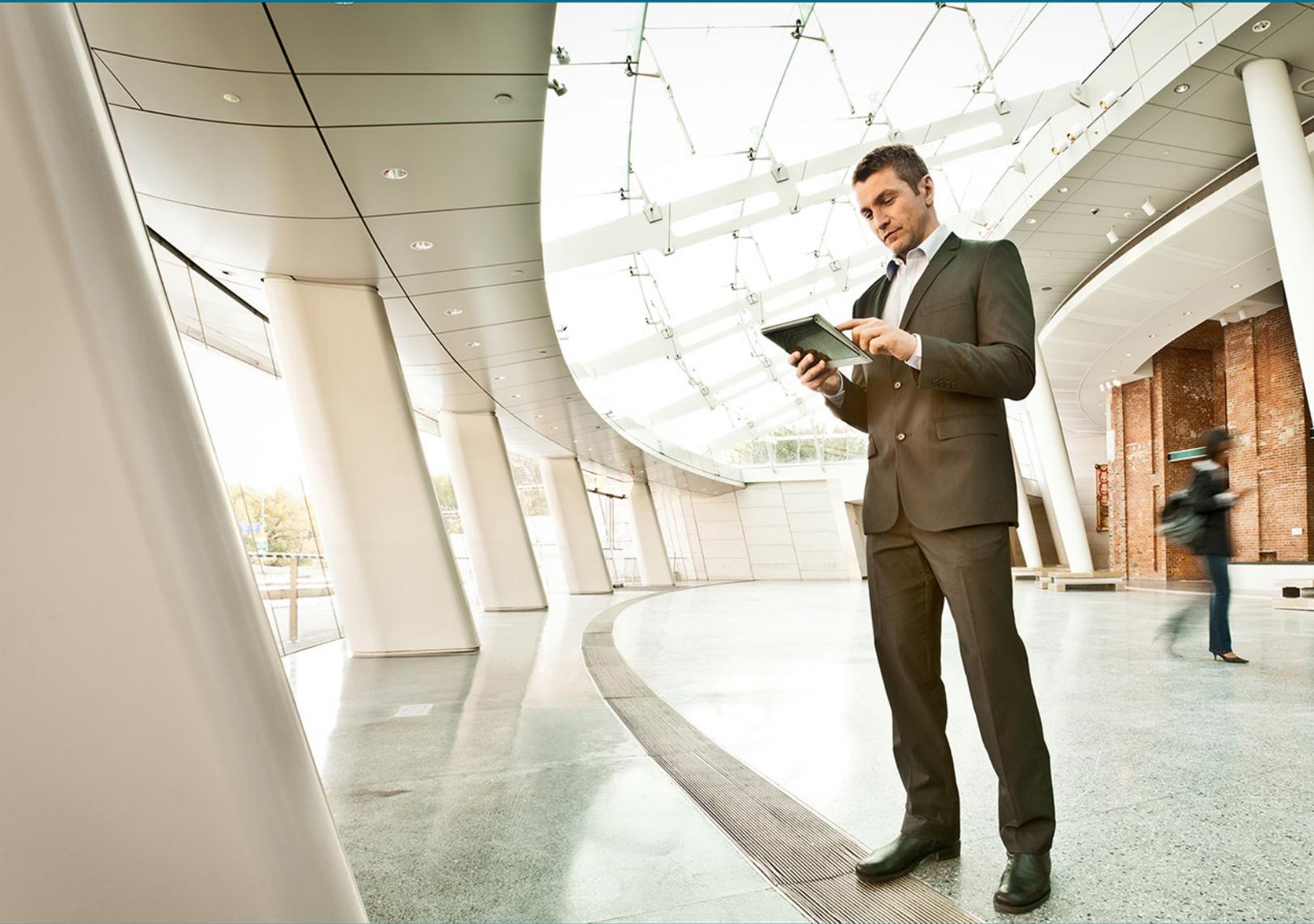




CVD



Help Desk Using Cisco UCCX

TECHNOLOGY DESIGN GUIDE

August 2013



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Preface

Cisco Validated Designs (CVDs) provide the framework for systems design based on common use cases or current engineering system priorities. They incorporate a broad set of technologies, features, and applications to address customer needs. Cisco engineers have comprehensively tested and documented each CVD in order to ensure faster, more reliable, and fully predictable deployment.

CVDs include two guide types that provide tested and validated design and deployment details:

- **Technology design guides** provide deployment details, information about validated products and software, and best practices for specific types of technology.
- **Solution design guides** integrate or reference existing CVDs, but also include product features and functionality across Cisco products and may include information about third-party integration.

Both CVD types provide a tested starting point for Cisco partners or customers to begin designing and deploying systems using their own setup and configuration.

How to Read Commands

Many CVD guides tell you how to use a command-line interface (CLI) to configure network devices. 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 at a CLI or script prompt appear as follows:

```
Router# enable
```

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

```
police rate 10000 pps burst 10000 packets conform-action set-discard-class-  
transmit 48 exceed-action transmit
```

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 [feedback form](#).

For the most recent CVD guides, see the following site:

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

CVD Navigator

The CVD Navigator helps you determine the applicability of this guide by summarizing its key elements: the use cases, the scope or breadth of the technology covered, the proficiency or experience recommended, and CVDs related to this guide. This section is a quick reference only. For more details, see the Introduction.

Use Cases

This guide addresses the following technology use cases:

- **IP-based Help Desk**—Organizations need a simple method for their employees to contact their internal support departments and an easy way to manage their help desk from a central location, without replicating costly components at their remote sites.

For more information, see the “Use Cases” section in this guide.

Scope

This guide covers the following areas of technology and products:

- Unified communications applications, such as IP telephony and contact center
- Telephony call agent
- Contact center server
- Virtualized servers
- IP telephones
- Integration of the above with LAN and data-center switching infrastructure

For more information, see the “Design Overview” section in this guide.

Proficiency

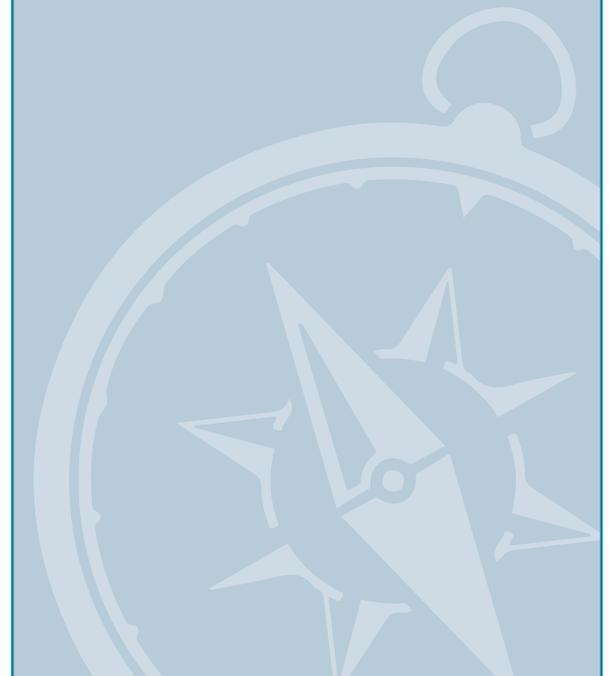
This guide is for people with the following technical proficiencies—or equivalent experience:

- **CCNP Voice**—3 to 5 years designing, installing, and troubleshooting voice and unified communications applications, devices, and networks
- **VCP VMware**—At least 6 months installing, deploying, scaling, and managing VMware vSphere environments

Related CVD Guides



Telephony Using Cisco UCM
Technology Design Guide



To view the related CVD guides,
click the titles or visit the following site:
<http://www.cisco.com/go/cvd>

Introduction

The ability to easily add functionality into the telephony environment for corporate help desks has been challenging. 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 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 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.

Technology Use Case

Organizations who need help desk functionality find it hard to justify the cost of a traditional contact center solution. Older systems typically only have one queue for calls. A person calling for human resource might end up talking to a person who specializes in information technology and would have to be transferred. Calls to traditional contact centers consume expensive dedicated PSTN circuits that are separate from the rest of an organizations incoming and outgoing trunks. These dedicated trunks have a monthly cost whether they are heavily utilized or sit idle.

Use Case: IP-based Help Desk

Organizations need a simple method for their employees to contact their internal support departments, like Human Resources and Information Technology. Users expect timely responses to their questions and problems. However, it is easy for an issue to go unresolved, forgotten, or simply fall through the cracks if not handled promptly by an available resource. The information about the user and their particular issue should be collected in real-time so an expert in the functional area can help the caller as quickly as possible. Organizations need an easy way to manage their help desk from a central location without replicating costly components at their remote sites.

This design guide enables the following capabilities:

- Simplifies deployment and management through a centralized design, while saving on infrastructure components
- Routes calls over the internal IP network, avoiding the use of expensive dedicated PSTN trunks
- Establishes multiple queues for each department so that agents can be assigned to available queues based on their skill level
- Allows agents to accept calls regardless of their physical location in the company because the phones and application are IP-based.
- Saves historical data in easy-to-read reports in order to help improve the day-to-day workings of the help desk

Design Overview

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 assigned agent is not available, the call is put into an appropriate 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.

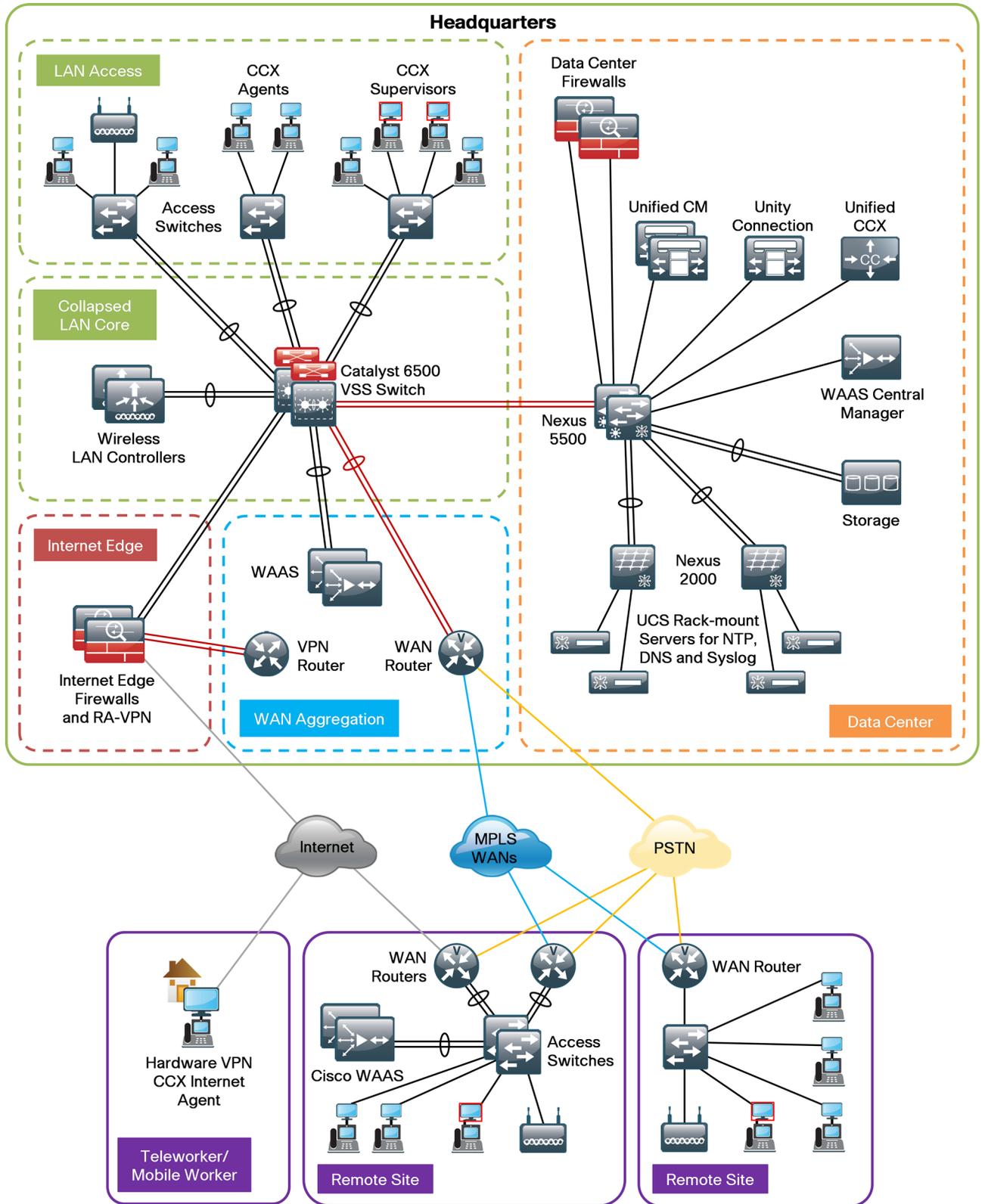
Solution Details

The IP help desk solution includes the following components (shown in Figure 1):

- Cisco Unified CCX for contact center software
- Cisco Unified CM for agent and supervisor phones
- Client software for agent and supervisor desktops
- Network Time Protocol (NTP) server for logging consistency
- Domain Name System (DNS) for name-to-IP resolution
- Syslog server for logging events (optional)

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.

Figure 1 - Help Desk using Cisco Unified CCX



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 or ISO file.

PROCESS

Preparing the Platform for Unified CCX

1. Configure platform connectivity to the LAN
2. Prepare the server for Unified CCX

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

- Download the Open Virtualization Archive (OVA) file from the Cisco website:
<http://software.cisco.com/download/release.html?mdfid=284666782&flowid=38602&softwareid=283733053&release=2.3&relind=AVAILABLE&rellifecycle=&reltype=latest>
- Determine if there is a patch for your version of Cisco Unified CCX by checking the Cisco website:
[http://software.cisco.com/download/release.html?mdfid=284666782&flowid=38602&softwareid=280840578&release=9.0\(2\)&relind=AVAILABLE&rellifecycle=&reltype=latest](http://software.cisco.com/download/release.html?mdfid=284666782&flowid=38602&softwareid=280840578&release=9.0(2)&relind=AVAILABLE&rellifecycle=&reltype=latest)

Procedure 1

Configure platform connectivity to the LAN

The Cisco Unified Contact Center Express server can be connected to a Cisco Nexus switch in the data center or a Cisco Catalyst switch in the server room. In both cases, QoS policies are added to the ports to maintain voice quality during the setup and completion of calls. Please choose the option that is appropriate for your environment.

Option 1: Connect Cisco Unified CCX to a Nexus 2248UP

Step 1: Login to the Nexus switch with a username that has the ability to make configuration changes.

Step 2: If there is a previous configuration on the switch port where the Unified CCX is connected, remove the individual commands by issuing a **no** in front of each one to bring the port back to its default state.

Step 3: Configure the port as an access port and apply the QoS policy.

```
interface Ethernet107/1/18
description Unified Contact Center Express
switchport access vlan 148
spanning-tree port type edge
service-policy type qos input DC-FCOE+1P4Q_INTERFACE-DSCP-QOS
```



Tech Tip

When deploying a dual-homed Cisco Nexus 2248, you must apply this configuration to both Nexus 5548s.

Option 2: Connect Cisco Unified CCX to a Catalyst 3750-X

To ensure that signaling traffic is prioritized appropriately, you must configure the Cisco Catalyst access switch port where Cisco Unified CCX is connected to trust the Differentiated Services Code Point (DSCP) markings. The easiest way to do this is to clear the interface of any previous configuration and then apply the egress QoS macro that was defined in the access-switch platform configuration of the [Campus Wired LAN Design Guide](#).

Step 1: Login to the Catalyst switch with a username that has the privileges to make configuration changes.

Step 2: Clear the interface's configuration on the switch port where the Unified CCX is connected.

```
default interface GigabitEthernet1/0/18
```

Step 3: Configure the port as an access port and apply the Egress QoS policy.

```
interface GigabitEthernet1/0/18
  description Unified Contact Center Express
  switchport access vlan 148
  switchport host
  macro apply EgressQoS
```

Procedure 2

Prepare the server for Unified CCX

The following table describes the scaling options for Cisco Unified CCX:

Table 1 - Cisco Unified CCX virtual machine scaling options

	100 agents	300 agents	400 agents
Virtual CPUs	2	2	4
CPU speed	900 MHz	900 MHz	900 MHz
RAM	4	4	8
Hard disk	146 GB (1)	146 GB (2)	146 GB (2)
VMware ESXi	4.0, 4.1, 5.0	4.0, 4.1, 5.0	4.0, 4.1, 5.0
OS support	RHE Linux 5 (32-bit)	RHE Linux 5 (32-bit)	RHE Linux 5 (32-bit)
Total agents	100 or fewer	100 to 300	300 to 400

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.

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 page, 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 Storage page, choose the location to store the VM files, and then click **Next**.
- On the Disk Format page, choose **Thick Provision Eager Zeroed**, and then click **Next**.
- On the Ready to Complete page, verify the settings, and then click **Finish**. In the message window, click **Close**.

When you click Finish, the deployment task will be started.

Deployment settings:

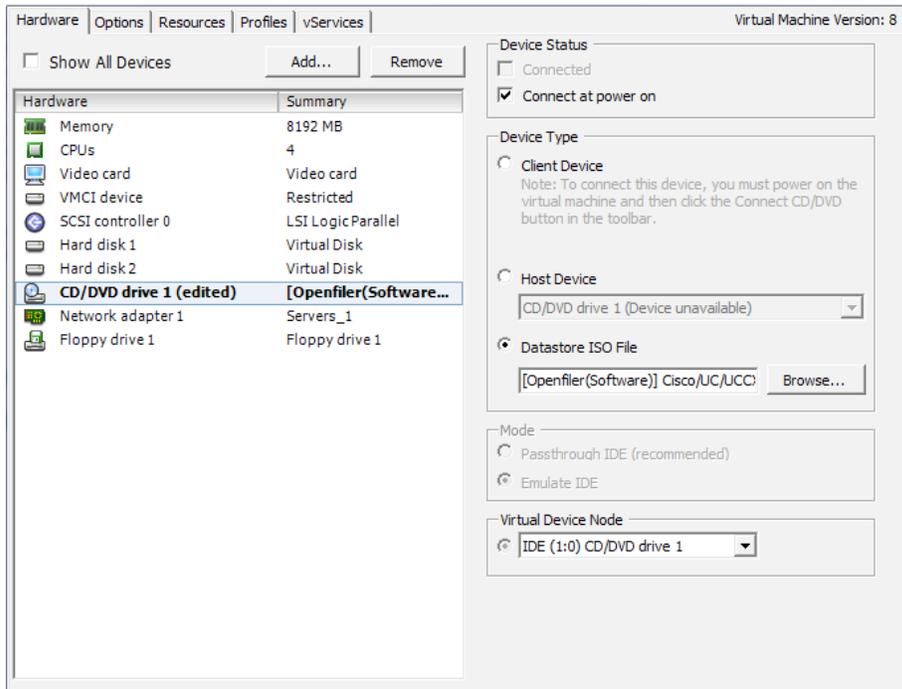
OVF file:	C:\Users\kfleshne\Documents\SBA\2013 1H Feb\06 Help...
Download size:	95.5 KB
Size on disk:	292.0 GB
Name:	CCX1
Folder:	10k
Deployment Configuration:	UCCX 400 Agent
Host/Cluster:	chas2-s3.cisco.local
Datastore:	chas2-s3-local
Disk provisioning:	Thick Provision Eager Zeroed
Network Mapping:	"eth0" to "Servers_1"

Power on after deployment

Step 6: After the virtual machine is created, click the server name: **CCX1**, navigate to the Getting Started tab, and then choose **Edit virtual machine settings**.

Step 7: On the Hardware tab, click **CD/DVD Drive 1**, and then select the **Connect at power on** check box.

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



Step 9: On the Getting Started tab, choose **Power on the virtual machine**.

Step 10: Click the **Console** tab and then watch the server boot.

The virtual machine is prepared for installation.

Installing Cisco Unified CCX

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

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:

- In DNS, configure the Cisco Unified CCX host name: **CCX1**
- Obtain license files from the Cisco licensing system.

Procedure 1 Install the Unified CCX platform

After the ISO/DVD loads, continue the installation on the server console.

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

Step 2: If the media check is successful, choose **OK**.

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 3: On the Product Deployment Selection page, verify the product is Cisco Unified Contact Center Express, and then choose **OK**.

Step 4: On the Proceed with Install page, verify that the version is correct, and then choose **Yes**.

Step 5: On the Platform Installation Wizard page, choose **Proceed**.

Step 6: If no upgrade patch exists for the version you are installing, on the Apply Patch page, choose **No**.

If an upgrade patch does exist, on the Apply Patch page, choose **Yes**, and then follow the instructions to complete the process.

Step 7: On the Basic Install page, choose **Continue**.

Step 8: On the Timezone Configuration page, select the correct time zone for the server location, and then choose **OK**.

Step 9: On the Auto Negotiation Configuration page, choose **Continue**.

Step 10: On the MTU Configuration page, choose **No**.

Step 11: On the Static Network Configuration page, enter the following information, and then choose **OK**.

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

Step 12: On the DNS Client Configuration page, enter the following information, and then choose **OK**.

- Primary DNS—**10.4.48.10**
- Domain—**cisco.local**

Step 13: On the Administrator Login Configuration page, enter the following information, and then choose **OK**.

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

Step 14: On the Certificate Information page, enter the information that will be used to generate security certificates, and then choose **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 15: On the First Node Configuration page, choose **Yes**.

Step 16: On the Network Time Protocol Client Configuration page, enter the following information, and then choose **OK**.

- NTP server 1—**10.4.48.17**

Step 17: On the Security Configuration page, enter the password for server-to-server communication, and then choose **OK**.



Tech Tip

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

Step 18: On the SMTP Host Configuration page, choose **No**.

Step 19: On the Application User Configuration page, enter the following information, and then choose **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 username and password entered above will no longer work.

Step 20: On the Platform Configuration Confirmation page, choose **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.

After the software has finished installing, the login prompt appears on the console.

Step 21: From the vSphere client, navigate to the virtual machine's Getting Started tab, and choose **Edit virtual machine settings**.

Step 22: On the Hardware tab, choose **CD/DVD Drive 1**.

Step 23: Clear **Connect at power on**, and then click **OK**.

Procedure 2

Set up application administration

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

Step 1: With your web browser, access the IP address or hostname of the Cisco Unified CCX server and in the center of the page, click **Cisco Unified Contact Center Express**.



Tech Tip

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

Step 2: Enter the name and password you entered on the Application User Configuration page in Step 19 of the “Install the Unified CCX platform” procedure, and then click **Login**.

Step 3: On the Cisco Unified CCX Administrator Setup page, choose **Fresh Install**, and then click **Next**.

Step 4: On the Cisco Unified CM Configuration - Service Provider Configuration page, 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 5: On the License Information page, click Browse, locate the Unified CCX license file received from Cisco, click **Open**, and then click **Next**.

Enter a license or zip file name

License File*

Step 6: After the license validation is completed, click **Next**.

Step 7: After all of the components are successfully activated, click **Next**.

Status	
 Component(s) successfully Activated.	
Component Name	Status
Cisco Monitoring	Activated
Cisco Recording	Activated
Cisco Unified CCX Agent Datastore	Activated
Cisco Unified CCX Config Datastore	Activated
Cisco Unified CCX Engine	Activated
Cisco Unified CCX Historical Datastore	Activated
Cisco Unified CCX Node Manager	Activated
Cisco Unified CCX Repository Datastore	Activated

Step 8: On the Publisher Activation page, click **Next**.

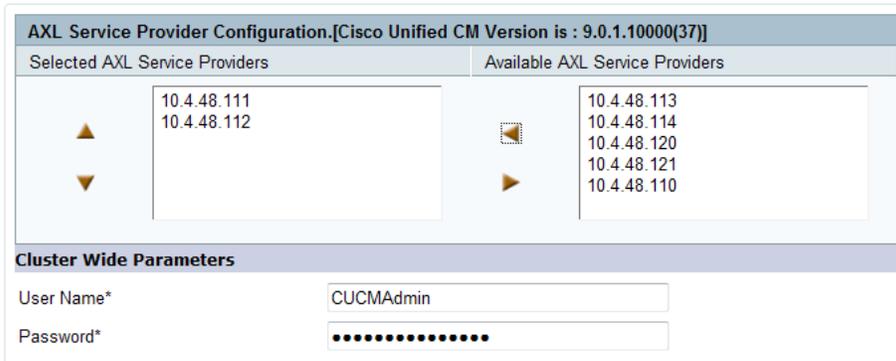
	Datastore Name	Server Name	Status
<input checked="" type="checkbox"/>	Cisco Unified CCX Historical Datastore	CCX1	Not Activated
<input checked="" type="checkbox"/>	Cisco Unified CCX Agent Datastore	CCX1	Not Activated
<input checked="" type="checkbox"/>	Cisco Unified CCX Repository Datastore	CCX1	Not Activated

Step 9: On the Cisco Unified CM Configuration page, 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 10: 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 11: In the Cluster Wide Parameters section, enter the following information:

- User Name—**CUCMAdmin**
- Password—**[password]**



AXL Service Provider Configuration.[Cisco Unified CM Version is : 9.0.1.10000(37)]

Selected AXL Service Providers	Available AXL Service Providers
10.4.48.111 10.4.48.112	10.4.48.113 10.4.48.114 10.4.48.120 10.4.48.121 10.4.48.110

Cluster Wide Parameters

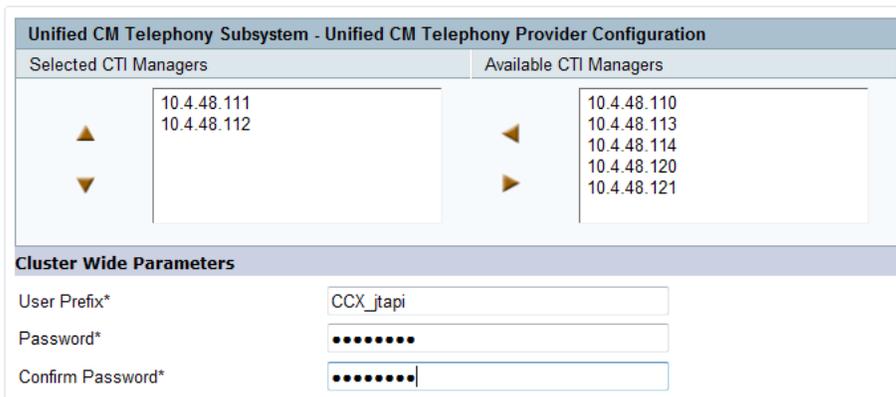
User Name*

Password*

Step 12: 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 13: In the Cluster Wide Parameters section, enter the following information:

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



Unified CM Telephony Subsystem - Unified CM Telephony Provider Configuration

Selected CTI Managers	Available CTI Managers
10.4.48.111 10.4.48.112	10.4.48.110 10.4.48.113 10.4.48.114 10.4.48.120 10.4.48.121

Cluster Wide Parameters

User Prefix*

Password*

Confirm Password*

Step 14: 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 15: In the Cluster Wide Parameters section, enter the following information, and then click **Next**.

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

RmCm Subsystem - RmCm Provider Configuration

Selected CTI Managers	Available CTI Managers
10.4.48.111 10.4.48.112	10.4.48.110 10.4.48.113 10.4.48.114 10.4.48.120 10.4.48.121

Cluster Wide Parameters

User Id*

Password*

Confirm Password*

Cisco Unified CCX sends the user information to the Unified CM server, and the application users are created automatically.

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

The G.711 codec choice requires one of the following choices for calls that do not originate from the same region and location as the Cisco Unified CCX server:

- Transcoders must be configured in Cisco Unified CM and added to the media resource group list at the Cisco Unified CCX site in order to allow contact center calls to and from the remote sites.
- The regions must allow 64 kbps as the maximum audio bit rate between their site and the Cisco Unified CCX site for the contact center calls.

If one of these two options is not completed, contact center calls from remote sites will experience a fast-busy tone when calling the main pilot number for Unified CCX.

Step 16: On the System Parameters Configuration page, enter the following information, and then click **Next**:

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

Number of HR sessions*

Recording Count* (Limit : 84)

Number of Outbound seats* (Maximum limit : 100)

Codec

Step 17: On the Language Configuration page, enter the language that will be used for default IVR prompts, the Cisco Agent Desktop, and the Cisco Supervisor Desktop, and then click **Next**.

Language Group	Group Default
English	<input type="radio"/>
en_AU	<input type="radio"/>
en_CA	<input type="radio"/>
en_GB	<input type="radio"/>
en_US	<input checked="" type="radio"/>

CAD/CSD Language configuration

CAD/CSD Language* English

Step 18: On the Desktop Client Configuration Tool message, click **OK**.

Step 19: 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**.

Please add or remove the Administrators from the following list:

Cisco Unified CCX Administrator*

- kflashne
- mchiou
- ggudgin

Cisco Unified CM Users

- agroudan
- alexreed
- annc
- aobrien
- bethomas
- callejas
- chambers
- cstokes
- ddaum
- dlape
- fcaldero
- gbmoore
- jbooth

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

Configuring the Help Desk

1. Create the call control group
2. Create skills
3. Assign skills to contact service queues
4. Associate a phone to an agent user ID
5. Associate user ID to a phone or profile
6. Assign skills to resources
7. Create the supervisors and teams
8. Create scripts and applications
9. Add a trigger
10. Associate Unified CCX application user
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: Access the IP address or hostname of the Cisco Unified CCX server by using your web browser and then, in the center of the page, click **Cisco Unified Contact Center Express**.



Tech Tip

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

Step 2: Enter the username and password of one of the users you assigned administrative rights in Step 19 of the previous procedure, and then click **Login**.

Step 3: Navigate to **Subsystems > Cisco Unified CM Telephony > Call Control Group**, and then click **Add New**.

Step 4: 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 page, enter **IT**, and then click **Save**.

Skill Name* <input type="text" value="IT"/>
--

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

Step 4: On the Skill Configuration page, enter **HR**, 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 page, 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**

Contact Service Queue Name*	<input type="text" value="IT"/>
Contact Service Queue Type*	Voice
Contact Queuing Criteria	FIFO
Automatic Work*	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled
Wrapup Time*	<input type="radio"/> Enabled <input type="text" value=""/> Second(s) <input checked="" type="radio"/> Disabled
Resource Pool Selection Model*	<input type="text" value="Resource Skills"/>
Service Level*	<input type="text" value="5"/>
Service Level Percentage*	<input type="text" value="70"/>
Prompt	<input type="text" value="- No Selection -"/>

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

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

Contact Service Queue Name IT		
Resource Selection Criteria*	<input type="text" value="Longest Available"/>	
Select Required Skills	<input type="text" value="HR
IT"/>	
		<input type="button" value="Add"/>
Skills	Minimum Competence	Delete
IT	<input type="text" value="5"/>	

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

Procedure 4 Associate a phone to an agent user ID

There are two ways to associate agents and supervisors with a phone. You can use extension mobility to allow agents to log in to a Cisco IP phone or you can associate an agent's Cisco Unified CM user ID directly with a phone. Both options can be used for the same Cisco Unified CCX installation. Choose extension mobility if your agents move around from day to day or if you have more than one shift and the same phone will be used by multiple agents. Choose the phone association method if the agents work from the same phone every day.

Step 1: Use your web browser to access the IP address or hostname of the Cisco Unified CM publisher and then, in the center of the page, click **Cisco Unified CM Administration**.

Step 2: Enter the application administrator username and password for Cisco Unified CM, and then click **Login**.

Perform the next several steps only if you are planning to associate agents directly to a phone. If you will use extension mobility exclusively with your agents, you can skip to the next procedure.

Step 3: Navigate to **Device > Phone**, click **Find**, and then click the name of the agent's phone.

Step 4: On the Phone Configuration page, click **line [1]**. This adds the Cisco Unified CCX information for the specific line on the phone.

Step 5: Scroll down to the bottom of the page, and then click **Associate End Users**.

Step 6: On the Find and List Users page, click **Find**, and then choose the agent for this line by selecting the check box next to their name.

Step 7: Click **Add Selected**. You return to the previous page.

Users Associated with Line			
	Full Name	User ID	Permission
<input type="checkbox"/>	Fleshner,Kelly	kfleshne	

Step 8: Repeat Step 3 through Step 7 for each additional agent and supervisor phone using each agent's and supervisor's specific information.

Procedure 5 Associate user ID to a phone or profile

In this procedure, you associate the agent and supervisor user ID to a phone or extension mobility profile. Please choose one or both of the following options:

- If you are associating agents with phones, follow the steps in Option 1 "Phone association."
- If your agents will use extension mobility to login to their phones, follow the steps in Option 2 "Extension mobility association."

Option 1: Phone association

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

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

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

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

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

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

The screenshot shows the 'Device Information' section of a configuration page. It includes three main areas: 'Controlled Devices' with a text field containing 'SEPB4A4E3284488'; 'Available Profiles' with a list box containing 'agroudan_Profile', 'alexreed_Profile', 'annc_Profile', 'aobrien_Profile', and 'bethomas_Profile'; and 'CTI Controlled Device Profiles' with an empty list box. On the right side, there are two buttons: 'Device Association' and 'Line Appearance Association for Presence'.

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

The screenshot shows the 'Extension Mobility' section. It features several fields: 'Available Profiles' (list box with 'agroudan_Profile', 'alexreed_Profile', 'annc_Profile', 'aobrien_Profile', 'bethomas_Profile'), 'Controlled Profiles' (list box with 'kfleshne_Profile'), 'Default Profile' (dropdown menu with 'kfleshne_Profile'), 'BLF Presence Group*' (dropdown menu with 'Standard Presence group'), and 'SUBSCRIBE Calling Search Space' (dropdown menu with '< None >'). At the bottom, there are two checkboxes: 'Allow Control of Device from CTI' (checked) and 'Enable Extension Mobility Cross Cluster' (unchecked).

Step 8: Scroll down to the Directory Number Associations section, set the IPCC Extension to the phone's directory number from the previous procedure, and then click **Save**.

The screenshot shows the 'Directory Number Associations' section. It contains two rows: 'Primary Extension' with a dropdown menu showing '81004007 in PAR_Base', and 'IPCC Extension' with a dropdown menu showing '8000027 in PAR_Base'.

Step 9: For each additional agent or supervisor using phone association, repeat Step 1 through Step 8 using their specific information.

Option 2: Extension mobility association

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

Step 2: Select the agent or supervisor, and then click the user ID.

Step 3: On the End User Configuration page, scroll down to the Device Information section, select the agents profile from the Available Profiles: **jbooth_Profile**, and then click the **Down-Arrow** icon to move it into the CTI Controlled Device Profiles.

The screenshot shows the 'Device Information' section of a configuration page. It features three main areas: 'Controlled Devices' (empty), 'Available Profiles' (a list box containing 'mdebeer_Profile', 'mildavis_Profile', 'mkranz_Profile', 'mwilgus_Profile', and 'nadamo_Profile'), and 'CTI Controlled Device Profiles' (a list box containing 'jbooth_Profile'). A 'Device Association' button is located above the 'Line Appearance Association for Presence' section. Arrows indicate the movement of profiles between the available and controlled lists.

Step 4: Scroll down to the Extension Mobility section, and then confirm the **Allow Control of Device from CTI** check box is selected.

The screenshot shows the 'Extension Mobility' section. It includes 'Available Profiles' (a list box with 'agroudan_Profile', 'alexreed_Profile', 'annc_Profile', 'aobrien_Profile', and 'bethomas_Profile'), 'Controlled Profiles' (a list box with 'jbooth_Profile'), 'Default Profile' (a dropdown menu with 'jbooth_Profile'), 'BLF Presence Group*' (a dropdown menu with 'Standard Presence group'), and 'SUBSCRIBE Calling Search Space' (a dropdown menu with '< None >'). At the bottom, there are two checkboxes: 'Allow Control of Device from CTI' (checked) and 'Enable Extension Mobility Cross Cluster' (unchecked).

Step 5: Scroll down to the Directory Number Associations section, set the IPCC Extension to the agent's extension mobility number, and then click **Save**.

The screenshot shows the 'Directory Number Associations' section. It contains two dropdown menus: 'Primary Extension' and 'IPCC Extension', both set to '82114120 in PAR_Base'.

Step 6: For each additional agent or supervisor using extension mobility association, repeat Step 1 through Step 5 using their specific information.

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: Use your web browser to access the IP address or hostname of the Cisco Unified CCX server and then, in the center of the page, click **Cisco Unified Contact Center Express**.

Step 2: Enter the name and password of a user with administrative rights to Cisco Unified CCX, and then click **Login**.

Step 3: Navigate to **Subsystems > RmCm > Resources**. On the Resources search page, click a user under the **Resource Name**.

Step 4: 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 5: Select the Competence Level for the resource, and then click **Update**.

The screenshot shows the Resource Configuration page for a resource named Kelly Fleshner. The fields are as follows:

Resource Name	Kelly Fleshner
Resource ID	kfleshne
IPCC Extension	8000027
Resource Group	-Not Selected-
Automatic Available*	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled
Assigned Skills	Unassigned Skills
HR(5)	IT
Competence Level	5 (1-Beginner, 10-Expert)
Team	Default

Step 6: For each additional resource, repeat Step 3 through Step 5, using the appropriate information for each agent.

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 page, in the Available Users field, select the users you want to designate as supervisors, click the left-facing arrow, and then click **Update**.

The screenshot shows a user configuration interface. At the top, there is a search bar with a 'Search' button. Below it, there are two main sections: 'Cisco Unified CCX Supervisor*' and 'Available Users'. The 'Cisco Unified CCX Supervisor*' section contains a text box with the name 'mchiou'. The 'Available Users' section is a list box containing the following names: RS230.1, RS231.1, RS232.1, RS233.1, agroudan, anncc, aobrien, bethomas, callejas, cstokes, kfleshner, and mildavis. Between the two sections are two arrows: a left-facing arrow pointing from the 'Available Users' list to the 'Cisco Unified CCX Supervisor' field, and a right-facing arrow pointing from the 'Available Users' list to the right.

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

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

- Team Name—**IT**
- Primary Supervisor—**[Supervisor]**
- Assigned Resources—**[Agent or supervisor]**
- Assigned CSQs—**IT**

The screenshot shows the 'Team Configuration' page for a team named 'IT'. The 'Team Name*' field is set to 'IT'. The 'Primary Supervisor' dropdown menu is set to 'Ming Chiou'. There are four sections for assigning resources, each with a list of available resources and a list of assigned resources. The 'Secondary Supervisors' section is empty. The 'Assigned Resources' section has 'Miles Davis' and 'Ming Chiou' assigned. The 'Assigned CSQs' section has 'IT' assigned. The 'Available Supervisors' section has 'Graham Gudgin' available. The 'Available Resources' section has 'Kelly Fleshner' and 'Graham Gudgin' available. The 'Available CSQs' section has 'HR' available. Arrows indicate the movement of resources between the available and assigned lists.

Step 5: For each additional team, repeat Step 3 and Step 4, using the appropriate information.

Procedure 8 Create scripts and applications

In this procedure, an externally created script is uploaded to the server to demonstrate how to upload your script and create your site specific application.



Reader Tip

This guide uses the example script and prompts from a zip file that is included with the document. The script can be used as a template for your help desk application. The zip file can be downloaded from the following URL:

<http://cvddocs.com/fw/Rel2-415-a>

Please use the example script as a template for your scripts.

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

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

Please click the browse button to locate the script or zip file and then click the upload button to upload the file.

File Name*

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 page, select **Cisco Script Application**, and then click **Next**.

Step 6: On the Cisco Script Application page, 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[Helpdesk.aef]**
- Description—**Help desk for IT and HR**
- Enabled—**Yes**
- Default Script—**System Default**

Name	Help Desk	
ID*	<input type="text" value="0"/>	
Maximum Number of Sessions*	<input type="text" value="4"/>	
Script*	<input type="text" value="SCRIPT[Helpdesk.aef]"/>	<input type="button" value="Edit"/>
<input type="checkbox"/> Welcome	<input type="text" value="Welcome.wav"/>	<input type="button" value="Show Prompts"/> <input type="button" value="🔊"/>
<input type="checkbox"/> Goodbye	<input type="text" value="Goodbye.wav"/>	<input type="button" value="Show Prompts"/> <input type="button" value="🔊"/>
<input type="checkbox"/> AfterHoursWelcome	<input type="text" value="AfterHours.wav"/>	<input type="button" value="Show Prompts"/> <input type="button" value="🔊"/>
<input type="checkbox"/> MainMenu	<input type="text" value="MainMenu.wav"/>	<input type="button" value="Show Prompts"/> <input type="button" value="🔊"/>
<input type="checkbox"/> VeryImportant	<input type="text" value="VeryImportant.wav"/>	<input type="button" value="Show Prompts"/> <input type="button" value="🔊"/>
<input type="checkbox"/> ThankYouHR	<input type="text" value="ThankYouHR.wav"/>	<input type="button" value="Show Prompts"/> <input type="button" value="🔊"/>
<input type="checkbox"/> ThankYouIT	<input type="text" value="ThankYouIT.wav"/>	<input type="button" value="Show Prompts"/> <input type="button" value="🔊"/>
Description	<input type="text" value="Help Desk for IT and HR"/>	
Enabled	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Default Script	<input type="text" value="- System Default -"/>	<input type="button" value="Edit"/>

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 page, 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 page, 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)**

Directory Information	
Directory Number*	<input type="text" value="8009940"/>
Trigger Information	
Language*	<input type="text" value="English [en]"/> <input type="button" value="Edit"/>
Application Name*	<input type="text" value="Help Desk"/>
Device Name*	<input type="text" value="InternalHelp"/>
Description*	<input type="text" value="Trigger for Internal Help Desl"/>
Call Control Group*	<input type="text" value="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 default settings.

Advanced Trigger Information		
Enabled	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Maximum Number Of Sessions	<input type="text" value="Default"/>	<small>Unchecked: Default value is same as Number of Sessions set on the Application</small>
Idle Timeout (in ms)	<input type="text" value="5000"/>	
Override Media Termination	<input type="radio"/> Yes <input checked="" type="radio"/> No	
CTI Route Point Information		
Alerting Name ASCII	<input type="text" value="Help Desk Pilot"/>	
Device Pool	<input type="text" value="DP_HQ1_1"/>	
Location	<input type="text" value="Hub_None"/>	
Directory Number Settings		
Partition	<input type="text" value="PAR_Base"/>	
Voice Mail Profile	<input type="text" value="None"/>	
Calling Search Space	<input type="text" value="CSS_Base"/>	
Calling Search Space for Redirect	<input type="text" value="Default Calling Search Space"/>	
Presence Group	<input type="text" value="Standard Presence group"/>	
Call Forward and Pickup Settings		
	Voice Mail	Destination
Forward Busy	<input type="checkbox"/>	<input type="text"/>
		Calling Search Space
		<input type="text" value="None"/>

Procedure 10 Associate Unified CCX application user

The next set of steps associates the Cisco Unified CCX application user with the phones, extension mobility profiles, CTI Route Point, and CTI Ports in Unified CM. Please choose one or both of the following options:

- If you are associating agents and supervisors directly to phones, follow the steps in option 1 “Phone association.”
- If your agents and supervisors are using extension mobility on their phones, follow the steps in option 2 “Extension mobility association.”

Step 1: From a new browser window, access the IP address or hostname of the Cisco Unified CM publisher and then, in the center of the page, click **Cisco Unified CM Administration**.

Step 2: Enter the administrator username and password for Cisco Unified CM, and then click **Login**.

Step 3: Navigate to **User Management > Application User**.

Step 4: On the Application User search page, click **Find**, and then click **CCX_rmjtapi**.

Step 5: On the Application User Configuration page, in the Device Information section under Available Devices, select the Unified CCX CTI ports and the Unified CCX CTI route point, and then click the **down-facing arrow**.

Option 1: Phone association

Step 1: On the Application User Configuration page, in the Device Information section under Available Devices, select the agent and supervisor phones, and then click the **down-facing arrow**.

The screenshot shows the 'Device Information' section with four main areas:

- Available Devices:** A list containing SEP000ED7AC026F, SEP001121FFC422, SEP001DA2394A0C, SEP001DA2394AFC, and SEP0022905B9634. A search icon is on the right. Below the list are two arrows pointing up and down.
- Controlled Devices:** A list containing CTIP_8009952, CTIP_8009953, InternalHelp, SEPB4A4E32842FF, and SEPB4A4E3284438. A search icon is on the right. Below the list are two arrows pointing up and down.
- Available Profiles:** A list containing agroudan_Profile, alexreed_Profile, annc_Profile, aobrien_Profile, and bethomas_Profile. A search icon is on the right. Below the list are two arrows pointing up and down.
- CTI Controlled Device Profiles:** An empty list with two arrows pointing up and down on the right.

Buttons for 'Find more Phones' and 'Find more Route Points' are located to the right of the Available Devices list.

Step 2: After all the phones have been moved into the Controlled Devices section, click **Save**.

Option 2: Extension mobility association

Step 1: IP address or hostname of the Cisco Unified CM publisher and then, in the center of the page, click **Cisco Unified CM Administration**.

Step 2: On the Application User Configuration page, in the Device Information section under Available Profiles, select the agent and supervisor profiles, and then click the **down-facing arrow**.

The screenshot shows the 'Device Information' section with four main areas:

- Available Devices:** A list containing CSFkfleshne, SEP000ED7AC026F, SEP001121FFC422, SEP001DA2394A0C, and SEP001DA2394AFC. A search icon is on the right. Below the list are two arrows pointing up and down.
- Controlled Devices:** A list containing CTIP_8009950, CTIP_8009951, CTIP_8009952, CTIP_8009953, and InternalHelp. A search icon is on the right. Below the list are two arrows pointing up and down.
- Available Profiles:** A list containing agroudan_Profile, alexreed_Profile, annc_Profile, aobrien_Profile, and bethomas_Profile. A search icon is on the right. Below the list are two arrows pointing up and down.
- CTI Controlled Device Profiles:** A list containing gaudgin_Profile, jbooth_Profile, kfleshne_Profile, mchiou_Profile, and mildavis_Profile. A search icon is on the right. Below the list are two arrows pointing up and down.

Buttons for 'Find more Phones' and 'Find more Route Points' are located to the right of the Available Devices list.

Step 3: After all the profiles have been moved into the CTI Controlled Device Profiles section, click **Save**.

Procedure 11 Create and upload the prompts

In this procedure, externally created prompts are uploaded to the server to demonstrate how to upload your prompts.



Reader Tip

This guide uses the example script and prompts from a zip file that is included with the document. The prompts can be used as examples for your help desk application. The zip file can be downloaded from the following URL:

<http://cvddocs.com/fw/Rel2-415-a>

Please use the example prompts as templates for your recordings.

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.

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: From the Upload Prompt page, click **Browse**, locate the prompt WAV file, select it, and then click **Upload**.

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

Name	Size	Date Modified	Modified By	Delete	Rename	Refresh
AfterHours.wav	100.13 KB	11/28/2012 09:13:11 AM Pacific Standard Time	kfleshne			
Goodbye.wav	13.26 KB	11/28/2012 09:13:19 AM Pacific Standard Time	kfleshne			
MainMenu.wav	74.51 KB	11/28/2012 09:13:27 AM Pacific Standard Time	kfleshne			
ThankYouHR.wav	53.42 KB	11/28/2012 09:13:34 AM Pacific Standard Time	kfleshne			
ThankYouIT.wav	59.67 KB	11/28/2012 09:13:41 AM Pacific Standard Time	kfleshne			
VeryImportant.wav	57.95 KB	11/28/2012 09:13:47 AM Pacific Standard Time	kfleshne			
Welcome.wav	44.59 KB	11/28/2012 09:13:53 AM Pacific Standard Time	kfleshne			

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

Step 7: To change the default prompts, select the check box next to each one, click **Show Prompts**, and then choose the appropriate file from the list of your own uploaded prompts. After they are all chosen, click **Update**.



Tech Tip

Custom prompts must have the following WAV format when 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

Note that the new prompt names must match the variable values listed in the script application or they will not play.

Procedure 12 Verify Unified CCX Engine status

Check the status of the Cisco Unified CCX engine in order 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 of the page, select **Cisco Unified CCX Serviceability**, and then 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, the 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 into service.

Configuring the Client Desktop Software

1. Install the client configuration tool
2. Install the desktop administrator software
3. Configure reason codes
4. Configure work flow group information
5. Install the supervisor desktop
6. Install the agent desktop

In this process, you download the Cisco Desktop Administrator, Cisco Supervisor Desktop, and the Cisco Agent Desktop 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 Install the client configuration tool

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

Cisco Unified CCX Client Configuration tool	
Cisco Unified CCX Client Configuration tool	To download Cisco Unified CCX client configuration tool, click on this link
Cisco Unified CCX Desktop Product Suite	
Cisco Unified CCX Desktop Administrator	To install Cisco Unified CCX Desktop Administrator, click on this link
Cisco Unified CCX Supervisor Desktop	To install Cisco Unified CCX Supervisor and Agent Desktops, click on this link
Cisco Unified CCX Agent Desktop	To install Cisco Unified CCX Agent Desktop only, click on this link
CAD-BE Debugging	
It might become necessary to create debug logs for CAD-BE. To do this, right-click the CAD-BE logging and debugging file and save it to your computer as .properties file.	
<ul style="list-style-type: none"> • If using Internet Explorer, save the file to your desktop. • If using Mozilla Firefox for Windows, save the file to the C:\Program Files\Mozilla Firefox folder. • If using Mozilla Firefox for Linux, save the file to your home directory. 	

Step 2: To download the tool, click **Cisco Unified CCX Client Configuration tool**.

Step 3: In the location where the software was downloaded, click **CAD Client Configuration.msi**.

Step 4: On the CAD Client Configuration page, which may be hidden behind other windows on your PC, enter the IP address of the Cisco Unified CCX server: **10.4.48.126**, and then click **Next**.

Please enter the IP address of the server you downloaded this application from.
For example (255.255.255.255).

IP Address:

10.4.48.126

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 more than 30 minutes to complete.

Procedure 2 Install the desktop administrator software

After configuring the client software on the Unified CCX server, install the desktop administrator software.

Step 1: From the Cisco Unified CCX Administration page, navigate to **Tools > Plug-ins**, and then click **Cisco Unified CCX Desktop Suites**.

Step 2: To download the software, click **Cisco Unified CCX Desktop Administrator**, and then follow the prompts to download the software.

Step 3: In the location where the software was downloaded, click **CiscoDesktopAdministrator.msi**, and then follow the installation prompts to install the software.

Procedure 3 Configure reason codes

After installing the desktop administrator, the next procedure configures the reason codes required for the agents. Reason codes are used to identify the different tasks an agent may be doing before and after taking a call.

Step 1: From the PC menu bar, navigate to **Start > All Programs > Cisco > Desktop**, and then click **Admin**.



Tech Tip

The default path to the application on your hard drive is as follows: **C:\Program Files (x86)\Cisco\Desktop\bin\SpkView.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—**1** (Each reason must have a unique number.)
- Description—**End of Shift**

Step 4: Repeat Step 3 for each additional reason code needed for your help desk installation, and then click Done.

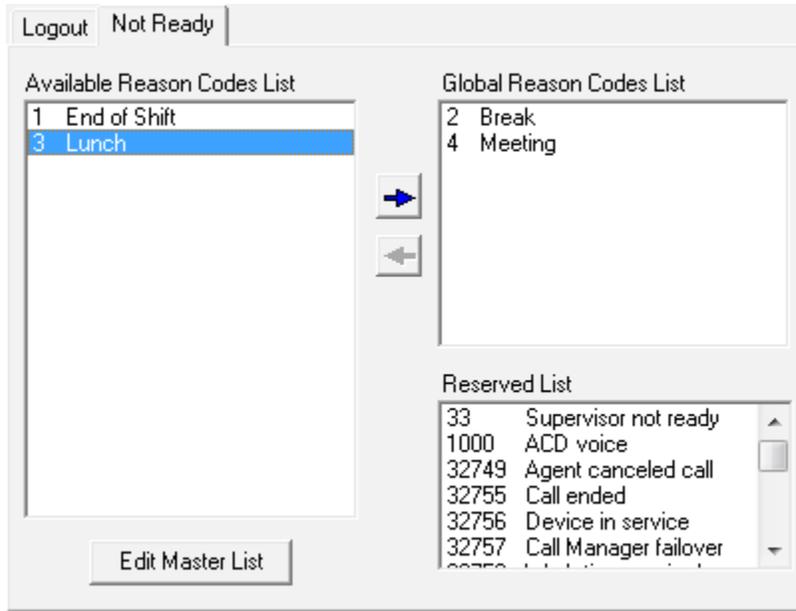
Code	Description
1	End of Shift
2	Break
3	Lunch
4	Meeting

Step 5: On the Logout tab, select the appropriate reasons for logging out, and then click the right arrow to make them available to agent.

Available Reason Codes List	Global Reason Codes List
2 Break	1 End of Shift
4 Meeting	3 Lunch

Reserved List
22 Supervisor logout
1000 ACD voice
32749 Agent canceled call
32755 Call ended
32756 Device in service
32757 Call Manager failover

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



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

Procedure 4 Configure work flow group information

After you have created the reason codes, you need to enable them in the work flow. 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. The home page is used in the integrated browser of the agent desktop software.

Step 1: Navigate to **Call Center 1 > Work Flow Configuration > Work Flow Groups > default > Reason Codes**.

Step 2: On the Logout tab, select **Enable Logout Reason Codes**.

The screenshot shows a configuration window with two tabs: "Logout" and "Not Ready". The "Logout" tab is active. It contains three lists: "Available Reason Codes List" with items "2 Break" and "4 Meeting"; "Global Reason Codes List" with items "1 End of Shift" and "3 Lunch"; and an empty "Work Flow Group List". Between the lists are two arrow buttons (right and left). At the bottom, there is a checked checkbox labeled "Enable Logout Reason Codes".

Step 3: On the Not Ready tab, select **Enable Not Ready Reason Codes**, and then click **Apply**.

The screenshot shows the same configuration window, but the "Not Ready" tab is active. The "Available Reason Codes List" now contains "1 End of Shift" and "3 Lunch". The "Global Reason Codes List" contains "2 Break" and "4 Meeting". The "Work Flow Group List" remains empty. The checkbox at the bottom is now labeled "Enable Not Ready Reason Codes" and is checked.

Step 4: Navigate to **Call Center 1 > Work Flow Configuration > Work Flow Groups > default > Enterprise Data**.



Tech Tip

Enter the Warning threshold before the Caution threshold for each row of the table because the Warning time must be greater than the Caution time.

Step 5: On the Call Activity tab, specify the 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**.

Data **Call Activity**

Device Type	Caution 		Warning 	
	Min	Sec	Min	Sec
CSQ:	8	0	10	0
Agent:	10	0	15	0
Total:	10	0	15	0

Enter a Warning threshold before entering a Caution threshold.
The Warning threshold must be greater than the Caution threshold.

Step 6: Navigate to **Call Center 1 > Work Flow Configuration > Work Flow Groups > default > CAD Agent > User Interface**, and then click the **Browser Setup** tab.

Step 7: Enter the home page, for example: <http://www.cisco.com/>, click **Update**, and then click **Apply**.

Step 8: Enter the home page, for example: <http://www.cisco.com/>, click **Update**, and then click **Apply**.

The screenshot shows the 'Browser Setup' configuration window. It includes the following elements:

- General Browser Options:**
 - Allow Address Editing
 - Enable Integrated Browser
 - Enable Hyperlink Dialing
 - Popups In New Windows
 - Number of Workflow Browsers: 0 (0 - 10)
- Work Sites:** A table with columns 'Site' and 'URL'. Below the table are input fields for 'Site Name:' and 'URL:', and buttons for 'Add', 'Update', and 'Delete'.
- Supervisor & Workflow Browser Tabs:** A dropdown menu for 'Browser Tab' set to 'Supervisor Push Page Tab', a text box for 'Home Page' containing 'http://www.cisco.com/', and an 'Update' button.

Step 9: Exit the Cisco Desktop Work Flow Administrator by clicking the **X** at the top right of the page.

Step 10: On the Administrator page, click **Yes** to save your changes.

Procedure 5 Install the supervisor desktop

After configuring the work flow information from the administrator's desktop, install the supervisor desktop software on each PC where it is required.



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.

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

Step 2: To download the software, click **Cisco Unified CCX Supervisor Desktop**, and then follow the download prompts.

Step 3: In the location where the software was downloaded, click **CiscoSupervisorDesktop.msi**, and then follow the prompts to install the software.

Step 4: From the PC menu bar, navigate to **Start > All Programs > Cisco > Desktop**, and then click **Supervisor**.

i Tech Tip

The default path to the application on your hard drive is as follows: **C:\Program Files (x86)\Cisco\Desktop\bin\Supervisor.exe**

Step 5: On the login page, enter the following information, and then click **OK**.

- Login ID—**ggudgin** (supervisor)
- Password—**[password]**

Login ID:

Password:

Step 6: From the Select Team menu at the top of the page, choose the name of the team, which is **HR** for this supervisor.

File View Tools Actions Help

HR

Skill Groups

- Contact Service Queues
 - Voice
 - HR

Agents

- HR
 - Agents
 - Supervisors
 - Graham Gudgin

Real Time Displays

Voice CSQs - Team Summary

Contact Service Queue	Agents Logged In	Agents in Talking	Agents Ready	Agents Not Ready	Agents
<N/A>	<N/A>	<N/A>	<N/A>	<N/A>	<N/A>

Agents - Team Summary

Agent Name	Logon Time	Calls Presented	Calls Handled	Max Talking	Avg Talking	Total
<N/A>	<N/A>	<N/A>	<N/A>	<N/A>	<N/A>	<N/A>

Agents - Team State

Agent Name	Current State	Skill Group	Contact Service Queue	State Duration	Reason Code
<N/A>	<N/A>	<N/A>	<N/A>	<N/A>	<N/A>

Graham Gudgin | ggudgin | In Service | 13:32

Step 7: Repeat this procedure on each PC that requires the supervisor desktop software.

Procedure 6 Install the agent desktop

After installing the supervisor desktop, install the agent desktop on each PC where it is required.

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

Step 2: To download the software, click **Cisco Unified CCX Agent Desktop**, and then follow the download prompts.

Step 3: In the location where the software was downloaded click **CiscoAgentDesktop.msi**, and then follow the prompts to install the software onto your PC.

If your agents are using extension mobility, they must be logged into their phone before starting the Agent Desktop software on their PC.

Step 4: From the PC menu bar, navigate to **Start > All Programs > Cisco > Desktop**, and then click **Agent**.



Tech Tip

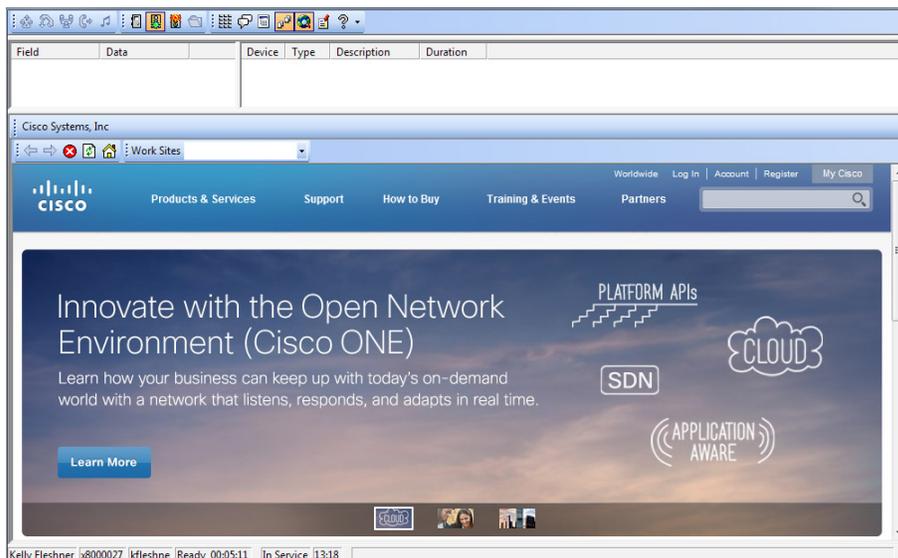
The default path to the application on your hard drive is as follows: **C:\Program Files (x86)\Cisco\Desktop\bin\Agent.exe**

Step 5: On the login page, enter the following information, and then click **OK**.

- ID—**kfleshne** (agent)
- Password—**[password]**
- Extension—**8000027** (IPCC Extension from Unified CM)

Step 6: At the top of the page, click the **Ready** icon. This allows the agent to begin taking calls.

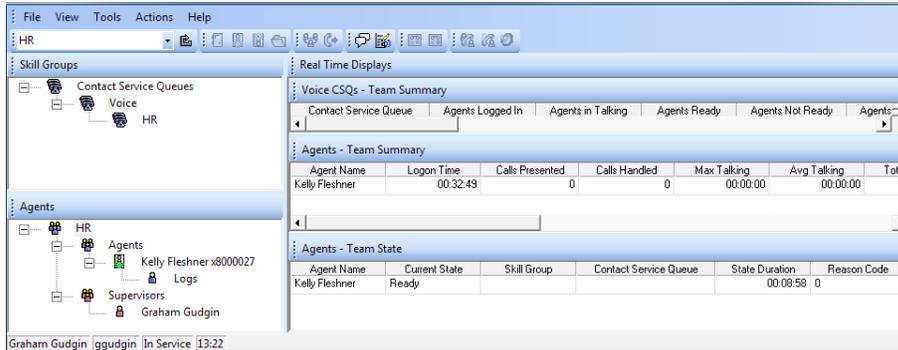
Figure 2 - Agent Desktop in the Ready state with default home page displayed



Step 7: Repeat Step 1 through Step 6 for each PC that requires the agent desktop software.

After the agents are logged in, the supervisor desktop shows the status of each of their assigned agents.

Figure 3 - Supervisor Desktop monitoring the agents



Users call the help desk pilot at **8009940** and are placed into the appropriate HR or IT queue based on their selection.

The help desk baseline configuration is now complete.

Appendix A: Product List

Data Center or Server Room

Functional Area	Product Description	Part Numbers	Software
Virtual Servers	Cisco UCS C240 M3 C-Series Solution Pak for unified communications applications	UCUCS-EZ-C240M3S	9.0(2) or 9.1(1) ESXi 5.0
	Cisco UCS C220 M3 C-Series Solution Pak for unified communications applications	UCUCS-EZ-C220M3S	
	Cisco UCS C220 M3 for Business Edition 6000	UCSC-C220-M3SBE	9.0(2) or 9.1(1a) ESXi 5.0

Data Center Core

Functional Area	Product Description	Part Numbers	Software
Core Switch	Cisco Nexus 5596 up to 96-port 10GbE, FCoE, and Fibre Channel SFP+	N5K-C5596UP-FA	NX-OS 5.2(1)N1(3) Layer 3 License
	Cisco Nexus 5596 Layer 3 Switching Module	N55-M160L30V2	
	Cisco Nexus 5548 up to 48-port 10GbE, FCoE, and Fibre Channel SFP+	N5K-C5548UP-FA	
	Cisco Nexus 5548 Layer 3 Switching Module	N55-D160L3	
	Cisco Nexus 5500 Layer 3 Enterprise Software License	N55-LAN1K9	
	Cisco Nexus 5500 Storage Protocols Services License, 8 ports	N55-8P-SSK9	
Ethernet Extension	Cisco Nexus 2000 Series 48 Ethernet 100/1000BASE-T (enhanced) Fabric Extender	N2K-C2248TP-E	–
	Cisco Nexus 2000 Series 48 Ethernet 100/1000BASE-T Fabric Extender	N2K-C2248TP-1GE	
	Cisco Nexus 2000 Series 32 1/10 GbE SFP+, FCoE capable Fabric Extender	N2K-C2232PP-10GE	

Server Room

Functional Area	Product Description	Part Numbers	Software
Stackable Ethernet Switch	Cisco Catalyst 3750-X Series Stackable 48 Ethernet 10/100/1000 ports	WS-C3750X-48T-S	15.0(2)SE2 IP Base license
	Cisco Catalyst 3750-X Series Stackable 24 Ethernet 10/100/1000 ports	WS-C3750X-24T-S	
	Cisco Catalyst 3750-X Series Four GbE SFP ports network module	C3KX-NM-1G	
Standalone Ethernet Switch	Cisco Catalyst 3560-X Series Standalone 48 Ethernet 10/100/1000 ports	WS-C3560X-48T-S	15.0(2)SE2 IP Base license
	Cisco Catalyst 3560-X Series Standalone 24 Ethernet 10/100/1000 ports	WS-C3560X-24T-S	
	Cisco Catalyst 3750-X Series Four GbE SFP ports network module	C3KX-NM-1G	

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