

Deploying Cisco Unified Contact Center Express

Version 4.0

Lab Guide

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Lab Guide

Overview

This guide presents the instructions and other information concerning the lab activities for the *Deploying Cisco Unified Contact Center Express (UCCXD) v4.0* course. You can find the solutions in the lab activity Answer Key.

Outline

This guide includes these activities:

- Lab 1-1: Sizing Cisco Unified Contact Center Express
- Lab 2-1: Review Cisco Unified Contact Center Express Installation
- Lab 2-2: Provisioning Telephony and Media
- Lab 3-1: Installing the Cisco Unified Contact Center Express Editor
- Lab 3-2: Start Your New Script
- Lab 3-3: Prompt and Collect Information from a Caller
- Lab 3-4: Accessing a Database
- Lab 3-5: Loops, Counters, and Decision-Making
- Lab 3-6: Confirming Caller Input
- Lab 4-1: Configuring Cisco Unified Contact Center Express
- Lab 4-2: Cisco Unified Contact Center Express Scripting
- Lab 4-3: Using the Cisco Desktop Work Flow Administrator
- Lab 4-4: Advanced Cisco Unified Contact Center Express Scripting Techniques
- Lab 4-5: Cisco Unified Contact Center Express Reporting
- Lab 5-1: Remote Monitoring
- Lab 5-2: Outbound Preview Dialing
- Lab 5-3: Agent Email
- Lab 5-4: Spoken Names and Automatic Speech Recognition
- Lab 6-1: Using the Cisco Unified Real-Time Monitoring Tool

Lab 1-1: Sizing Cisco Unified Contact Center Express

Complete this lab activity to practice what you learned in module 1 lesson 3.

Activity Objective

In this activity, you will size the contact center trunks and agents using the Cisco Unified CCX Advanced Resource Calculator. After completing this activity, you will be able to meet these objectives:

- Use the appropriate IPC Resource Calculator to determine sizing requirements for a fictitious Cisco Unified CCX deployment.

Required Resources

These are the resources and equipment that are required to complete this activity:

- PC workstation with Microsoft Internet Explorer or equivalent
- Cisco IPC Resource Calculator

Job Aids

These job aids are available to help you complete the lab activity.

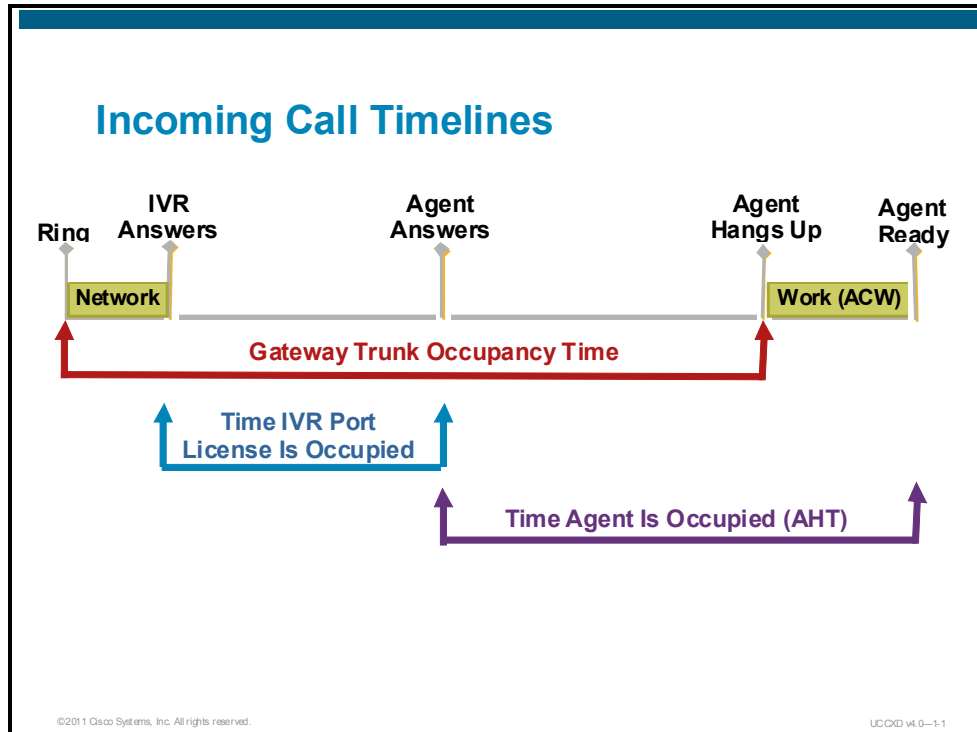
- UCCXD Student Guide
- UCCXD Lab Guide

Task 1: Using the Cisco Unified CCX Resource Calculator

Sizing a contact center means you must gather information about the expected or historical behavior of that environment.

Incoming Call Timelines

Here is a review of the incoming call timelines:



- Average Handle Time (AHT) includes Agent Talk Time + Wrap-Up Time (ACW)
- Average IVR Port Usage Time includes Call Treatment Time + Queue Delay Time
- Total Voice Trunk Holding Time includes Network Ringing + Call Treatment Time + Queue Delay Time + Agent Talk Time

Metrics Used for Sizing Calculations

Here is a review of the sizing metrics:

- **Average Handle Time (AHT):** Average duration (talk time) of a call plus after-call work time, which is the wrap-up time after the caller hangs up
- **Average IVR Port Usage Time:** The total time for prompt play out and menu navigation (if any) in the Cisco Unified CCX script.
- **Service Level Goal for Agents:** Percentage of calls answered by agents within a specific number of seconds.
- **Busy Hour Call Attempts (BHCA):** Average number of calls received in a busy hour.
- **Grade of Service (% Blockage)** for Voice Gateway Ports to the PSTN: Percentage of calls that get a busy tone (no gateway trunks available) out of the total BHCA.

Using the Cisco Unified CCX Resource Calculator

The inputs required for the subsequent configuration and pricing tool are as follows:

- Recommended agents
- Voice gateway trunk
- IVR ports required
 - For queuing
 - For IVR
 - Total

Activity Procedure

Complete these steps:

- Step 1** Open Internet Explorer and access the Cisco Unified CCX Advanced Resource Calculator at the following URL (case-sensitive, requires Cisco.com partner login):
- <http://tools.cisco.com/partner/ipccal/index.htm>
- Step 2** Select the **Advanced IPC Resource Calculator** link.
- Step 3** For the Project Identification, enter **student<xx>** where <xx> is your student ID.
- Step 4** For the Agent Busy Hour Calls in 60 minutes, enter **310** calls.
- Step 5** For the Service Level Goal, enter **90% within 50 seconds**.
- Step 6** The Average Handle Time for Agents is 250 seconds and the Average After Call Work Time is 90 seconds. Enter the **Avg Call Talk Time**. Careful here, think this one over.
- Step 7** Enter the **Avg after call work time**.
- Step 8** For every call, the Average Call Treatment time is **35** seconds while the IVR is prompting and collecting.
- Step 9** The Wait Before Abandon (Tolerance) is **145** seconds.
- Step 10** This contact center has some self-service functions. Calls that are handled by self-service and not sent to an agent are **24**.
- Step 11** The Self Service Average Call Duration is **35** seconds.
- Step 12** There are two trunk groups offering calls to the call center. The Local offers **38%** of the traffic and the LD offers the balance.
- Step 13** Blockage for the local calls can be **2%** and for the LD calls, **1%**.
- Step 14** You have completed the input portion of the calculator, press **Submit** to enter the information into the calculator. The new calculations should appear.

Activity Verification

You have completed this task when you attain this result:

- Your results match the screenshot on the next page. Document your results on the page after the screenshot. The Answer Key follows the next task.

Your Cisco Unified CCX Advanced Resource Calculator should appear like this:

Advanced Service Technology Group
IPCC Advanced Resource Calculator



Project Identification:		Student02				
Agent Busy Hour Calls (BHCA):		60 min	310 calls			
Service Level Goal (SLG):		90 %	within	50 sec	0m 50s	
Avg call talk time:		160 sec	2m 40s			
Avg after call work time:		90 sec	1m 30s			
Avg handle time (Agent calls):		250 sec	4m 10s			
Avg Call treatment Time (IVR):		35 sec	0m 35s			
Wait before abandon (Tolerance):		145 sec	2m 25s			
Self Service Calls (IVR-BHCA):		24				
Self Service Average Call Duration:		35 sec	0m 35s			
PSTN Trunk Groups:	local	LD	TG3	TG4	TG5	
% Trunk Group Allocation:	38 %	62 %	0 %	0 %	0 %	
Blockage %:	2 %	1 %	1 %	1 %	1 %	
Check to manually enter Agents		☐	Agents			
Recommended Agents: 26						
Agent calls completed (BHCC):		305 calls	5 Blocked calls			
Self Service Calls Answered (BHCC):		22 calls	2 Blocked calls			
Calls answered within SLG:		91% within	50 sec			
Calls answered beyond SLG:		9% beyond	50 sec			
Queued calls:		23.4%	71 Q Calls			
Calls answered immediately:		76.6%	233 calls			
Avg Queue Time (AQT):		52 sec	0m 52s			
Avg Speed to Answer (ASA):		12 sec	0m 12s			
Avg call duration:		207 sec	3m 27s			
Agents utilization:		81%				
Calls exceeding Abandon Tolerance:		1%	3 Calls			
IVR ports required for queuing:		5 IVR Ports				
IVR ports required for call treatment:	5	6	0	0	0	
IVR ports required for self service	2	2	0	0	0	
Sum of IVR Ports and Utilization:		20 IVR Ports	21% Utilization			
Voice Trunks Required (TG1 - TG5):	13	19	0	0	0	
Sum of Trunks and Utilization:		32 Trunks	56% Utilization			
Confidence Factor (50% - 100%):		100 %				
Growth Factor (0% - 100%):		0 %				
Confidence/Growth factors:		100%				
Recommended Agents:		26				
Sum of IVR Ports:		20	(uses Recommended Agents)			
Total Trunks:		32				
Submit		Export		Graph Agents Utilization		

Document the Results

Use the results from the Cisco Unified CCX Advanced Resource Calculator to answer these questions:

- Q1) What is the number of recommended agents? _____
- Q2) What is the Average Handle Time for Agents? _____
- Q3) Was the Service Level Goal obtained with this configuration? _____
- Q4) What percentage of the calls is expected to be queued? _____
- Q5) How many local trunks are required? _____
- Q6) How many local trunks are required for self-service? _____
- Q7) What is the total number of voice trunks required? _____
- Q8) Is the recommended agent tally the number of agents for 24 hours? _____

Lab 1-1 Answer Key: Sizing Exercise

When you complete this activity, your answers will be similar to the following:

Cisco Unified CCX Advanced Resource Calculator Answers

- Q1) What is the number of recommended agents? _____26_____
- Q2) What is the Average Handle Time for Agents? _____250 sec_____
- Q3) Was the Service Level Goal obtained with this configuration? _____91%_____
- Q4) What percentage of calls is expected to be queued? _____23.4%_____
- Q5) How many local trunks are required? _____13_____
- Q6) How many local trunks are required for self-service? _____2_____
- Q7) What is the total number of voice trunks required? _____32_____
- Q8) Is the recommended agent tally the number of agents for 24 hours? ___no, Busy Hour_

Lab 2-1: Review Cisco Unified Contact Center Express Installation

Complete this lab activity to practice what you learned in module 2 lesson 2.

Activity Objective

In this activity, you will review the Cisco Unified CCX installation for this classroom. After completing this activity, you will be able to meet these objectives:

- Display the Cisco Unified CCX server states
- Display feature states
- Display cluster licensing information
- Check system parameters options
- Observe your student user capabilities

Required Resources

These are the resources and equipment required to complete this activity:

- Operational Cisco Unified Communications Manager
- Cisco Unified Contact Center Express (CCX)
- Student PC with MS Windows XP, SP2
- Cisco IP Phone, 7940 or better
- Network connectivity between the Cisco Unified CCX system and the PC workstation

Job Aids

These job aids are available to help you complete the lab activity.

- UCCXD Student Guide
- UCCXD Lab Guide
- Cisco Unified CCX Administration

Server	IP Address
Cisco Unified Communications Manager	10.10.1.10
Cisco Unified CCX	10.10.1.40
Domain Controller / Email Server / External Database Server	10.10.1.2

Task 1: Displaying the Cisco Unified CCX Server States

This activity will permit you to observe the server states of each server.

Activity Procedure

To display the Cisco Unified CCX server states, complete these steps:

- Step 1** On your student PC, click the shortcut, **Application Administration**. If this is not available, open Internet Explorer and enter this address: **https://<Unified CCX Server IP Address>/AppAdmin**. Enter these credentials:
- User identification: student<xx> (xx = student pod number)
 - Password: student<xx>
- Step 2** From the navigation menu, choose **Cisco Unified CCX Serviceability** and click **Go**.
- Step 3** Navigate to **Tools > Control Center - Network Services**.
- Step 4** Note the **Select Server** field. If you have more than one server, you would use this field to choose between them.
- Step 5** Also note that you can see when the services or components were started and their uptime.
- Step 6** In the System Services section, note the **Cisco Unified CCX Engine** and its subordinate components. Click the arrows to view the subordinate components.
- Step 7** In the Desktop Services section, you will also see other services that are relevant to Cisco Unified CCX operation.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to view server states.

Task 2: Displaying Feature States

This activity will permit you to observe the feature states of each server.

Activity Procedure

To display the Cisco Unified CCX feature states, complete these steps:

- Step 1** From the Cisco Unified CCX Serviceability menu bar, choose **Tools > Control Center - Feature Services**.
- Step 2** Note that the Cisco Unified CCX Reporting Server Service appears here.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When are able to view feature states.

Task 3: Displaying Cluster License Information

Cisco Unified CCX allows licenses to be changed without the need to reinstall the software.

Activity Procedure

To view Cisco Unified CCX license information, complete these steps:

- Step 1** From the navigation menu, choose **Cisco Unified CCX Administration** and click **Go**.
- Step 2** Navigate to **System > License Information > Display Licenses**. The License Information page opens. This is the license information for the entire cluster.
- Step 3** To add licenses, navigate to **System > License Information > Add Licenses** to see that you can add a *.lic file or a *.zip file.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to display cluster licensing.

Task 4: Checking System Parameters

The system-wide parameters are found on the System Parameters page.

Activity Procedure

To check system parameters options, complete these steps:

- Step 1** From the Cisco Unified CCX Administration menu bar, choose **System > System Parameters**. The System Parameters Configuration page opens.
- Step 2** The Agent state after a Ring No Answer event can be set on this page. Note it is set to Not Ready by default. Also, the Supervisor Access setting is here. By default it is set to No Access to Teams.
- Step 3** Observe the other system-wide settings on this page.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to view System Parameters.

Task 5: Observing Your User Capabilities

Users are granted Administrator or Supervisor permissions from the User Management screen.

Activity Procedure

To observe your student user capabilities, complete these steps:

- Step 1** From the Cisco Unified CCX Administration menu bar, choose **Tools > User Management > User View**. The User Configuration page opens.
- Step 2** Click your student user ID (student<xx>). The User Configuration page appears.
- Step 3** Note that you have already been assigned Administrator rights for Cisco Unified CCX Administration. You will make other relevant assignments here in later labs.

Step 4 Click **Tools > User Management > Administrator Capability View**. Note the different point of view for changing capabilities.

Step 5 Also note the Name Grammar Generation and Spoken Name Upload menu items.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to view user capabilities.

Lab 2-2: Provisioning Telephony and Media

Your applications will use telephony and media resources dedicated to your applications. Other students will not use these resources. At this time, you are not setting up any Cisco Unified CCX functions, only Cisco Unified IP IVR. You will set up agents, teams, and other contact center functions in a later lab.

Complete this lab activity to practice what you learned in module 2 lesson 3.

Activity Objective

In this activity, you will provision the system telephony and media subsystems in preparation for the application configuration. After completing this activity, you will be able to meet these objectives:

- Observe the Telephony Provider information
- Add a Call Control Group
- Add a CMT Dialog Control Group
- Add a Cisco Unified CCX Script Application
- Add a Cisco Unified CM Telephony Trigger
- Call and test a newly configured application

Required Resources

These are the resources and equipment required to complete this activity:

- Operational Cisco Unified Communications Manager
- Cisco Unified Contact Center Express (CCX)
- Cisco IP Phone, 7940 or better
- Network connectivity between the Cisco Unified CCX system and the PC workstation

Job Aids

These job aids are available to help you complete the lab activity.

- UCCXD Student Guide
- UCCXD Lab Guide
- Cisco Unified CCX Administration

Server	IP Address
Cisco Unified Communications Manager	10.10.1.10
Cisco Unified CCX	10.10.1.40
Domain Controller / Email Server / External Database Server	10.10.1.2

Task 1: Observing the Telephony Provider – Observe Only!

The Cisco Unified Communications Manager Telephony Provider area of the Administration web page allows you to view the hostname or IP address of the server running Cisco Unified CTI Manager and view the user ID and password that will allow Cisco Unified Communications Manager to direct calls to the Cisco Unified CCX server. If you have some need to adjust these values, visit the Cisco Unified Communications Manager Configuration page at: **System > Cisco Unified CM Configuration**.

When the Cisco Unified CCX server starts, the Cisco Unified CCX Engine will log into Cisco Unified Communications Manager via the CTI Manager and take control of the devices that have been associated with the Cisco Unified CCX Application User account (CTI ports, CTI route points).

Activity Procedure

In a new system, provisioning the Cisco Unified Communications Manager Telephony Provider is performed during the server setup process. It is the first step that must occur before you can configure any telephony and media. However, only one Cisco Unified Communications Manager Telephony Provider can be configured for a Cisco Unified CCX server. Therefore, you will observe the Cisco Unified Communications Manager Telephony Provider that your instructor previously provisioned.

To observe the Cisco Unified Communications Manager Telephony Provider, complete these steps:

- Step 1** From the Cisco Unified CCX Administration menu bar, choose **Subsystems > Cisco Unified CM Telephony > Provider**. The Cisco Unified CM Telephony Configuration page opens.
- Step 2** Note the IP address for the Cisco Unified CM Telephony Provider. This is a read-only page. The provider information was previously configured during the server setup process. If you have some need to adjust these values, visit the Cisco Unified Communications Manager Configuration page at: **System > Cisco Unified CM Configuration**.

The User Prefix is created for all nodes in the cluster. However, each node has its own user ID on the Cisco Unified Communications Manager. This is a requirement because of high availability. In high availability, you have two servers, one active and one standby. In normal operation, both servers are running, and both servers have their own resources (CTI ports). Therefore, each server needs its own Application User account on Cisco Unified Communications Manager.

The syntax of the User ID is: `<userprefix>_<nodeid>` For example, if you set the User Prefix to **UCCX_Jtapi**, then the User ID for Node 1 will be **UCCX_Jtapi_1**, for Node 2 **UCCX_Jtapi_2**. A Cisco Unified Communications Manager Application User will be created for each node running the Cisco Unified CCX Engine component.

The Cisco Unified Communications Manager telephony triggers will be associated with both of the user accounts; CTI ports created for a particular node are associated only with the user account for that node.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to view the Telephony Provider information.

Task 2: Adding Your Call Control Group

This task will enable you to create a Cisco Unified Communications Manager Telephony Call Control Group, which will pool together four CTI ports, which the system uses to serve calls as they arrive at the Cisco Unified CCX server. This activity will be conducted on the Cisco Unified CCX Administration pages, but will create and associate the new CTI ports on the Cisco Unified Communications Manager. This call control group will only be used by your application and not by any other students.

Activity Procedure

To add your Cisco Unified Communications Manager Telephony Call Control Group, complete these steps:

- Step 1** From the Cisco Unified CCX Administration menu, choose **Subsystems > Cisco Unified CM Telephony > Call Control Group**. The Unified CM Telephony Call Control Group Configuration web page opens.
- Step 2** Click **Add New** to add a new Cisco Unified CM Telephony Call Control Group hyperlink.
- Step 3** On this page, enter the following information. Remember, “<xx>” is your student ID.

Page Area	Field Name	Value
Group Information	Group ID	4<xx>3
	Number of CTI Ports	4
Directory Number	Media Termination Support	No
	Device Name Prefix	CTIP
	Starting Directory Number	4<xx>3

- Step 4** Click the **Show More** button to see other options that should be set for a production environment. Leave these settings at their default values for class.
- Step 5** The next process requires only one student at a time to be adding CTI ports. If many students try adding, you may see “MUTEX” errors or experience delays. If you are the first to add CTI ports, announce “Adding!” to your fellow students. They will wait until you announce “Finished” in a following step.
- Step 6** Click **Add**. The Administration process will create the CTI ports on Cisco Unified Communications Manager and associate them with the Application User account for the Cisco Unified CCX server.
- Step 7** The Cisco Unified Communications Manager Telephony Call Control Group Configuration summary web page opens. The call control group you just added appears in the Group ID column. Announce “Finished” so others may continue.
- Step 8** If you are next to add CTI ports, announce “Adding” when starting and “Finished” when completed.

Activity Verification

Complete the following steps to verify the creation of your new CTI ports:

- Step 1** From the Cisco Unified CCX Administration menu, choose **Subsystems > Cisco Unified CM Telephony > Call Control Group**. The Cisco Unified Communications Manager Telephony Call Control Group Configuration web page opens.
- Step 2** You should see a listing indicating the creation of your new group. Click on the group ID of your new port group. In the group information section, you should see a list of the ports that you just created.
- Step 3** Open a new browser window and access the Cisco Unified Communications Manager Administration pages by entering the following URL: **https:// <Unified CM IP Address>/ccmadmin**. The Cisco Unified Communications Manager Administration page appears.
- Step 4** Enter these credentials to gain access:
 - Username: **administrator**
 - Password: **!QAZ@WSX**
- Step 5** From the Cisco Unified Communications Manager Administration menu bar, choose **Device > Phone**. The Find and List Phones page appears.
- Step 6** To find your new CTI ports, use the drop-down menu to select **Directory Number** and **Begins with** and **4<xx>**.
- Step 7** Click **Find** and your new CTI ports should appear.
- Step 8** How many ports were created? If the lab configuration had a standby server, how many CTI ports would have been created? Was it 4 or 8?
- Step 9** To ensure that your new ports have been associated with the Cisco Unified CCX Application User account, click **User Management > Application User**.
- Step 10** Click **Find**.
- Step 11** Click the **UCCX_Jtapi_1** user account link to view your ports as “Controlled Devices.”
- Step 12** Congratulations! Close the browser for Cisco Unified Communications Manager Administration.
- Step 13** Return to Cisco Unified CCX Administration for the next exercises.

Task 3: Adding Cisco Media Termination Dialog Control Groups

To enable your Cisco Unified CCX applications to handle DTMF-based dialog interactions with callers, you will need to provision the Cisco Media subsystem to configure Cisco Media Termination dialog groups.

To handle ASR interactions, an ASR dialog group will be needed. This will be configured in a later lab.

Activity Procedure

To configure your Cisco Media Termination dialog group, complete the following steps:

- Step 1** From the Cisco Unified CCX Administration menu, choose **Subsystems > Cisco Media**. The Cisco Media Termination Dialog Group Configuration summary page opens.

Step 2 Click **Add New** to add a new CMT Dialog Control Group. The Cisco Media Termination Dialog Group Configuration page opens.

Step 3 On this page, enter the following information:

Field Name	Value
Group ID	4<XX>8
Description	Cisco Media Group 4<xx>8
Number of Licensed IVR Ports	(Display Only)
Maximum Number of Channels	4

Step 4 Click **Add**. The Cisco Media Termination Dialog Group Configuration summary web page opens, showing your new Cisco Media Termination dialog group.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can view your dialog group in the list.

Task 4: Adding a New Cisco Unified CCX Script Application

In this task, you will add a Cisco Script Application to allow the installation test to proceed. This will be the script application that you will use for the duration of the class, using different prompts and scripts.

Activity Procedure

To add a new Cisco Unified CCX Script Application, complete these steps:

Step 1 From the Cisco Unified CCX Administration menu bar, choose **Applications > Application Management**. The Application Management web page opens.

Step 2 Click **Add New** to add a new application. The Add a New Application web page opens.

Step 3 From the Application Type drop-down menu, choose **Cisco Script Application** and click **Next**. The Cisco Script Application configuration web page opens.

Step 4 Use this web page to specify the following:

Field Name	Value
Name	App<xx>
ID	<xx> (Must be unique)
Maximum Number of Sessions	4
Script	SSCRIPT[aa.aef] (The Cisco-provided system auto-attendant script)
Enabled	Yes
Default Script	System Default

- Step 5** Click **Add**. The Cisco Script Application page refreshes, the Add New Trigger hyperlink appears on the navigation bar.
- Step 6** Remain on this Cisco Script Application page for the next task.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can view your own application in the application list.

Task 5: Adding a Cisco Unified Communications Manager Telephony Trigger for Your Application

For this task, you will define the Cisco Unified Communications Manager Telephony Trigger and the directory number that you will use to call your application. The trigger will be available when you set up your application in the next exercise. This trigger and the directory number will be used by you for the rest of the class. This Cisco Unified CCX Administration activity also creates a CTI Route Point on the Cisco Unified Communications Manager and associates it with the Application User account for Cisco Unified CCX.

Activity Procedure

To add a new Cisco Unified Communications Manager Telephony Trigger (and CTI Route Point), complete these steps:

- Step 1** From the Cisco Unified CCX Administration Cisco Script Application page, in the left panel, select **Add new trigger**. The Add a New Trigger web page opens.
- Step 2** For the Trigger Type, select **Unified CM Telephony Trigger**.
- Step 3** Click **Next**. The Cisco Unified Communications Manager Telephony Trigger Configuration page opens.
- Step 4** On this page, enter the following information. As a reminder, <xx> is your student ID.

Page Area	Field Name	Value
Directory Number	Directory Number	1<xx>2
Trigger Information	Language	System Default
	Application Name	App<xx> (Dialog Only)
	Device Name	<xx>
	Description	English DN
	Call Control Group	Unified CM Telephony Group #4xx3 (4xx3)
Advanced Trigger Information (Show More)	Enabled	Yes
	Max Number of Sessions	Default
	Idle Timeout	5000
	Override Media Termination	Yes
	Selected Dialog Groups	Cisco Media Group #4xx8 (remove default)

Page Area	Field Name	Value
CTI Route Point Info	Alerting Name ASCII	<Your Name>
	All Other Fields	Leave as default values

- Step 5** Click **Add**. The Cisco Script Application page appears with the new trigger in the left pane.
- Step 6** If you are experiencing “MUTEX” errors again, coordinate with your lab mates to complete this activity.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can view your own trigger associated to your application.

Task 6: Calling and Testing Your New Application

You are now ready to test your application by calling the directory number for the CTI Route Point.

Activity Procedure

To test your new application, complete these steps:

- Step 1** Dial your application directory number (1xx2). You will hear “Welcome to the Automated Attendant. If you know the phone number, press 1. If you know the name, press 2.”
- Step 2** Press **1**. The application will respond with “Enter the phone number and then press the pound key.”
- Step 3** Enter your lab partner’s telephone number. The application will respond with “Calling”. Your lab partner’s phone will ring.
- Step 4** Ask your partner to answer the phone. Chat a bit, but not too long!

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can complete a test call.

Lab 3-1: Installing the Cisco Unified Contact Center Express Editor

In this lab, you will install the Cisco Unified CCX Editor. Complete this lab activity to practice what you learned in module 3 lesson 1.

Activity Objective

In this activity, you will be installing the Cisco Unified CCX Editor. After completing this activity, you will be able to meet these objectives:

- Install the Cisco Unified CCX Editor
- Download a script to your local hard drive
- Modify your script by uploading and designating a new prompt
- Debug your script

Required Resources

These are the resources and equipment required to complete this activity:

- Operational Cisco Unified Communications Manager
- Cisco Unified Contact Center Express (CCX)
- Student PC with MS Windows XP, SP2
- Cisco IP Phone, 7940 or better
- Network connectivity between the Cisco Unified CCX system and the PC workstation

Job Aids

These job aids are available to help you complete the lab activity.

- UCCXD Student Guide
- UCCXD Lab Guide
- Cisco Unified CCX Administration

Server	IP Address
Cisco Unified Communications Manager	10.10.1.10
Cisco Unified CCX	10.10.1.40
Domain Controller / Email Server / External Database Server	10.10.1.2

Task 1: Installing the Cisco Unified CCX Editor

In this task, you will install your script editor.

Activity Procedure

Complete these steps to install the Cisco Unified CCX Editor:

- Step 1** From the Cisco Unified CCX Administration menu bar, choose **Tools > Plug-ins**. The Plug-ins page opens.
- Step 2** Click the link: **Cisco Unified CCX Editor**.
- Step 3** The File Download dialog box opens; click **Run**.
- Step 4** When the installation dialog box opens, click **Next** and take the default settings until you encounter the Installation Complete dialog box. Click **Done**.
- Step 5** On your student PC, navigate to **Start > Programs > Cisco Unified CCX Editor_801 > Cisco Unified CCX Editor**.
- Step 6** The Cisco Unified CCX Editor login dialog box opens. Log in with these credentials:
 - User Identification: **student <xx>**
 - Password: **student<xx>**
 - Server: **<Unified CCX IP Address>**
- Step 7** Click **Log On**. The editor should open. Take a couple of moments to look around. Leave the editor open for the next task.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can open and log in to the script editor.

Task 2: Downloading a Script to Your Local Hard Drive

For this task, you will download, validate, and save a predefined script from the script repository.

Activity Procedure

Complete these steps to download, validate, and save a script:

- Step 1** Open Windows Explorer on your student PC. Access the C: drive to find a directory called Student Scripts. If the directory is not there, create one.
- Step 2** From the Administration menu bar, choose **Applications > Script Management**. The Script Management web page opens.
- Step 3** Locate the script named X801_03-1_Start.aef. Click the “**Download Script**” icon that appears to the left of the script filename.
- Step 4** When the File Download dialog box opens, click **Open**. The script should open into your script editor.
- Step 5** To check the validity of the script, in the script editor, choose **Tools > Validate**. The script should validate successfully. Click **OK** in the dialog box.

- Step 6** Notice the title bar of the script. Note that if you were to click **Save**, you would be saving to the Temporary Internet Files directory. Go to the File menu of the script editor and choose **Save As**. Save your script to the Student Scripts directory with a name of: **student<xx>.aef**.

Activity Verification

You have completed this task when you attain this result:

- The student<xx>.aef file should be located in your new directory, C:\Student Scripts.

Task 3: Setting up Your Prompt and Script

For your convenience, you can upload your own greeting message prompt file. To do this, you are going to have to create your own prompt directory, upload your prompt, and modify your script to use your prompt.

Activity Procedure: Create Your Prompt Directory

Complete these steps to create a new prompt directory:

- Step 1** In the Administration pages, go to **Applications > Prompt Management**. The prompt Management page should open.
- Step 2** Click the link **en_US** to drill down into the English User Prompts area.
- Step 3** Now click the **PL** (for Physician Locator) link to drill down again. You should see some .wav files and some other directories.
- Step 4** On the upper- left side of the page, click the **Create New Folder** link.
- Step 5** Enter a folder name **student<xx>** and click **Create**.
- Step 6** Click the link, **Return to Prompt Management**. Remain on this page for the next activity.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can view your prompt directory in prompt management.

Activity Procedure: Upload Your Prompt

Complete these steps to upload a prompt:

- Step 1** To upload a .wav file to the new folder, you must go into that new folder. In the folder listings on this page, click **student<xx>**. The Prompt Management page shows that you are in your student<xx> folder.
- Step 2** Click the **Upload New Prompts** link.
- Step 3** Browse to the **\Temp** folder on your PC and select **PL_GreetingMsg.wav**. Open it and click **Upload** and **Return to Prompt Management**. The filename **PL_GreetingMsg.wav** should appear in the list.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can view your prompt listed in your directory.

Activity Procedure: Modify Your Script

You now need to change your script so that it will point to the correct greeting message. Complete these steps to change your script:

- Step 1** In your script editor, open your student<xx>.aef script.
- Step 2** To modify the Set step, highlight the **Set** step and right-click to open the properties window. The Properties window will appear.
- Step 3** In the Value field, change the text **P[PL\PL_Greeting]** to **P[PL\student<xx>\PL_GreetingMsg]** (where <xx> is your student number). This action will cause the script to call your new prompt as a greeting prompt.
- Step 4** Click **OK** in the Properties box.
- Step 5** You must now validate the script. On the Editor menu bar, choose **Tools > Validate**.
- Step 6** The script should validate successfully. Click **OK** to clear the dialog box.
- Step 7** Save the modified script to the Student Scripts directory.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you have successfully saved your modified script in the Student Scripts directory.

Activity Procedure: Upload Your New Script

Complete the following steps to upload your script.

- Step 1** From the Administration pages, navigate to **Applications > Script Management**.
- Step 2** Click the **Upload New Scripts** link.
- Step 3** Browse to your new script in the Student Scripts directory. Click **Upload**. A dialog box opens, informing you that the script was successfully uploaded.
- Step 4** Click the **Return to Script Management** button. You should now be able to see your script listed on the Script Management page.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you have uploaded your script.

Activity Procedure: Associate the New Script with Your Application

Complete the following steps to associate your new script with your application:

- Step 1** From the Administration pages, navigate to **Applications > Application Management**.
- Step 2** Click your Application (**App<xx>**). Your Application page should appear.
- Step 3** To change the script, use the drop-down menu to choose your new script (**SCRIPT[student<xx>.aef]**). The page will refresh. Click **Update**. You are now ready to test your application.

Activity Verification: Test Your New Script

You have completed these tasks when you attain these results:

- Using your phone, dial your route point to access your script (1<xx>2).
- You should hear a prompt that says, “Welcome to the physician locator demo.” The call will then disconnect.

Task 4: Debugging Your Script

For this task, you will use the script editor to perform (and practice) a debug session on your new script.

Note	It is not required, and sometimes undesirable, for you to have your script open in the editor when you start the debug process. The debug process is not dependent on having a script open because it will always open a new current script for you.
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Activity Procedure

Follow these steps to debug your script:

- Step 1** If your editor is not started, start it now and log in.
- Step 2** In the script editor, navigate to **Debug > Reactive Script** and specify the debug information:
- Application File Name: **SCRIPT[student<xx>.aef]** (where <xx> is your student number)
 - Wait Time (seconds): **60**. This is the time that you have between starting the debug session, calling the trigger, and accepting the call. When you become familiar with the debug process, this time can be reduced when you start a debug session.
- Step 3** Click **OK** to start the debug process.
- Step 4** Dial your CTI Route Point Directory Number (1<xx>2) to call your application. A new window displaying the script from the Cisco Unified CCX Server memory will pop up in the Script Editor Design window.
- Step 5** Use the **Step Over** button on the toolbar and step past the Accept step. This will cause the call to be accepted and ringing will stop.
- Step 6** Notice the value of the variable **greetingMsg** in the variable window. Click the **Step Over** button and step past the Set step and watch the Set step change the value to “PL\student<xx>\PL_GreetingMsg.wav”.
- Step 7** Notice that the Play Prompt step is highlighted, but you hear no audio. Press the **Step Over** button to execute the highlighted step. You should now hear the audio for the greeting message, “Welcome to the physician locator demo.” If you do not hear your message, check your .wav file location.
- Step 8** Notice the black square on the debug toolbar. This indicates that you are in Debug mode. Press **Step Over** twice to end the call. The black square turns gray. The message window should say “Done Debugging.”
- Step 9** Repeat this Debug process a few times so that you can be comfortable with this tool.

Step 10 Start a Reactive Debug session but do not call it. To cancel this remote Debug process, navigate to **Debug > Pending Response**. The Pending Reactive Debug Response window appears.

Step 11 Highlight your session and cancel it. Close the window.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can make a test call and debug your script to ensure the correct prompt is being played.

Lab 3-2: Start Your New Locator Script

Complete this lab activity to practice what you learned in module 3 lesson 2.

Activity Objective

In this activity, you will review the Cisco Unified CCX installation for this classroom. After completing this activity, you will be able to meet these objectives:

- Create a new script and apply basic steps to allow a call to be answered, a prompt to be played, and the call to be disconnected
- Debug a script

Required Resources

These are the resources and equipment required to complete this activity:

- Operational Unified Communications Manager
- Cisco Unified Contact Center Express (CCX)
- Student PC with MS Windows XP, SP2
- Cisco IP Phone, 7940 or better
- Network connectivity between the Cisco Unified CCX system and the PC workstation
- Cisco Unified CCX Editor

Job Aids

These job aids are available to help you complete the lab activity.

- UCCXD Student Guide
- UCCXD Lab Guide
- Cisco Unified CCX Administration

Server	IP Address
Cisco Unified Communications Manager	10.10.1.10
Cisco Unified CCX	10.10.1.40
Domain Controller / Email Server / External Database Server	10.10.1.2

Cisco Unified CCX Editor Steps

These editor steps are used in this lab activity:

Script Editor Steps	Description
Start	The script editor automatically adds the Start step when you create a new script by choosing File > New. This step has no properties and does not require a customizer. It is not shown in any palette.
End	Use the End step at the end of your script to complete processing and free all allocated resources. You can also use the End step at the end of a branch of logic in a workflow.
Accept	Use the Accept step to answer a call from Cisco Unified Communications Manager. This is normally the first step in a script after the Start step. This step has no properties and requires no customizer. The caller hears ringing until script reaches this step.
Terminate	Use the Terminate step to end or drop a call. This step has no properties and no customizer. This step ends the workflow.
Annotate	Use the Annotate step to enter comments that explain the function of a workflow segment. Use the Enter Comments field on the Annotate step customizer. This step has no effect on workflow logic.
Delay	Use the Delay step to pause the processing of your script for a specified number of seconds.
Play Prompt	Use the Play Prompt step to play a voice prompt that can give instruction or information to the caller. The prompt can be interruptible or uninterruptible, depending on the needs of the script. If it is interruptible, the step completes when the user presses a key. If it is uninterruptible, the step completes only after the prompt finishes playing.
Get Call Contact Info	Use the Get Call Contact step to access call-specific information and to store values in variables.

Stare and Compare

Your instructor has uploaded completed answer scripts for each lab exercise into the script repository. The answer scripts may be viewed, compared, or downloaded using the Script Management page. You may elect to view the answer scripts as an aid to performing your lab.

When you load the answer script into the script editor, choose **Window > Tile Vertically** to allow both your new script and the sample script to appear side-by-side for comparison. Place your working file closest to the Editor Pallet pane so that you can easily move steps into the script.

The completed script for this activity:

- X801_03-2_Locator.aef

Lab Start and Lab Bypass

It may become necessary or desirable to “catch up” or to simply bypass the activities for a lab. There are completed answer scripts for each lab exercise available on the Script Management page. You may elect to view the answer scripts as an aid to performing your lab or you may simply copy the answer for your solution.

Be sure to keep yourself up-to-date for each module because many labs are dependent on successfully completing previous labs.

Follow these steps to “catch up” or to start this lab:

- Configuration labs in Lab 2 must be completed by you.
- Perform Lab 3-1, Task 1.

Follow these steps to bypass this lab:

- Access Script Management and open the file: X801_03-2_Locator.aef.
- Rename and save the file to your local drive as Locator<xx>.aef.
- Upload the new script to Script Management.
- Assign the new script to your application.

Task 1: Creating Your First Script

You will start a new Physician Locator script that will be added to during the next several labs. In this task, you will begin by answering the call and playing a welcome prompt. You will then extract the calling number (ANI) so that you can play that value back using system prompts.

Activity Procedure: Create Your New Script

To create a new script and apply basic steps to allow a call to be answered, a prompt played, and the caller to be disconnected, complete these steps:

Step 1 On your student PC, open the Cisco Unified CCX Editor. Log in with these credentials:

- User Identification: **student <xx>**
- Password: **student<xx>**
- Server: **<Unified CCX IP Address>**

Step 2 Open a new script.

Step 3 Below the Start step, drag and drop an **Annotate** step to add comments and to document the script. For example, include useful information such as the script name, creator name (your name), creation date, and a minimal description of the script purpose.

Step 4 To create a new variable, click the **New Variable** icon in the variable window. Define the following variables:

Type	Name	Value
String	calledNumber	{}<XX>
String	callingNumber	{}<XX>
Prompt	greetingMsg	P[PL\PL_GreetingMsg]

Step 5 Below the Annotate step, add an **Accept** step (Palette Folder: Contact) to accept a call.

Step 6 You are now going to pull the calling number (ANI) from the system. After the Accept step, add a **Get Call Contact Info** step (Palette Folder: Call Contact). Do not become confused here; there is also a step in a different palette folder called “Get Contact Info.” You do not need that one.

Step 7 Open the properties for the Get Call Contact Info step and set these properties:

Tab	Property	Value or Name	Variables
General	Call Contact	--Triggering Contact--	
	Attribute	Calling Number:	callingNumber
		Called Number:	calledNumber
		Arrival Type:	
		Last Redirected Number:	
		Original Called Number:	
		Original Dialed Number:	
		Dialed Number:	

Step 8 After the Get Call Contact Info step, add a **Play Prompt** (Palette Folder: Media) step to play the greeting message. Set these properties:

Tab	Property	Value or Option
General	Contact	--Triggering Contact--
	Interruptible	Yes
Prompt	Prompt	greetingMsg
	Barge In	Yes
	Continue on Prompt Errors	Yes
Input	Flush Input Buffer	Yes

Step 9 Add a **Delay** (Palette Folder: General) step to place a slight pause between prompts. Open the properties and set the Value to **.5** (seconds).

Step 10 Add an **Annotate** (Palette Folder: General) step and enter this comment: **Lab 3-3 Start**.

Step 11 Add another **Play Prompt** step to play back the calling number using system prompts. Set these properties:

Tab	Property	Value or Option
General	Contact	--Triggering Contact--
	Interruptible	Yes
Prompt	Prompt	S[callingNumber]
	Barge In	Yes
	Continue on Prompt Errors	Yes
Input	Flush Input Buffer	Yes

- Step 12** Add a **Terminate** (Palette Folder: Contact) step to disconnect the call.
- Step 13** Validate the script (**Tools > Validate**).
- Step 14** Save your new script (**File > Save As**) to your student scripts folder as **Locator<xx>.aef**, where <xx> is your two-digit student number.
- Step 15** In the Administration pages, navigate to **Applications > Script Management**. Click **Upload New Scripts** to upload your new script (example: Locator00.aef).
- Step 16** Navigate to **Applications > Applications Management**, choose your application, and select your new script using the drop-down menu. Be sure that your application is enabled.
- Step 17** Click **Update**.
- Step 18** Using your route point (1xx2), call your script to ensure that your script is correct. You should hear a welcome prompt and then a system prompt that “spells” the calling number (the number you dialed from).

Activity Verification

You have successfully completed this activity when you have attained these results:

- When can make a successful test call and you hear your directory number played back to you.

Task 2: Debugging Your New Script

In this activity you will debug your new script.

Activity Procedure

Complete these steps to debug your script:

- Step 1** In the script editor, navigate to **Debug > Reactive Script**.
- Step 2** Use the drop-down menu to find your script, which should look something like this: **SCRIPT[Locator00.aef]**.
- Step 3** Set an appropriate timeout value. It is common to use **60** seconds.
- Step 4** Click **OK** to start the debug.
- Step 5** Call your route point (1xx2). The script should open in the editor and the Start step will be highlighted.
- Step 6** Use the **Step Over** button to step through the script. Observe that the variable values change and observe spoken prompts as you step through the application.

Activity Verification

You have completed this task when you attain these results:

- You call your application and you hear a welcome prompt and then a system prompt that “spells” the calling number (the number you dialed from).
- You are able to successfully perform a debug to view the logic flow and variable information.

Lab 3-3: Prompt and Collect Information from a Caller

Complete this lab activity to practice what you learned in module 3 lesson 3.

Activity Objective

In this activity, you will continue building your physician locator script from the previous lesson. To complete these lab exercises, you will prompt callers to input a zip code or postal code, and present callers with a menu of physician types to choose. When the caller responds, the script will store the caller input information into variables.

After completing this activity, you will be able to meet these objectives:

- Add the script steps required to prompt a caller for a Physician Type
- Add the script steps required to prompt a caller for a Zip Code

Required Resources

These are the resources and equipment required to complete this activity:

- Operational Unified Communications Manager
- Cisco Unified Contact Center Express (CCX)
- Student PC with MS Windows XP, SP2
- Cisco IP Phone, 7940 or better
- Network connectivity between the Cisco Unified CCX system and the PC workstation
- Cisco Unified CCX Editor

Job Aids

These job aids are available to help you complete the lab activity.

- UCCXD Student Guide
- UCCXD Lab Guide
- Cisco Unified CCX Administration

Server	IP Address
Cisco Unified Communications Manager	10.10.1.10
Cisco Unified CCX	10.10.1.40
Domain Controller / Email Server / External Database Server	10.10.1.2

Cisco Unified CCX Editor Steps

These editor steps are used in this lab activity:

Script Editor Steps	Description
Get Digit String	Use the Get Digit String step to capture either a DTMF or spoken digit string from the user in response to a prompt. When using ASR, the prompt used should ask the caller to “press or say” the digit string.
Menu	Use the Menu step to create a menu from which users can choose a series of options. The Menu step receives a single DTMF key entered by a user or a spoken word, and maps this entry to a series of option output branches. The system executes the steps that you add after each of these option output branches.
Set	Use the Set step to assign or change the value of a variable during a call.

Stare and Compare

Your instructor has uploaded completed answer scripts for each lab exercise into the script repository. The answer scripts may be viewed, compared, or downloaded using the Script Management page. As a student, you may elect to view the answer scripts as an aid to performing your lab.

When you load the answer script into the script editor, use the **Window > Tile Vertically** to allow both your new script and the sample script to appear side-by-side for comparison. Place your working file closest to the Editor Pallet pane so that you can easily move steps into the script.

The completed script for this activity:

- X801_03-3_Locator.aef

Lab Start and Lab Bypass

It may become necessary or desirable to “catch up” or to simply bypass the activities for a lab. There are completed answer scripts for each lab exercise available to the student on the Script Management page. You may elect to view the answer scripts as an aid to performing your lab or you may simply copy the answer for your solution.

Be sure to keep yourself up-to-date for each module because many labs are dependent on successfully completing previous labs.

Follow these steps to “catch up,” or to start this lab:

- Access Script Management.
- Download X801_03-2_Locator.aef and save as Locator<xx>.aef in your Student Scripts directory.

Follow these steps to bypass this lab:

- Download X801_03-3_Locator.aef and save as Locator<xx>.aef in your Student Scripts directory.
- **Validate**, **Save**, and **Upload** the new script.
- **Refresh** your application.

Task 1: Prompt Caller for Physician Type

In this task, you will modify your locator script to prompt a caller to choose a physician type.

Activity Procedure

To add script steps to prompt a caller for a physician type, complete the following steps:

Step 1 Open your Locator script from your Student Scripts directory.

Step 2 Create these new variables:

Type	Name	Value	Attributes
final String	promptDir	"PL"	Final
String	physicianType	"	
String	physicianTypePrompt	promptDir + "PL_PhysicianTypePrompt.wav"	
String	typeInternalMedicine	"IM"	
String	typeFamilyPractice	"FP"	
String	typePediatrics	"GP"	
String	typeObstetrician	"OB"	

Step 3 Find and highlight the Annotate step with this comment: **Lab 3-3 Start**.

Step 4 The next step is a Play Prompt step that announces the calling number. **Delete it.**

Step 5 After the Annotate step (Lab 3-3 Start), add a **Menu** (Palette Folder: Media) step and use these properties:

Tab	Property	Value
General	Contact	--Triggering Contact--
	Interruptible	Yes
Prompt	Prompt	physicianTypePrompt
	Barge In	Yes
	Continue On Prompt Errors	Yes
Input	Timeout (in Sec)	3
	Maximum Retries	0
	Flush Input Buffer	Yes
Filter	Options	1 = Internal Medicine
		2 = Family Practice
		3 = Pediatrics
		4 = Obstetrician

Step 6 For the Internal Medicine output branch of the Menu step, add a **Set** step to set these values:

Tab	Variable	Value
General	physicianType	typeInternalMedicine

Step 7 For the Family Practice output branch of the Menu step, add a **Set** step to set these values:

Tab	Variable	Value
General	physicianType	typeFamilyPractice

Step 8 For the Pediatrics output branch of the Menu step, add a **Set** step to set these values:

Tab	Variable	Value
General	physicianType	typePediatrics

Step 9 For the Obstetrician output branch of the Menu step, add a **Set** step to set these values:

Tab	Variable	Value
General	physicianType	typeObstetrician

Step 10 **Validate, Save, and Upload** your script.

Step 11 **Refresh** your application.

Activity Verification

You have completed this task when you attain these results:

- You can call your script and hear the additional prompt asking for a physician type.
- You can debug your script to view the logic and variable values change based on your input.

Task 2: Prompt Caller for a Zip Code

In this task, you will modify your script to enter a five-digit zip code.

Activity Procedure

To add script steps required to prompt a caller for a zip code, complete the following steps:

Step 1 Open your Locator script from your Student Scripts directory.

Step 2 Create these new variables:

Type	Name	Value	Attributes
String	zipCode	""	
String	getZipCodePrompt	promptDir + "PL_GetZipCodePrompt.wav"	

Step 3 In your Locator script, find and highlight the Menu step that prompts for a physician type.

Step 4 Add a **Get Digit String** (Palette Folder: Media) step and use these properties:

Tab	Property	Value
General	Contact	--Triggering Contact--
	Interruptible	Yes
	Result Digit String	zipCode
Prompt	Prompt	getZipCodePrompt
	Barge In	Yes
	Continue On Prompt Errors	Yes
Input	Initial Timeout	5
	Interdigit Timeout	3
	Maximum Retries	3
	Flush Input Buffer	No
	Clear DTMF Buffer on Retry	Yes
Filter	Input Length	5
	Digits Filter	1,2,3,4,5,6,7,8,9,0 (digits must be red to be valid)
	Terminating Digit	None
	Cancel Digit	*

Step 5 In the Successful output branch of the Get Digit String step, add an **Annotate** step and enter this comment: **Lab 3-4 Start**.

Step 6 **Validate**, **Save**, and **Upload** your script.

Step 7 **Refresh** your application.

Activity Verification

You have completed this task when you attain these results:

- You can call your script and hear the additional prompt asking for a zip code.
- You can debug your script to view the logic and variable values change based on your input.

Lab 3-4: Accessing a Database

Complete this lab activity to practice what you learned in module 3 lesson 4.

Activity Objective

In this activity, you will continue building your physician locator script from the previous lesson. To complete these lab exercises, you will connect to an external database. The database in this case contains string (varchar) values that you will use to build string variables to point to prompts. These prompts are physician name, physician phone number, and physician address.

After completing this activity, you will be able to meet these objectives:

- Add the script steps required to access a database to retrieve a record based on collected information and speak physician information back to the caller

Required Resources

These are the resources and equipment required to complete this activity:

- Operational Unified Communications Manager
- Cisco Unified Contact Center Express (CCX)
- Student PC with MS Windows XP, SP2
- Cisco IP Phone, 7940 or better
- Network connectivity between the Cisco Unified CCX system and the PC workstation
- Cisco Unified CCX Editor

Job Aids

These job aids are available to help you complete the lab activity.

- UCCXD Student Guide
- UCCXD Lab Guide
- Cisco Unified CCX Administration

Server	IP Address
Cisco Unified Communications Manager	10.10.1.10
Cisco Unified CCX	10.10.1.40
Domain Controller / Email Server / External Database Server	10.10.1.2

Cisco Unified CCX Editor Steps

These editor steps are used in this lab activity:

Script Editor Steps	Description
DB Read	Use the DB Read step to choose a database and enter SQL statements required to obtain the data that you need for your script.
DB Get	Use the DB Get step to assign the results of the SQL query, defined in the DB Read step, to specific variables that you define using the Variable pane.
DB Release	Use the DB Release step after a DB Get or DB Write step to close an SQL query and release the allocated resources. A released DB connection is returned to the connection pool, and data is no longer associated with this connection.

About the SQL Database

A Microsoft SQL database (located on a company server) has been configured for ODBC access on the Cisco Unified CCX server.

In this exercise, you will access the database containing the Physician_Locator table, and retrieve all records for which ZIP_CODE and CATEGORY match the caller input.

If a physician record is retrieved, the script speaks the name, address, and phone number of the first physician.

You will access a Microsoft SQL database named “UCCXD Database” and a database table named PHYSICIAN_LOCATOR. The following is the database table layout.

Database Table: Physician_Locator

Column Name	Type	Description
ZIP_CODE	char	Zip Code associated with search area
CATEGORY	char	Physician category
NAME	varchar	Physician name
ADDRESS	varchar	Physician address
PHONE	varchar	Physician phone number
TTS_NAME	varchar	Physician name formatted for TTS
TTS_ADDRESS	varchar	Physician address formatted for TTS

Physician_Locator Table

This is the Physician Locator Table in the Cisco IP IVR database.

2:Data in Table 'PHYSICIAN_LOCATOR' in 'Cisco IP IVR' on '(local)'

ZIP_CODE	CATEGORY	NAME	ADDRESS	PHONE	TTS_NAME	TTS_ADDRESS
30074	GP	HowardAdams	784AlpineStreet	3035553958	Howard Adams	7 8 4 Alpine Street
30074	GP	NancyDickinson	2538NorthStreet	3035556247	Nancy Dickinson	2 5 3 8 North Street
30074	GP	MaureenMoore	534BaselineRoad	7205551433	Maureen Moore	5 3 4 Baseline Road
30074	GP	JackZimmermon	784AlpineStreet	3035553952	Jack Zimmermon	7 8 4 Alpine Street
30074	FP	HeatherDunn	3849MountainViewAvenue	3035559896	Heather Dunn	8 49 Mountain View Avenue
30074	FP	RobertMcDowell	243MapleStreet	7205554372	Robert McDowell	2 4 3 Maple Street
30074	FP	CarolynSmith	523East39thStreet	3035559854	Carolyn Smith	5 2 3 East 3 9th Street
30074	OB	LisaMyers	391CenturyWay	3035551214	Lisa Myers	3 9 1 Century Way
30074	OB	JonathanSpears	534BaselineRoad	3035556576	Jonathan Spears	5 3 4 Baseline Road
30074	IM	JohnBarrett	3849MountainViewAvenue	7205559814	John Barrett	3 8 4 9 Mountain View Avenue
30074	IM	ShellyPhillips	2538NorthStreet	3035557644	Shelly Phillips	2 5 3 8 North Street
51822	GP	MarilynFerguson	7439North72ndStreet	7145556809	Marilyn Ferguson	7 4 3 9 North 72nd Street
51822	GP	NormanSheridan	3800ThunderbirdTrail	7145552215	Norman Sheridan	3 8 0 0 Thunderbird Trail
51822	FP	ScottAnderson	1934HealthParkDriveSuite306	7145556082	Scott Anderson	1 9 3 4 Health Park Drive Suite 306
51822	FP	KathyLewis	1934HealthParkDriveSuite306	7145556080	Kathy Lewis	1 9 3 4 Health Park Drive Suite 306
51822	FP	CharlesThompson	934SpruceRoad	7145555402	Charles Thompson	9 3 4 Spruce Road
51822	OB	EmmaBronson	1287BroadwayAvenue	7145550100	Emma Bronson	1 2 8 7 Broadway Avenue
51822	IM	EmmaBronson	1287BroadwayAvenue	7145553351	Emma Bronson	1 2 8 7 Broadway Avenue
51822	IM	DavidHolmes	1934HealthParkDriveSuite224	7145551180	David Holmes	1 9 3 4 Health Park Drive Suite 224
51822	IM	SharonONeill	1287BroadwayAvenue	7145553358	Sharon O'Neill	1 2 8 7 Broadway Avenue
80509	GP	PatrickGill	394FrontStreetSuite209	6025554611	Patrick ill	3 9 4 Front Street Suite 209
80509	GP	LaurieSteinburg	432BluebirdLane	6025550151	Laurie Steinburg	4 3 2 Bluebird Lane
80509	FP	JeffCarpenter	28FrontierLane	6025558454	Jeff Carpenter	2 8 Frontier Lane
80509	FP	TerryHamilton	943MainStreet	6025551212	Terry Hamilton	9 4 3 Main Street
80509	FP	VictorSimms	943MainStreet	6025551212	Victor Simms	9 4 3 Main Street
80509	FP	MatthewWeber	1382CenterStreet	6025554436	Matthew Weber	1 3 8 2 Center Street
80509	OB	MikeCohen	857CrossingDrive	6025553319	Mike Cohen	8 5 7 Crossing Drive
80509	OB	SusanShaffer	4634SouthJeffersonWay	6025558474	Susan Shaffer	4 6 3 4 South Jefferson Way
80509	OB	NicholasJohnson	243-22ndStreetSuite180	6025554628	Nicholas Johnson	2 4 3 22nd Street Suite 180
80509	IM	TimothyBrown	324South42ndStreet	6025551082	Timothy Brown	3 2 4 South 42nd Street
80509	IM	EricWilliams	1382CenterStreet	6025559405	Eric Williams	1 3 8 2 Center Street

How Retrieved Information Is Spoken

When the script retrieves physician information for the zip code of the caller, the script will need to speak the information. The script will speak the zip code using systems speech and the physician information (name, address, and phone number) using prerecorded .wav files stored on the Cisco Unified CCX server.

Stare and Compare

Your instructor has uploaded completed answer scripts for each lab exercise into the script repository. The answer scripts may be viewed, compared, or downloaded using the Script Management page. As a student, you may elect to view the answer scripts as an aid to performing your lab.

When you load the answer script into the script editor, use the **Window > Tile Vertically** to allow both your new script and the sample script to appear side-by-side for comparison. Place your working file closest to the Editor Pallet pane so you can easily move steps into the script.

The completed script for this activity:

- X801_03-4_Locator.aef

Lab Start and Lab Bypass

It may become necessary or desirable to “catch up” or to simply bypass the activities for a lab. There are completed answer scripts for each lab exercise available to the student on the Script Management page. You may elect to view the answer scripts as an aid to performing your lab or you may simply copy the answer for your solution.

Be sure to keep yourself up-to-date for each module because many labs are dependent on successfully completing previous labs.

Follow these steps to “catch up”, or to start this lab:

- Access Script Management.
- Download X801_03-3_Locator.aef and save as Locator<xx>.aef in your Student Scripts directory.

Follow these steps to bypass this lab:

- Download X801_03-4_Locator.aef and save as Locator<xx>.aef in your Student Scripts directory.
- **Validate**, **Save**, and **Upload** the new script.
- **Refresh** your application.

Task 1: Access a Database to Speak Physician Information

With the information that you collect from the caller, you can now access the database to get information for each physician matching the query criteria.

Activity Procedure

To add the script steps required to access a database to retrieve a record based on collected information and speak physician information back to the caller, complete these steps:

Step 1 Open your Locator script from your Student Scripts directory.

Step 2 Create the following variables:

Type	Name	Value
String	plSpeechName	"PhysicianName\
String	plSpeechPhone	"PhysicianPhone\
String	plSpeechAddress	"PhysicianAddress\
String	physicianName	{}"
String	physicianPhone	{}"
String	physicianAddress	{}"

Step 3 Locate and highlight the Annotate step with the comment: **Lab 3-4 Start**.

Step 4 After the Annotate step, add a **DB Read** step.

Step 5 Open the properties of the DB Read step and click the **Refresh DB Schema** button so that the DB Name will appear in the drop-down list. Configure the following properties:

Tab	Property	Value
General	DB Resource Name	GetPhysicians
	Data Source Name	UCCXD Database
	Timeout	7 (default)
Field Selection	SQL Command	SELECT * from PHYSICIAN_LOCATOR where ZIP_CODE = '30074' and CATEGORY = 'IM'

Step 6 The values that you used in the SQL statement are hard-coded values that you know will result in some rows returned. This is a way of testing whether your properties are correctly set up. Click the **Test** button. If the number of rows returned equals "2", your SQL command is valid. If it returns a "?", the SQL command is invalid and needs to be properly typed.

Step 7 In the previous DB Read SQL command, replace '30074' with **\$zipCode** and 'IM' with **\$physicianType**. (Be sure to remove the single quotation marks.) This action will allow the query to act using the zipCode and physicianType variable values that will be populated during run time.

Step 8 Click **Test**. If the number of rows returned equals "0", your SQL command is valid. If it returns a "?", the SQL command is invalid and needs to be properly typed.

Step 9 In the previous DB Read step, in the Field Selection tab, use the drop-down menu to choose the **PHYSICIAN_LOCATOR** table. Note the new dialog box and observe the field names in this table. This is only a tool used to help compose SQL queries. Click **OK** to close the dialog box.

Step 10 For the Successful branch of this DB Read step, add a **DB Get step** and set these properties:

Tab	Property	Value or Local Variable
General	DB Resource Name	GetPhysicians
	Data Source Name	UCCXD Database
Field Selection	Table/View	PHYSICIAN_LOCATOR
	Field Name: NAME	physicianName
	Field Name: PHONE	physicianPhone
	Field Name: ADDRESS	physicianAddress

Step 11 For the Successful output branch of this DB Get step, add **3 Set** steps. Use these properties:

Tab	Variable	Assign
General	physicianName	promptDir + plSpeechName + physicianName
	physicianPhone	promptDir + plSpeechPhone + physicianPhone
	physicianAddress	promptDir + plSpeechAddress + physicianAddress

Step 12 After the last Set step, add a **DB Release** step. Release the **GetPhysicians** DB Resource.

Step 13 For the No Data output branch of the DB Get step, add a **DB Release** step. Release the **GetPhysicians** DB Resource.

Step 14 For the SQL Error output branch of the DB Get step, add a **DB Release** step. Release the **GetPhysicians** DB Resource.

Step 15 After the DB Get step (you may want to fold up its output branches), add a **Play Prompt** step:

Tab	Property	Value or Local Variable
General	Contact	--Triggering Contact--
	Interruptible	Yes
Prompt	Prompt	physicianName
	Barge In	Yes
	Continue On Prompt Errors	Yes
Input	Flush Input Buffer	No

Step 16 Add a **Delay** step to delay for 1 second.

Step 17 Add another **Play Prompt** step:

Tab	Property	Value or Local Variable
General	Contact	--Triggering Contact--
	Interruptible	Yes
Prompt	Prompt	physicianPhone
	Barge In	Yes
	Continue On Prompt Errors	Yes
Input	Flush Input Buffer	No

Step 18 Add a **Delay** step to delay for **1** second.

Step 19 Add another **Play Prompt** step:

Tab	Property	Value or Local Variable
General	Contact	--Triggering Contact--
	Interruptible	Yes
Prompt	Prompt	physicianAddress
	Barge In	Yes
	Continue On Prompt Errors	Yes
Input	Flush Input Buffer	No

Step 20 Add a **Delay** step to delay for **1** second.

Step 21 **Validate, Save, and Upload** your script.

Step 22 **Refresh** your application.

Note Valid zip codes are 30074, 51822, and 80509. Remember, you have created timeouts, so be quick about entering digits and selecting menu items during debug sessions.

Activity Verification

You have completed this task when you attain these results:

- Start the debug and call the application.
- When running debug, you should see the variable physicianType get the value of the menu choice you selected. (Example: "FP" for menu selection 2)
- When running debug, you should see the variable zipCode get the value of the zip code you entered. (Example: 30074)
- Observe the DB Read step to ensure that the call logic goes to the Success branch. This means the connection was available.
- As you pass through the DB Get step, observe the physicianName, physicianPhone, and physicianAddress variable values.
- Observe the results of the three Set steps to see if the path to the file was properly set during this run time.
- You should hear the name, phone number, and address of one physician that was selected by this query. If you do not hear three prompts, examine your script for typing errors. The call should end.

Lab 3-5: Loops, Counters, and Decision-Making

Complete this lab activity to practice what you learned in module 3 lesson 5.

Activity Objective

In this activity, you will continue building your physician locator script from the previous lesson. To complete these lab exercises, you will learn to apply an external “retry” action in your script. You will also collect multiple records from the database so that you can play multiple physician names to callers.

After completing this activity, you will be able to meet these objectives:

- Implement logic to add manual retries for a Menu step
- Add looping logic to retrieve multiple database records
- Add a Menu step for prompting caller to repeat physician information
- Count the number of database records found in the database for a given zip code

Required Resources

These are the resources and equipment required to complete this activity:

- Operational Unified Communications Manager
- Cisco Unified Contact Center Express (CCX)
- Student PC with MS Windows XP, SP2
- Cisco IP Phone, 7940 or better
- Network connectivity between the Cisco Unified CCX system and the PC workstation
- Cisco Unified CCX Editor

Job Aids

These job aids are available to help you complete the lab activity.

- UCCXD Student Guide
- UCCXD Lab Guide
- Cisco Unified CCX Administration

Server	IP Address
Cisco Unified Communications Manager	10.10.1.10
Cisco Unified CCX	10.10.1.40
Domain Controller / Email Server / External Database Server	10.10.1.2

Cisco Unified CCX Editor Steps

These editor steps are used in this lab activity:

Script Editor Steps	Description
Label	Use the Label step to insert a label into a script, which can act as the target for a Goto step within the same script.
Goto	Use the Goto step to cause the script logic to branch to a specified Label step within the script. You must create that Label step before you can customize the Goto step to branch to that label.
Increment	Use the Increment step to increase the value of a chosen integer variable by one.
Decrement	Use the Decrement step to decrease the value of a chosen integer variable by one.
If	Use the If step to cause the program logic to go to one of two branches, based on the evaluation of a specified Boolean expression. The If step automatically adds two output branches: True and False.

Stare and Compare

Your instructor has uploaded completed answer scripts for each lab exercise into the script repository. The answer scripts may be viewed, compared, or downloaded using the Script Management page. You may choose to view the answer scripts as an aid to performing your lab.

When you load the answer script into the script editor, use the **Window > Tile Vertically** to allow both your new script and the sample script to appear side-by-side for comparison. Place your working file closest to the Editor Pallet pane so that you can easily move steps into the script.

The completed script for this activity:

- X801_03-5_Locator.aef

Lab Start and Lab Bypass

It may become necessary or desirable to “catch up” or to simply bypass the activities for a lab. There are completed answer scripts for each lab exercise available on the Script Management page. You may elect to view the answer scripts as an aid to performing your lab, or you may simply copy the answer for your solution.

Be sure to keep yourself up-to-date for each module because many labs are dependent on successfully completing previous labs.

Follow these steps to “catch up”, or to start this lab:

- Access Script Management.
- Download X801_03-4_Locator.aef and save as Locator<xx>.aef in your Student Scripts directory.

Follow these steps to bypass this lab:

- Download X801_03-5_Locator.aef and save as Locator<xx>.aef in your Student Scripts directory.
- **Validate**, **Save**, and **Upload** the new script.
- **Refresh** your application.

Task 1: Adding Manual Retries for a Menu

The first thing you must do is to handle those callers that cannot navigate a menu. After three retries, you will play a prompt and disconnect the call. To do this, you will build some basic infrastructure that allows you to redirect logic to the end of the script, and then you will build some looping logic around the Menu step to allow three retries.

Activity Procedure

To implement logic to add manual retries for a Menu step, complete the following steps:

Step 1 Open your Locator script from your Student Scripts directory.

Step 2 Create the following variables:

Type	Name	Value
int	loopCounter	0
int	loopCounterMax	0
String	callerTroubleMsg	promptDir + "PL_CallerTroubleMsg.wav"

Step 3 Directly below the Get Digit String step that prompts you for a zip code, add a **Label** step and name it **TERMINATE_END**.

Step 4 Directly below the Terminate step, add another **Label** and name it **END**.

Step 5 Find the Menu step that prompts for a physician type. Directly *before* the Menu step, add **two Set** steps and use these properties:

Tab	Variable	Assign
General	loopCounter	0
General	loopCounterMax	3

Step 6 Directly after the two Set steps (or before the Menu Step), add a **Label** step and name it **PHYSICIAN_TYPE_MENU**.

Step 7 In the Timeout branch of the Menu step, add an **Increment** step. Increment the **loopCounter** variable.

Step 8 Next, insert an **If** step and use this condition: **loopCounter == loopCounterMax**.

Step 9 For the True branch of the If step, add a **Play Prompt** step and use these properties:

Tab	Property	Value or Local Variable
General	Contact	--Triggering Contact--
	Interruptible	Yes
Prompt	Prompt	callerTroubleMsg
	Barge In	Yes
	Continue On Prompt Errors	Yes
Input	Flush Input Buffer	No

Step 10 Below the Play Prompt step, add a **Goto** step to go to the **TERMINATE_END** label.

Step 11 For the False branch of the If step, add a **Goto** step to go to the **PHYSICIAN_TYPE_MENU** label.

- Step 12** The Timeout branch is now complete but the Unsuccessful output branch is not complete. Copy and paste the Increment and If steps from the Timeout branch to the Unsuccessful branch.
- Step 13** **Validate, Save, and Upload** your script.
- Step 14** **Refresh** your application.

Activity Verification

You have completed this task when you attain these results:

- Dial the route point for your application.
- When you are prompted for the physician type, either choose an invalid choice or just wait.
- After three attempts of failing to make a valid choice, you will hear an error prompt and the call will disconnect.

Task 2: Adding Looping Logic to DB Steps

Now that you know the basic principles about looping logic, you can apply them to your database steps. Everything here will be almost identical except that the exit to the loop is provided for you. The exit is the “No Data:” output branch of the DB Get step.

Activity Procedure

To add looping logic to retrieve multiple database records, complete the following steps:

- Step 1** Open your Locator script from your Student Scripts directory.
- Step 2** Find and highlight the Successful output branch of the DB Read step.
- Step 3** Add a **Label** step here (this should be before the DB Get step), name it **GET_PHYSICIANS**.
- Step 4** Go to the Successful output branch of the DB Get step. There should be three Set steps and one DB Release step. **Delete the DB Release step.**
- Step 5** Find the three Play Prompt steps that speak the physician information, they are located below the DB Get step. After the last Delay step, add a **Goto** step to go to the **GET_PHYSICIANS** label.
- Step 6** Now that you have looping logic around the DB Get step, you have to provide for the exit. While the “No Data” output branch is your exit, you must now actively move logic outside the loop that you just created. In the “No Data” output branch, after the DB release step, add a **Goto** step to go to the **TERMINATE_END** label.
- Step 7** **Validate, Save, and Upload** your script.
- Step 8** **Refresh** your application.

Activity Verification

You have completed this task when you attain these results:

- Call your application and navigate the script appropriately.
- Depending on the physician type you choose, you will hear different numbers of physician information.
- Debug the script to view the logic.

Task 3: Add Menu to Repeat Physician Information

You may have noticed that you have no option to repeat physician information, nor do you have an option to try a different zip code.

To add a Menu step for prompting a caller to repeat physician information, complete the following steps:

Step 1 Open your Locator script from your Student Scripts directory.

Step 2 Create the following variables:

Type	Name	Value
String	repeatPhysicianMenuPrompt	promptDir + "PL_RepeatPhysicianMenu.wav"

Step 3 Find the Menu step that prompts for the physician type (below it there should be a Get Digit String step that obtains the zip code from the caller). Directly after the Menu step, add a **Label** step and name it: **GET_ZIP_CODE**.

Step 4 After the DB Get step, which is directly before the Play Prompt step that plays the physician name, add another **Label** step and name it: **REPEAT_PHYSICIAN_INFORMATION**.

Step 5 Several steps below, after the last delay step, which is before the Goto step that goes to the GET_PHYSICIANS label, add a **Menu** step and use these properties:

Tab	Property	Value
General	Contact	--Triggering Contact--
	Interruptible	Yes
	Prompt	repeatPhysicianMenuPrompt
	Barge In	Yes
	Continue On Prompt Errors	Yes
	Timeout (in Sec)	3
Input	Maximum Retries	0
	Flush Input Buffer	Yes
	Options	1 = Next Physician
Filter		2 = Repeat Physician
		3 = Get New Zip Code

Step 6 The next few steps focus on the output branches of the Menu step that you just created. For the Next Physician output branch, nothing needs to be done because the logic can just continue and the script will work as needed. So in the **Next Physician** output branch, add an **Annotate** step that says, **Continue**.

Step 7 For the Timeout and Unsuccessful output branches, you want the same logic, so copy the Annotate step just created into these branches as well.

Step 8 For the Repeat Physician output branch, add a **Goto** step to go to the **REPEAT_PHYSICIAN_INFORMATION** label.

Step 9 For the Get New Zip Code output branch, add a **Goto** step to go to the **GET_ZIP_CODE** label.

Step 10 **Validate, Save, and Upload** your script.

Step 11 Refresh your application.

Activity Verification

You have completed this task when you attain these results:

- Call your application and navigate the script appropriately.
- Depending on the physician type you choose, you will hear different numbers of physician information.
- You will now be presented with a menu that offers a choice to repeat the physician information, go to the next physician, or enter a new zip code. The menu should work appropriately.
- Debug the script to view the logic.

Task 4: Counting Database Records

Because the script does not have knowledge of how many physician records there are, the script still presents a menu to go to the next physician even when there is no next physician record to present. This logic needs to be fixed. In this task, you will count the records and provide for an “ending menu” to allow the caller to restart the demo.

Activity Procedure

To count the number of database records found in the database for a given zip code, complete the following steps:

Step 1 Open your Locator script from your Student Scripts directory.

Step 2 Create the following variables:

Type	Name	Value
int	recordCount	0
String	endingMenuPrompt	promptDir + “PL_EndingMenu.wav”

Step 3 To effectively count the physician records, you must implement another set of DB read and DB Get steps with their own looping logic. These steps will need to be placed *before* the DB steps that you currently have. Find and highlight the Successful output branch of the Get Digit String step that obtains the zip code (this branch contains your current DB steps). Directly beneath the Successful branch, add a **DB Read** step and use these properties:

Tab	Property	Value
General	DB Resource Name	CountPhysicians
	Data Source Name	UCCXD Database
	Timeout	7 (default)
Field Selection	SQL Command	SELECT * from PHYSICIAN_LOCATOR where ZIP_CODE = \$zipCode and CATEGORY = \$physicianType

Step 4 For the Connection Not Available and SQL Error output branches of the DB Read step, add a **Play Prompt** step and use these properties:

Tab	Property	Value or Local Variable
General	Contact	--Triggering Contact--
	Interruptible	Yes
Prompt	Prompt	callerTroubleMsg
	Barge In	Yes
	Continue On Prompt Errors	Yes
Input	Flush Input Buffer	No

Step 5 After both of the Play Prompt steps just added in Step 4, add a **Goto** step to go to the **TERMINATE_END** label.

Step 6 For the Successful output branch of the DB Read step, add a **Set** step. Set recordCount to equal **0**.

Step 7 Add a **Label** step and name it **COUNT_PHYSICIANS**.

Step 8 Add a **DB Get** step. Use these properties:

Tab	Property	Value or Local Variable
General	DB Resource Name	CountPhysicians
	Data Source Name	UCCXD Database
Field Selection	Table/View	PHYSICIAN_LOCATOR
	Field Name: NAME	physicianName

Step 9 For the Successful output branch of the DB Get step:

- Add an **Increment** step. Increment the **recordCount** variable.
- Add a **Goto** step to go to the **COUNT_PHYSICIANS** label.

Step 10 For the SQL Error output branch of the DB Get step:

- Add a **DB Release** step. Release the **CountPhysicians** resource.
- Add a **Play Prompt** step and use these properties:

Tab	Property	Value or Local Variable
General	Contact	--Triggering Contact--
	Interruptible	Yes
Prompt	Prompt	callerTroubleMsg
	Barge In	Yes
	Continue On Prompt Errors	Yes
Input	Flush Input Buffer	No

- Add a **Goto** step to go to the **TERMINATE_END** label.

Step 11 For the No Data output branch of the DB Get step:

- Add a **DB Release** step. Release the **CountPhysicians** resource.
- Add an **If** step and set these conditions: **recordCount == 0**.

- Step 12** For the True output branch of the If step (no records were found), you will drop the call. (You will add other options in a later lab.) Add a **Goto** step to go to the **TERMINATE_END** label.
- Step 13** When script logic takes the False output branch of the If step, it can be assumed that records were counted and that the counting process has completed. All that needs to happen now is to let the logic fall through to the next set of DB steps. Therefore, for the False output branch of the If step, add an **Annotate** step and provide the comment to “**Continue.**”
- Step 14** Now that you have a count of records, you can fix your menu problems that were noted before. But before you do that, you need an avenue to restart the demo. Navigate toward the beginning of the script where you have a Get Call Contact Info step; it should be directly before the greeting message. After the Get Call Contact Info step, add a **Label** step, name it **START_DEMO**.
- Step 15** Drill down under the second DB Read step successful branch, to the Menu step that prompts the caller if they want to repeat the physician information. Open the “Next Physician” output branch and add a **Decrement** step. Decrement the **recordCount** variable.
- Step 16** Add an **If** step and set this condition: **recordCount == 0**.
- Step 17** For the False branch of the If step, add an **Annotate** step to “**Continue.**”
- Step 18** For the True branch of the If step, add a **Menu** step. Use these properties:

Tab	Property	Value
General	Contact	--Triggering Contact--
	Interruptible	Yes
Prompt	Prompt	endingMenuPrompt
	Barge In	Yes
	Continue On Prompt Errors	Yes
Input	Timeout (in Sec)	3
	Maximum Retries	3
	Flush Input Buffer	Yes
Filter	Options	1 = Restart Demo
		2 = Disconnect

- Step 19** For the Restart Demo output branch, add a **Goto** step to go to the **START_DEMO** label.
- Step 20** For the other branches, Disconnect, Timeout, and Unsuccessful, add a **Goto** step to go to the **TERMINATE_END** label.
- Step 21** You have now completed the steps for the “Next Physician” output branch, but you have not done anything with the Timeout and Unsuccessful branches. Collapse all the branches of the If step that you just created. For the Timeout and Unsuccessful output branches of the Menu step, which prompts the caller to repeat the physician information, copy and paste the two steps (Decrement and If) found in the Next Physician output branch.
- Step 22** **Validate, Save, and Upload** your script.
- Step 23** **Refresh** your application.

Activity Verification

You have completed this task when you attain these results:

- Call your application and navigate the script appropriately.
- Depending on the physician type you choose, you will hear different numbers of physician information.
- You will be presented with a menu that offers a choice to repeat the physician information, go to the next physician, or enter a new zip code. The menu should work appropriately.
- After the last physician record, when you press **1** to go to the next physician, you will get a menu indicating that there are no more physicians. It will prompt you to restart the demo or disconnect the call.
- Debug the script to view the logic.

Lab 3-6: Confirming Caller Input

Complete this lab activity to practice what you learned in module 3 lesson 6.

Activity Objective

In this activity, you will continue building your physician locator script from the previous lesson. To complete these lab exercises, you will confirm the input of a caller for the zip code. Next, you will use escalating prompts to help a caller navigate your script.

After completing this activity, you will be able to meet these objectives:

- Create and use a generated prompt to confirm caller input
- Use an escalating prompt to help a caller navigate a script step
- Implement another method of manual retries
- Use the Create Conditional Prompt step to aid in announcing the number of records retrieved by the database steps

Required Resources

These are the resources and equipment required to complete this activity:

- Operational Unified Communications Manager
- Cisco Unified Contact Center Express (CCX)
- Student PC with MS Windows XP, SP2
- Cisco IP Phone, 7940 or better
- Network connectivity between the Cisco Unified CCX system and the PC workstation
- Cisco Unified CCX Editor

Job Aids

These job aids are available to help you complete the lab activity.

- UCCXD Student Guide
- UCCXD Lab Guide
- Cisco Unified CCX Administration

Server	IP Address
Cisco Unified Communications Manager	10.10.1.10
Cisco Unified CCX	10.10.1.40
Domain Controller / Email Server / External Database Server	10.10.1.2

Cisco Unified CCX Editor Steps

These editor steps are used in this lab activity:

Script Editor Steps	Description
Create Container Prompt	Use the Create Container Prompt step to combine multiple prompts into one larger prompt. This step can concatenate prompts, create random prompts, or create a prompt that will play escalating prompts.
Create Generated Prompt	Use the Create Generated Prompt step to create prompt phrases from intermediate variables whose values are dynamically determined based on run-time script information. The generated prompt can cause data to be said as a number, ordinal number, date, currency, credit card number, telephone number, and many more types.

Stare and Compare

Your instructor has uploaded completed answer scripts for each lab exercise into the script repository. The answer scripts may be viewed, compared, or downloaded using the Script Management page. You may choose to view the answer scripts as an aid to performing your lab.

When you load the answer script into the script editor, use the **Window > Tile Vertically** to allow both your new script and the sample script to appear side-by-side for comparison. Place your working file closest to the Editor Pallet pane so you can easily move steps into the script.

The completed script for this activity:

- X801_03-6_Locator.aef

Lab Start and Lab Bypass

It may become necessary or desirable to “catch up” or to simply bypass the activities for a lab. There are completed answer scripts for each lab exercise available on the Script Management page. You may choose to view the answer scripts as an aid to performing your lab or you may simply copy the answer for your solution.

Be sure to keep yourself up-to-date for each module because many labs are dependent on successfully completing previous labs.

Follow these steps to “catch up” or to start this lab:

- Access Script Management.
- Download X801_03-5_Locator.aef and save as Locator<xx>.aef in your Student Scripts directory.

Follow these steps to bypass this lab:

- Download X801_03-5_Locator.aef and save as Locator<xx>.aef in your Student Scripts directory.
- **Validate**, **Save**, and **Upload** the new script.
- **Refresh** your application.

Task 1: Confirming the Zip Code

You are now going to work on the Get Digit String that prompts the caller for a zip code. When the caller inputs a zip code, you will use some confirmation steps to confirm that the script understood the input. (Actually, you are confirming that the caller actually did enter what was intended.)

Activity Procedure

To create and use a generated prompt to confirm caller input, complete the following steps:

Step 1 Open your Locator script from your Student Scripts directory.

Step 2 Create the following variables:

Type	Name	Value
Prompt	zipCodePrompt	P[]
Prompt	excuseMePrompt	P[promptDir + "PL_ExcuseMe.wav"]
Prompt	press1Or2Prompt	P[promptDir + "PL_Press1Or2.wav"]
Prompt	checkingDatabasePrompt	P[promptDir + "PL_CheckingDatabase.wav"]

Step 3 Find the Successful output branch of the Get Digit String that prompts the caller for a zip code. Directly after the Successful branch (before the DB steps), add a **Create Generated Prompt** step and use these properties:

Tab	Property	Value or Names	Values
General	Generator Type	spelling	
	Constructor Type	(string)	
	Arguments	string:	zipCode
	Override Language		
	Output Prompt	zipCodePrompt	

Step 4 Next, add an **Implicit Confirmation** step and use these properties:

Tab	Property	Value or Option
General	Contact	--Triggering Contact--
	Interruptible	Yes
Prompt	Prompt	checkingDatabasePrompt + zipCodePrompt
	Continue on Prompt Errors	Yes
Input	Timeout	2

Note Using an Implicit Confirmation step in a non-ASR script is probably not the best way to confirm an input from the caller because it requires a DTMF input as opposed to any speech audio in ASR mode.

Step 5 For the “Yes” output branch of the Implicit Confirmation step, add an **Annotate** step to “**Continue**” because, in this case, no action needs to be taken.

Step 6 For the “No” output branch, add an **Explicit Confirmation** step and use these properties:

Tab	Property	Value or Option
General	Contact	--Triggering Contact--
	Interruptible	Yes
Prompts	Initial Prompt	excuseMePrompt + zipCodePrompt + press1Or2Prompt
	Error Prompt	
	Timeout Prompt	
	Barge In	Yes
	Continue on Prompt Errors	Yes
Input	Timeout	5
	Maximum Retries	3
	Flush Input Buffer	Yes

Step 7 For the “Yes”, Timeout, and Unsuccessful output branches of the Explicit Confirmation step, add an **Annotate** step to “**Continue**” because, in this case, no action needs to be taken.

Step 8 For the “No” output branch, add a **Goto** step to go to the **GET_ZIP_CODE** label.

Step 9 **Validate, Save, and Upload** your script.

Step 10 **Refresh** your application.

Activity Verification

You have completed this task when you attain these results:

- Call your application and navigate the script to the zip code prompt.
- When prompted for a zip code, enter any five digits.
- During the next prompt, which states “We are checking the database,” press any DTMF digit.
- You should now hear an Explicit Confirmation step. Make your choice appropriately.
- Debug the script to view the logic.

Task 2: Implementing an Escalating Prompt

Sometimes it is appropriate to provide additional assistance to the caller who is experiencing problems navigating a script.

Activity Procedure

To use an escalating prompt to help a caller navigate a script step, complete these steps:

Step 1 Open your Locator script from your Student Scripts directory.

Step 2 Create the following variables:

Type	Name	Value
Prompt	getZipCodePrompt1	P[promptDir + "PL_GetZipCodePrompt.wav"]
Prompt	getZipCodePrompt2	P[promptDir + "PL_GetZipCodePrompt2.wav"]
Prompt	getZipCodePrompt3	P[promptDir + "PL_GetZipCodePrompt3.wav"]
Prompt	getZipCodePromptAll	P[]

Step 3 Find the GET_ZIP_CODE label. After this label, add a **Create Container Prompt** step. Use these properties:

Tab	Property	Value or Option
General	Type	Escalation
	Prompts	getZipCodePrompt1
		getZipCodePrompt2
		getZipCodePrompt3
	Override Language	
	Output Prompt	getZipCodePromptAll

Step 4 Open the properties of the Get Digit String that prompts for a zip code. On the Prompt tab, modify the Prompt field to use this prompt: **getZipCodePromptAll**.

Step 5 **Validate**, **Save**, and **Upload** your script.

Step 6 **Refresh** your application.

Activity Verification

You have completed this task when you attain these results:

- Call your application and navigate the script to the zip code prompt.
- When prompted for a zip code, either wait for a timeout or press the cancel key (*).
- You should now hear the second prompt in the container prompt telling you more specifically what to enter.
- Wait again for a timeout or press the cancel key (*) to hear the third prompt.
- Complete the script as desired.
- Debug the script to view the logic.

Task 3: Implementing Manual Retries (Again)

You may have noticed retry messages when an internal retry occurred on the last task. You can fix that by setting up manual retries again. To do this, though, you will have to set up the escalating prompt action manually. This is because an escalating prompt only works for internal retries, not external retries.

Activity Procedure

To implement manual retries for an escalating prompt, complete the following steps:

- Step 1** Open your Locator script from your Student Scripts directory.
- Step 2** Many of the steps that you need to do this already exist in the script, so most of this procedure will be copying and pasting. You need to start first by ensuring the loopCounter and loopCounterMax variables are set (or reset) correctly. Find the two Set steps that set these values (located after the greeting message), copy and paste them directly *after* the GET_ZIP_CODE label.
- Step 3** Open the properties of the Get Digit String step that prompts for a zip code to modify a couple of settings:
- Click the **Label tab** (on the left side), and add the Label: **GET_ZIP_CODE_RETRY**.
 - On the **Input tab**, modify the Maximum Retries value from 3 to 0.
 - Close the properties.
- Step 4** Find and highlight the Menu step that prompts for the physician type. Open the Timeout output branch. You will find two steps in the Timeout output branch. Copy them both and paste them to the Timeout output branch of the Get Digit String step that prompts for a zip code.
- Step 5** In the Timeout branch of the Get Digit String step:
- Directly after the Increment step, add a **Switch** step and use these properties:

Tab	Property	Value or Name	Connections
General	Switch Value	loopCounter	
	Cases	1	Prompt 2
		2	Prompt 3

- In the Prompt 2 output branch of the new Switch step, add a **Set** step. Use these properties:

Tab	Variable	Assign
General	getZipCodePromptAll	getZipCodePrompt2

- In the Prompt 3 output branch of the new Switch step, add a **Set** step. Use these properties:

Tab	Variable	Assign
General	getZipCodePromptAll	getZipCodePrompt3

- Open the False branch of the If step that follows the Switch step. Change the Goto step to go to the **GET_ZIP_CODE_RETRY** label.

- Step 6** For the Unsuccessful output branch of the Get Digit String step, copy and paste the three steps you now have in the Timeout branch.
- Step 7** **Validate, Save, and Upload** your script.
- Step 8** **Refresh** your application.

Activity Verification

You have completed this task when you attain these results:

- Call your application and navigate the script to the zip code prompt.
- When prompted for a zip code, either wait for a timeout or press the cancel key (*).
- You should now hear the second prompt in the container prompt telling you more specifically what to enter.
- Wait again for a timeout or press the cancel key (*) to hear the third prompt.
- You should not have heard the system retry messages.
- Complete the script as desired.
- Debug the script to view the logic.

Task 4: Announcing Number of Records to the Caller

You are not yet announcing the number of records that you find to the caller. You are also still disconnecting the call if the zip code is not found in the database. For this task, you are going to announce the number of physicians found, and if there are no physicians found, you will provide an option to allow the caller to try another zip code.

Activity Procedure

To use the Create Conditional Prompt step to aid in announcing the number of records retrieved by database steps, complete the following steps:

Step 1 Open your Locator script from your Student Scripts directory.

Step 2 Create the following variables:

Type	Name	Value
Prompt	noPhysiciansFoundPrompt	P[promptDir + "PL_NoPhysiciansFound.wav"]
Prompt	enterNewZipCodePrompt	P[promptDir + "PL_EnterNewZipCode.wav"]
Prompt	recordCountPrompt	P[]
Prompt	physiciansFoundPrompt	P[promptDir + "PL_PhysiciansFound.wav"]
Prompt	physicianFoundPrompt	P[promptDir + "PL_PhysicianFound.wav"]
Prompt	tempPhysicianFoundPrompt	P[]

Step 3 All of your work is going to be accomplished in an If step located in the first set of DB steps (where you are counting records). In the “No Data” output branch of the DB Get step, there is an If step with the condition: recordCount == 0 (you can search on this). In the True output branch of the If step, remove the **Goto TERMINATE_END** step.

Step 4 In the True output branch of the If step, which should now be empty, add a **Play Prompt** step and use these properties:

Tab	Property	Value or Option
General	Contact	--Triggering Contact--
	Interruptible	Yes
Prompt	Prompt	noPhysiciansFoundPrompt + zipCodePrompt
	Barge In	Yes
	Continue on Prompt Errors	Yes
Input	Flush Input Buffer	Yes

Step 5 After the Play Prompt step, add a **Menu** step and use these properties:

Tab	Property/Connections	Value or Option
General	Contact	--Triggering Contact--
	Interruptible	Yes
Prompt	Prompt	enterNewZipCodePrompt
	Barge In	Yes
	Continue on Prompt Errors	Yes
Input	Timeout	3
	Maximum Retries	3
	Flush Input Buffer	No
Filter	Options	1 = New Zip Code
		2 = Disconnect

Step 6 In the New Zip Code output branch of the Menu step, add a **Goto** step to go to the **GET_ZIP_CODE** label.

Step 7 In the Disconnect, Timeout, and Unsuccessful output branches of the Menu step, add a **Goto** step to go to the **TERMINATE_END** label.

Step 8 In the False branch of the If step (recordCount == 0), add a **Create Generated Prompt** step and use these properties:

Tab	Property	Value or Names	Values
General	Generator Type	number	
	Constructor Type	(number)	
	Arguments	number:	recordCount
	Override Language		
	Output Prompt	recordCountPrompt	

Step 9 After the Create Generated Prompt step, add a **Create Conditional Prompt** step and use these properties:

Tab	Property	Value
General	Condition	recordCount == 1
	True Prompt	physicianFoundPrompt
	False Prompt	physiciansFoundPrompt
	Output Prompt	tempPhysicianFoundPrompt

Step 10 After the Create Conditional Prompt step, add a **Play Prompt** step to announce the number of physicians found. Use these properties:

Tab	Property	Value or Option
General	Contact	--Triggering Contact--
	Interruptible	Yes
Prompt	Prompt	recordCountPrompt + tempPhysicianFoundPrompt + zipCodePrompt
	Barge In	Yes
	Continue on Prompt Errors	Yes
Input	Flush Input Buffer	Yes

Step 11 **Validate, Save, and Upload** your script.

Step 12 **Refresh** your application.

Activity Verification

You have completed this task when you attain these results:

Step 1 Call your application.

Step 2 When prompted for a physician type, enter **1**.

Step 3 When prompted for a zip code, enter **30074**, **80509**, or **51822**.

Step 4 You should hear a prompt indicating more than one physician found. It should be using a “plural” prompt.

Step 5 Complete the call.

Step 6 Call your application again.

Step 7 When prompted for a physician type, enter **4**.

Step 8 When prompted for a zip code, enter **51822**.

Step 9 You should hear a prompt indicating one physician found. It should be using a “singular” prompt.

Step 10 Complete the call.

Step 11 Debug the script to view the logic.

Lab 4-1: Configuring Cisco Unified Contact Center Express

Complete this lab activity to practice what you learned in module 4 lesson 1.

Activity Objective

In this activity, you will provision Cisco Unified CCX, and then you will send a call to an agent desktop using the icd.aef script provided by Cisco. After completing this activity, you will be able to meet these objectives:

- Assign an IPCC Extension to your agent phone
- Observe the RmCm Provider Information
- Associate the agent phone with the RmCm Provider
- Create a Resource Group
- Create a Skill
- Assign a Resource Group and Skills to your agent
- Create a Contact Service Queue
- Display the Agent-based Routing settings
- Assign supervisor capabilities to your agent
- Make team assignments for your agent supervisor
- Install the Agent and Supervisor desktop
- Start your Agent Desktop and log in
- Start your Supervisor Desktop and log in
- Modify your application to use the icd.aef script
- Test the icd.aef script, agent activities on your Agent Desktop, and basic ACD call handling
- Test call handling with multiple agents in a Resource Group
- Use a skills-based CSQ to route calls
- Test supervisor activities from your Supervisor Desktop
- Set up the IP Phone Agent service on Cisco Unified Communications Manager and test IP Phone Agent functionality on your IP phone

Required Resources

These are the resources and equipment required to complete this activity:

- Operational Unified Communications Manager
- Cisco Unified Contact Center Express (CCX)
- Student PC with MS Windows XP, SP2
- Cisco IP Phone, 7940 or better
- Network connectivity between the Cisco Unified CCX system and the PC workstation
- Cisco Unified CCX Editor

Job Aids

These job aids are available to help you complete the lab activity.

- UCCXD Student Guide
- UCCXD Lab Guide
- Cisco Unified CCX Administration

Server	IP Address
Cisco Unified Communications Manager	10.10.1.10
Cisco Unified CCX	10.10.1.40
Domain Controller / Email Server / External Database Server	10.10.1.2

Stare and Compare

Your instructor has uploaded completed answer scripts for each lab exercise into the script repository. The answer scripts may be viewed, compared, or downloaded using the Script Management page. You may elect to view the answer scripts as an aid to performing your lab.

When you load the answer script into the script editor, use the **Window > Tile Vertically** to allow both your new script and the sample script to appear side-by-side for comparison. Place your working file closest to the Editor Palette pane so you can easily move steps into the script.

The completed script for this activity:

- None

Lab Start and Lab Bypass

It may become necessary or desirable to “catch up” or to simply bypass the activities for a lab. There are completed answer scripts for each lab exercise available on the Script Management page. You may elect to view the answer scripts as an aid to performing your lab or you may simply copy the answer for your solution.

Be sure to keep yourself up to date for each module because many labs are dependent on successfully completing previous labs.

Follow these steps to bypass this lab:

- Most of these labs cannot be bypassed.
- These tasks must be performed in order to continue to the next lab: Tasks 1, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, and 17.

Task 1: Assigning IPCC Extensions to Agents

To use any version of Cisco Unified CCX, you must first assign extensions for the users who will be agents in your Cisco Unified CCX subsystem.

Activity Procedure

To configure a user to be a Cisco Unified CCX agent, complete the following steps:

- Step 1** If the Cisco Unified Communications Manager Administration is not open, open a web browser and enter the following URL: **https:// <Cisco Unified Communications Manager IP Address>/ccmadmin**.
- Step 2** Enter the Cisco Unified Communications Manager login name and password (**administrator, !QAZ@WSX**) at the prompt, and then click **Login**. The Cisco Unified Communications Manager Administration web page appears.
- Step 3** From the Cisco Unified Communications Manager Administration menu bar, choose **User Management > End User**. The User Information for Basic Search web page appears.
- Step 4** Find the user where the user ID is exactly your student ID (student<xx>) and click **Find**.
- Step 5** Click on your user name. The User Configuration page for your user account appears.
- Step 6** Scroll down to the Device Information area of this page.
- Step 7** If your agent phone is not associated with your user, click **Device Association**, and locate your agent phone. Otherwise, go to Step 10.
- Step 8** Click the **Find** button and check the checkboxes for the phone and click **Save Selected Changes** to associate the phone with your user.
- Step 9** To go back to the user page, in the Related Links area (upper-right corner), select **Back to User** and click **Go**.
- Step 10** Scroll down to the Directory Number Associations area.
- Step 11** For the agent phone, set your first directory number as the Primary Extension and set your last directory number as the IPCC Extension.
- Step 12** Make sure that the **Allow Control of Device from CTI** box is checked.
- Step 13** Click **Save** to apply the changes. The End User Configuration page for this user reappears and the update was successful.

Activity Verification

You have completed this task when you attain this result:

- The End User Configuration page for your user appears and the update was successful.

Task 2: Observing RmCm Provider Information

The next step is to provision the RmCm Provider using Cisco Unified CCX Administration. The Resource Manager Contact Manager is used to monitor agent phones, control agent states, and route and queue calls.

When you use Cisco Unified CCX Administration to configure the RmCm Provider, it creates an Application User account in Cisco Unified Communications Manager.

Your instructor has already completed this task. The RmCm Provider account is UCCX_RMJtapi.

Activity Procedure

Follow these steps to observe the RmCm Provider information:

Step 1 From the Cisco Unified CCX Administration page, navigate to **System > Cisco Unified CM Configuration**. The Cisco Unified Communications Manager Configuration page appears.

Step 2 In the RmCm Subsystem page area, observe the following:

Page Area	Property	Value
RmCm Subsystem	Selected CTI Managers	<Communications Manager IP Address>
	User ID	UCCX_RMJtapi
	Password	UCCX_RMJtapi
	Confirm Password	UCCX_RMJtapi

Step 3 You may also go to **Subsystems > RmCm > RmCm Provider** to view the RmCm Provider information. This is a read-only page.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can view the RmCm Provider information.

Task 3: Associating the Agent Phone with the RmCm Provider

This association takes place on the Cisco Unified Communications Manager (Application) user screen. This association will allow the user, UCCX_RMJtapi, to control the Cisco Unified CCX (IPCC) extensions.

Activity Procedure

To associate an agent phone to the RmCm Provider account, complete the following steps:

Step 1 From the Cisco Unified Communications Manager Administration menu bar, choose **User Management > Application User**. The Find and List Application Users page appears.

Step 2 Find the Application User where the User ID begins with UCCX_RMJtapi. The Application User page appears.

Step 3 Click the **UCCX_RMJtapi** user name. The Application User Configuration page for this user appears.

Step 4 In the Device Information area, move your Available Device (your phone) to the Controlled Devices area, using the arrows.

Step 5 Click **Save**. The Application User Configuration page will return.

The Cisco Unified CCX extension on your telephone device has now been associated with user UCCX_RMJtapi. The UCCX_RMJtapi user can now manage the contact center functions for your IPCC Express line. This activity will permit you to log in to your Agent Desktop in a later task.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When your phone definition shows to be associated with the UCCX_RMJtapi user account.

Task 4: Creating Resource Groups

Resource groups are collections of agents that your CSQ uses to handle incoming Cisco Unified CCX calls.

Activity Procedure

To create a resource group, complete these steps:

Step 1 From the Cisco Unified CCX Administration menu bar, choose **Subsystems > RmCm > Resource Groups**. The Resource Groups summary web page opens.

Step 2 Click **Add New** to add a new resource group. The Resource Group Configuration area opens.

Step 3 In the Resource Group Name field, enter the resource group name as **Medics<xx>** (xx=Student Number).

Step 4 Click **Save**. The Resource Groups summary page opens, displaying the new resource group name in the Resource Group Name column.

Activity Verification

You have completed this task when you attain this result:

- Your new resource group appears on the Resource Group configuration page.

Task 5: Creating Skills

Skills are customer-definable attributes that are assigned to agents. Cisco Unified CCX can route incoming calls to qualified agents who have the necessary skills and the minimum competence level to qualify for selection by the CSQ. This task creates a list of skills to be assigned.

Activity Procedure

To create a skill, complete these steps:

Step 1 From the Cisco Unified CCX Administration menu bar, choose **Subsystems > RmCm > Skills**. The Skills summary web page opens.

Step 2 Click **Add New** to add a new skill. The Skill Configuration web page opens.

Step 3 In the Skill Name field, enter the relevant skill, **PhysicianAssistant<xx>** (xx=Student Number).

- Step 4** Click **Save**. The Cisco Unified CCX Configuration Skills summary web page opens, showing the skill in the Skill Name column.

Activity Verification

You have completed this task when you attain this result:

- Your new skill (PhysicianAssistant<xx>) appears in the Skills list.

Task 6: Assigning Resource Groups and Skills to Agents

In Cisco Unified CCX, agents that handle calls are referred to as resources. After you create a resource group, you can assign agents (resources) to that group. An agent can only be assigned to one resource group.

Another method of routing calls is to use skills. You can add skills to agents after the skills have been created. When doing so, you also choose a competency level for that agent in that skill. The competency level indicates the agent level of expertise in that skill (“1” indicating beginner and “10” indicating expert).

Activity Procedure

To assign a resource group and skills to an agent, complete the following steps:

- Step 1** From the Cisco Unified CCX Administration menu bar, choose **Subsystems > RmCm > Resources**. The Resources Summary web page opens. Your agent appears here because you assigned your IPCC Extension to your user account.
- Step 2** Click the name of your agent (student<xx>) in the Resource Name column. The Cisco Unified CCX Resource Configuration web page opens.
- Step 3** Make the following modifications on this page:

Page Area	Property	Value
Resource Configuration	Resource Group	Medics<xx>
	Automatic Available	Enabled
	Assigned Skills	PhysicianAssistant <xx>(5)
	Team	Default

- Step 4** Click **Update** to apply the changes for your user.

Activity Verification

You have completed this task when you attain this result:

- The Resources area of the Cisco Unified CCX Configuration summary web page opens, and the agent is now a member of a resource group (Medics<xx>) and assigned a set of three skills.

Task 7: Creating Contact Service Queues

The CSQ serves as a definition for Cisco Unified CCX to determine which agents will be available to be selected and to which agent to send the call. During a call (run-time), the specific CSQ is determined by processes in the script as a result of information collected from the caller or other methods.

Two types of CSQs can be configured:

- **Resource Group:** Agents are selected from a specific resource (agent) group.

- **Skills:** Agents are selected from a pool of agents based on a combination of assigned skills and competency levels.

Note A CSQ cannot be configured to be both types. It can be either a resource group or a skill-based CSQ, but not both.

Activity Procedure: Create a Resource Group CSQ

To create a new resource group CSQ, complete the following steps:

- Step 1** From the Cisco Unified CCX Administration menu bar, choose **Subsystems > RmCm > Contact Service Queues**. The Contact Service Queues page opens.
- Step 2** Click **Add New** to add a new Contact Service Queue. The first Contact Service Queue Configuration page opens.
- Step 3** Make the following modifications on this page:

Page Area	Property	Value
Contact Service Queue Configuration	Contact Service Queue Name	CSQ_RG<xx>
	Contact Service Queue Type	Voice
	Automatic Work	Enabled
	Wrap-up Time	Enabled, 55 Seconds
	Resource Pool Selection Model	Resource Group
	Service Level	20
	Service Level Percentage	70
	Prompt	- No Selection -

- Step 4** Click **Next**. The second Contact Service Queue Configuration page opens for a resource group CSQ.

- Step 5** Make the following modifications on this page:

Page Area	Property	Value
Contact Service Queue Configuration	Resource Selection Criteria	Longest Available
	Resource Group	Medics<xx>

- Step 6** Click **Show Resources** to observe the agents qualified to be in this selection pool. Your agent should appear. If not, ensure that your agent has been assigned to this resource group.
- Step 7** Click **Add**. The Contact Service Queues list appears with your new CSQ.

Activity Verification

You have completed this task when you attain this result:

- Your new CSQ appears in the CSQ list.

Activity Procedure: Create a Skills-Based CSQ

To create a new skills-based CSQ, complete the following steps:

Step 1 From the Cisco Unified CCX Administration menu bar, choose **Subsystems > RmCm > Contact Service Queues**. The Contact Service Queues page opens.

Step 2 Click **Add New** to add a new Contact Service Queue. The first Contact Service Queue Configuration page opens.

Step 3 Make the following modifications on this page:

Page Area	Property	Value
Contact Service Queue Configuration	Contact Service Queue Name	CSQ_SG<xx>
	Contact Service Queue Type	Voice
	Automatic Work	Enabled
	Wrap-up Time	Enabled, 60 Seconds
	Resource Pool Selection Model	Resource Skills
	Service Level	20
	Service Level Percentage	90
	Prompt	- No Selection -

Step 4 Click **Next**. The second Contact Service Queue Configuration page opens.

Step 5 Make the following modifications on this page:

Page Area	Property	Value
Contact Service Queue Configuration	Resource Selection Criteria	Longest Available
Skills Required	Skills	PhysicianAssistant <xx> (5)

Step 6 Click **Show Resources** to observe the agents qualified to be in this selection pool. Your agent should appear if you have the appropriate skill and competency ratings.

Step 7 Close the **Show Resources** window.

Step 8 Click **Update** to save this CSQ definition. The Contact Service Queue list appears with your new CSQ.

Step 9 If your agent did not show as an available resource, go to the Resources page and adjust your resource (agent) competencies so that your agent will appear on the Show Resources page.

Step 10 Recheck your new CSQ to ensure that your agent will be an available resource.

Activity Verification

You have completed this task when you attain this result:

- Your new Skills CSQ should appear on the CSQ list and your agent should appear when you click **Show Resources**.

Task 8: Configuring Agent-Based Routing—Observe Only

Agent-based routing provides the ability to send a call to a specific agent rather than any agent available in a CSQ. Use the Agent-Based Routing Settings web page to configure system-wide parameters to be used in an agent-based routing application.

Activity Procedure

To observe agent-based routing system-wide settings, complete these steps:

- Step 1** From the Cisco Unified CCX Administration menu bar, choose **Subsystems > RmCm > Agent Based Routing Settings**.
- Step 2** Observe the settings for Automatic Work, a system-wide parameter that determines whether agents involved in agent-based routing automatically move to the Work state after a call.
 - **Enabled:** Causes agents to go into Work state automatically when a call ends.
 - **Disabled (default):** Causes agents to enter Ready or Not Ready state when a call ends, depending on the Automatic Available setting for the agent.
- Step 3** Observe the settings for Wrap-up Time, a system-wide parameter that determines how long the agent can stay in the Work state if Automatic Work is enabled.
 - **Enabled (including a seconds field):** Controls how long the agent can stay in the Work state if Automatic work is enabled. When the timer expires, the agent is placed into whatever state specified by the agent (resource) Automatic Available setting. You must enter an integer between 0 and 7200 to enable the timer.
 - **Disabled:** This setting sets no limit of how long the agent can stay in the Work state if Automatic Work is enabled. The agent must manually make their agent desktop “ready.”
- Step 4** Leave the settings unchanged.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can view the agent based routing settings.

Task 9: Assigning Supervisor Capabilities

A team is a group of agents who report to the same supervisor. When an agent is assigned to a team, it means that the team supervisor can barge in and intercept any call being handled by the agent.

Activity Procedure

When you promote your agent to the supervisor role, the supervisor is then authorized to start and log into the Cisco Supervisor Desktop.

To assign supervisor capabilities to your agent, complete these steps:

- Step 1** From the Cisco Unified CCX Administration menu bar, choose **Tools > User Management > User View**. The User Management page opens.
- Step 2** Observe that your instructor has assigned you the Administrator capability. The Administrator status allows you to log in to the Cisco Unified CCX Administration pages. Also notice that because you have just performed the required steps to make your user an agent, that capability is displayed as well.

- Step 3** Click on your user student user ID.
- Step 4** At the bottom of the page, assign the Supervisor capability to your Selected Capabilities. You will assign the Reporting capability in a later lab.
- Step 5** Click **Update**. Your agent should now show the Administrator, Agent, and Supervisor capabilities.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When your agent definition shows the supervisor capability.

Task 10: Making Team Assignments

A team is a grouping of agents used for management purposes only. When an agent is assigned to a team, any supervisor defined as a supervisor for that team can monitor and perform other supervisory functions for that agent.

Activity Procedure

To add your agent to a team definition and to assign your agent as a supervisor, complete these steps:

Step 1 From the Cisco Unified CCX Administration menu bar, choose **Subsystems > RmCm> Teams**. The Team Configuration page area opens.

Step 2 Click on your team in accordance with the following chart:

Student ID	Team Name
Student 1-4	Agents 1-4
Student 5-8	Agents 5-8
Student 9-12	Agents 9-12
Student 13-16	Agents 13-16

Step 3 Your instructor has made the instructor user the Primary Supervisor. Make your agent a Secondary Supervisor by moving your supervisor to the left pane.

Step 4 Assign your agent (resource) to this team by moving your agent to the left pane.

Step 5 Assign your Resource Group CSQ and your Skills-Based CSQ to this team (CSQ_RG<xx> and CSQ_SG<xx>) by moving your CSQs to the left pane. This action allows the supervisor to view statistics for these CSQs in the Cisco Supervisor Desktop.

Step 6 Click **Save**. The Teams list will appear with the instructor username as a primary supervisor.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can see that your agent has been assigned to the correct team and you also have the supervisor role as well.

Task 11: Installing the Agent and Supervisor Desktop

You will now install the Cisco Agent Desktop and the Cisco Supervisor Desktop on your PC. This is in preparation for the next labs which will allow you to process Cisco Unified CCX calls.

Activity Procedure

To install both the Cisco Agent Desktop and the Cisco Supervisor Desktop, follow these steps:

- Step 1** From the Cisco Unified CCX Administration menu bar, choose **Tools > Plug-ins**.
- Step 2** Click the link, **Cisco Unified CCX Desktop Suites**. The Cisco Unified CCX Desktop Product Suite web page opens, displaying the three options to install.
- Step 3** To install both the agent and supervisor desktops, click **Cisco Unified CCX Supervisor Desktop**. The Product Suite Download page will appear.
- Step 4** To start the installation, click the **Supervisor Desktop** link and choose **Run**.
- Step 5** You may get a security warning. If so, choose to run the program anyway.
- Step 6** At the Welcome screen, click **Next**.
- Step 7** At the Custom Setup screen, click **Next**.
- Step 8** At the Ready to Install screen, click **Install**.
- Step 9** Click **Finish** when prompted. The Cisco Agent Desktop and Cisco Supervisor Desktop have been installed.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When your agent and supervisor desktops have been installed.

Task 12: Starting the Agent Desktop

To test the installation, you will now start the Cisco Agent Desktop and log in.

Activity Procedure

To start the Cisco Agent Desktop, complete these steps:

- Step 1** On your student PC, click the **Start** button and navigate to **Programs > Cisco > Desktop > Agent**. The Cisco Agent Desktop will start.
- Step 2** If a dialog box appears requesting an upgrade for the Cisco Agent Desktop software, click **OK** to perform the upgrade.
- Step 3** Log in with your student ID and password.
- Step 4** Enter your Cisco Unified CCX extension (last line on your phone).
- Step 5** Click **OK**. The Cisco Agent Desktop will start, minimized on your task bar.

Note If you fail to log in, recheck the IPCC Express line (2xx4) association of your user account (student<xx>) and the phone association with the UCCX_RMJtapi account.

- Step 6** Maximize the Cisco Agent Desktop so that it can be seen.
- Step 7** Resize the window to a size that you prefer. The new size will be saved when you close the desktop.

- Step 8** Leave the Cisco Agent Desktop open while you test the Supervisor Desktop. You will test the desktop operation in the next lab.

Activity Verification

You have completed this task when you attain this result:

- The Cisco Agent Desktop opened and you were able to log in.

Task 13: Starting the Supervisor Desktop

To test the installation, you will now start the Cisco Supervisor Desktop and log in.

Activity Procedure

To start the Cisco Supervisor Desktop, complete these steps:

- Step 1** On your student PC, click the **Start** button and navigate to **Programs > Cisco > Desktop > Supervisor**. The Cisco Supervisor Desktop will start.
- Step 2** Log in with your student ID and password.
- Step 3** Click **OK**. The Cisco Supervisor Desktop will start.
- Step 4** Resize the Cisco Supervisor Desktop for your convenience.
- Step 5** In the Team selection drop-down menu, choose your team. The Navigation Tree pane will now show Supervisors, Agents, and IP Phone Agents. If you cannot view your team, recheck your team assignments and the Supervisor Access option on the System Parameters page.
- Step 6** On the left side, there are two main navigation trees, Skill Groups and Agents. In the Agents navigation pane, you can see two categories as well, Agents and Supervisors. Expand the **Supervisors** tree and you should see your supervisor.
- Step 7** Expand the **Desktop Agents** tree and you should see your agent, plus others. This test is complete.

Activity Verification

You have completed this task when you attain this result:

- The Cisco Supervisor Desktop opened and you could log in and see your supervisor and agent.

Task 14: Preparing your Application to Use the icd.aef Script

For this task, you will point your application to the icd.aef script. This will allow you to evaluate this pre-designed script provided by Cisco, as well as to try out the Cisco Agent Desktop and the Cisco Supervisor Desktop.

Activity Procedure

To point your application to the icd.aef script, complete the following steps:

- Step 1** From the Cisco Unified CCX Administration menu bar, navigate to **Applications > Application Management**. The Application Configuration web page appears.
- Step 2** Click on your application hyperlink. The Cisco Script Application web page appears.
- Step 3** Use the Script pull-down menu to select the **SSCRIPT[icd.aef]** script. The page will refresh and display the variable parameters for the new script.

- Step 4** To cause this application to use your CSQ, check the parameter box for CSQ and enter, in quotes, **CSQ_RG<xx>** (xx = Student Number).
- Step 5** Click **Update**.

Activity Verification

You have completed this task when you attain these results:

- Your application is using the icd.aef script.
- The CSQ variable parameter has been checked to use your CSQ (CSQ_RG<xx>).
- Your agent appears in the Show Resources window for your CSQ (CSQ_RG<xx>).
- The Cisco Unified CCX Engine continues to be IN_SERVICE. (See the Control Center).

Task 15: Testing the Script, Agent Desktop, and Basic Call Handling

Now you can test the script and Cisco Agent Desktop to see if you have provisioned everything correctly.

You will test the Cisco Supervisor Desktop in a following lab.

Activity Procedure: Answer Your First Call

Your agent is the only agent in your CSQ at this time. To test the script and the agent desktop by answering a call, complete these steps:

Note	For these next several labs, you will have to work with other student pods to complete the exercises, because you cannot originate a phone call to your script and expect your phone (the phone originating the call) to be able to answer it as well. Other student pods will need you to call their applications, and you will need them to do the same for you.
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- Step 1** Start your Cisco Agent Desktop and log in with your agent login, password, and your Cisco Unified CCX extension.
- Step 2** If the Agent Desktop does not appear, locate it on the task bar and click it. The Cisco Agent Desktop window should appear on your desktop.
- Step 3** If the agent is ready, make the agent **Not Ready**.
- Step 4** Have someone call your application (CTI Route Point, 1xx2). The caller will hear an announcement that there are no representatives available. The call goes into queue—have the caller wait a moment.
- Step 5** Make your Cisco Agent Desktop Ready by clicking the green **Ready** light. The Status should change from Not Ready to Ready to Reserved and the call should arrive.
- Step 6** Answer the call using the **Answer/Drop** icon on the Cisco Agent Desktop. Your agent status should change to Talking. You should now be able to talk with your new friend. Leave the call up.
- Step 7** At the Cisco Agent Desktop window, in the Contact Management window, observe the default Enterprise Data in the left pane. This information is provided by default. You will learn how to change this in a later lesson.
- Step 8** At the Cisco Agent Desktop window, in the Contact Management window, observe the Call Activity Data in the right pane.

- Step 9** Use the Cisco Agent Desktop Answer/Drop icon to drop the call.
- Step 10** Observe your status as being in Work Mode.
- Step 11** Make your agent Not Ready and prepare for the next activity.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can successfully complete ACD phone calls.

Activity Procedure: Do Not Answer the Call, Automatic Not Ready

To test what happens when an agent fails to answer an inbound call. Perform these steps:

- Step 1** Have someone call your application (CTI Route Point, 1xx2). The caller will hear an announcement that there are no representatives available. The caller goes into queue—have them wait a moment.
- Step 2** Make your Cisco Agent Desktop ready by clicking the green **Ready** light. The agent state should change from Not Ready to Ready to Reserved and a call should appear.
- Step 3** Do not answer the call. Your agent state should change from Reserved to Not Ready. You have rejected a call and the system will make your agent Not Ready so that it cannot be selected again. This is good because you may have left your desk without making your agent Not Ready.
- Step 4** Make your Agent Desktop ready by clicking the green **Ready** light. The agent state should change from Not Ready to Ready to Reserved and a call should appear.
- Step 5** Answer the call this time using the **Answer/Drop** icon on the Cisco Agent Desktop. Your agent status should change to Talking.
- Step 6** You can now drop the call.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When your agent desktop goes into agent Not Ready after failing to answer a call.

Activity Procedure: Check Off-Hook Status

To test what happens to the agent status when the agent extension is off-hook, complete these steps:

- Step 1** Make your Cisco Agent Desktop status **Ready**.
- Step 2** Go off-hook using the **Cisco Unified CCX** line on your Agent Phone. Observe what happens to the Agent state. The state should change to Not Ready while you are off-hook.
- Step 3** Have someone call your application (CTI Route Point, 1xx2). The caller will hear an announcement that there are no representatives available. The call goes into queue—have the caller wait a moment.
- Step 4** Hang up the agent line and the agent state will return to the Ready state.
- Step 5** Answer the incoming Cisco Unified CCX call.
- Step 6** Hang up the Cisco Unified CCX call.
- Step 7** Go off-hook using another (non-CCX) line on your Agent phone. Observe what happens to the Agent state. The state should remain Ready while you are off-hook.

- Step 8** Have someone call your application and note that the Cisco Unified CCX extension on the Agent phone is ringing. The Cisco Unified CCX line and other lines are treated differently for off-hook situations because Cisco Unified CCX can only see the Cisco Unified CCX line.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can see that when your agent line is busy, your agent is unavailable for selection.

Task 16: Testing with Multiple Agents in a Resource Group

Now you will test with more than one agent in a resource group. This will require you to pair up with a lab partner so that you can include that partner/agent in your resource group. Find a lab partner.

Activity Procedure

To test call handling with multiple agents in a resource group, complete these steps:

- Step 1** Have one lab partner remove his or her agent from their Resource Group (Medics<xx>) so that that agent can become available to be assigned to the resource group of the other lab partner. That agent now becomes available for assignment to the other partner's resource group, the owner.
- Step 2** Assign that available agent to the owner Resource Group. Now you have two agents in one resource group and you can test the Resource Selection Criteria (linear, curricular, and longest available) in your CSQs.
- Step 3** For the selected CSQ of the owner, check the **Show Resources** feature to ensure that both agents are properly configured and qualify for a call.
- Step 4** Make both agents **Ready**.
- Step 5** For the owner CSQ, from Cisco Unified CCX Administration, navigate to **Subsystems > RmCm > Contact Service Queues > CSQ_RG<xx>**, change the Resource Selection Criteria to **Circular** (on the second page).
- Step 6** Call the owner application several times to see if the calls are distributed in a circular method. Each call should be delivered to alternating agents.
- Step 7** From Cisco Unified CCX Administration, navigate to **Subsystems > RmCm > Contact Service Queues > CSQ_RG<XX>**, change the Resource Selection Criteria to **Linear** (note that you will now be using an ordered list).
- Step 8** Call the application several times to see if the calls are distributed in a linear method. Each call should always be delivered to the first agent in the list, if that agent is available.
- Step 9** On the Cisco Unified CCX Administration Page, change the order of agents so that the other agent gets the call first.
- Step 10** Call the owner application several times to see if the other agent receives the calls.
- Step 11** Change the Resource Selection Criteria to **Longest Available**.
- Step 12** Call the application several times to see if the calls are distributed to the agent logged in and available the longest.

Activity Verification

You have completed this task when you attain this result:

- All calls should perform as expected for the Selection Criteria.

Task 17: Using Skills-Based CSQs to Manage Calls

The previous task used Resource Group CSQs to manage calls directed to agents. This task will use Skills-Based CSQs to select and direct calls to agents with qualifying skills. You previously assigned skills to your agents.

Activity Procedure: Prepare Your Application and Make a Test Call

To enable skills-based routing for your application, complete these steps:

- Step 1** From the Cisco Unified CCX Administration, navigate to **Applications > Application Management**. The Application Configuration web page appears.
- Step 2** Click on your application hyperlink. The Cisco Script Application web page appears.
- Step 3** To cause this application to now use your skills CSQ, check the parameter box for CSQ and enter, in quotes, **CSQ_SG<xx>** (xx = Student Number).
- Step 4** Click **Update**. This will refresh the application.
- Step 5** Check to see that your agent is qualified to receive calls from this CSQ by using the **Show Resources** button on the CSQ page.
- Step 6** If your agent does appear, adjust the skill and competency rating as required.
- Step 7** If your agent is ready, make the agent **Not Ready**.
- Step 8** Have someone call your application (CTI Route Point, 1xx2). The caller will hear an announcement that there are no representatives available. The call goes into queue—have the caller wait a moment.
- Step 9** Make your Cisco Agent Desktop ready by clicking the green **Ready** light. The Status should change from Not Ready to Ready to Reserved and a call should appear.
- Step 10** Answer the call using the **Answer/Drop** icon on the Cisco Agent Desktop. Your agent status should change to Talking. You should now be able to talk with yourself.
- Step 11** Hang up the call.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can successfully make agent calls with your skills based CSQ.

Task 18: Supervisor Activities

For this task, you will open your Cisco Supervisor Desktop and observe your team activity. You will use the existing configurations for CSQs and skills to test Supervisor functions. Currently, all student pods should be using their own CSQ definition and their own agents are the only participants in their CSQ. This will make this testing easier because the call routing will be predictable: If you call the route point for Student 1, then you know that Student 1 will be the agent that can answer the call.

Activity Procedure: Monitor an ACD Call

The following exercise will require your agent to be using the same skills as in the previous exercise.

To monitor an active call, complete the following steps:

- Step 1** Have a partner make a call to another application within your team and have an agent answer the call. The agent to be monitored must be on an active ACD call.
- Step 2** As a supervisor, put on your headset and select (highlight) that agent in the Team View pane.
- Step 3** Click the **Start Voice Monitor** button, or choose **Intervention > Start Voice Monitor**. Listen to what the agent and caller are saying.
- Step 4** To stop monitoring an agent on an active call, click the **Stop Voice Monitor** button, or choose **Intervention > Stop Voice Monitor**.
- Step 5** Disconnect the call.
- Step 6** Repeat the steps in this activity until all of your partners have had a chance to monitor an active agent call.

Activity Verification

You have completed this task when you attain this result:

- All lab partners successfully monitored an active agent call.

Activity Procedure: Barge In on an ACD Call

To barge in on an active call, complete these steps:

- Step 1** Have a partner make a call to another application within your team and have an agent answer the call.
- Step 2** In the Team View pane, select the Inbound active agent call (This is a subcategory of the icon highlighted in the previous exercise).
- Step 3** Click **Barge-In** or choose **Intervention > Barge-In**. You are added to the call. Visit with everyone.
- Step 4** During the conference call, click **Intercept** to disconnect the agent from the conference call and continue talking with the remaining parties.
- Step 5** Disconnect the call.
- Step 6** Repeat the steps in this activity until all of your partners have had a chance to barge in on an active agent call.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to barge in on an ACD call.

Activity Procedure: Intercept an ACD Call

To intercept an active call, complete these steps:

- Step 1** Have a partner make a call to another application within your team and have an agent answer the call.
- Step 2** In the Team View pane, select the Inbound active agent call.

- Step 3** Click **Intercept** or choose **Intervention > Intercept**. The call will be transferred to you. Chat a bit with the caller and explain why you are on the call.
- Step 4** Disconnect the call.
- Step 5** Repeat the steps in this activity until all of your partners have had a chance to intercept an active agent call.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to intercept an ACD call.

Activity Procedure: Record an Active Call

To record an active call, complete these steps:

- Step 1** Have a partner make a call to another application within your team and have an agent answer the call.
- Step 2** To record a call from the supervisor desktop, in the Team View pane, highlight the Inbound active agent call.
- Step 3** Click the **Start Record** button, or choose **Intervention > Call/Agent Start Recording**.
- Step 4** When you are finished recording, click the **Stop Record** button, or choose **Intervention > Call/Agent Stop Recording**.
- Step 5** Disconnect the call.
- Step 6** Repeat the steps in this activity until all of your partners have had a chance to record an active agent call.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to record an ACD call.

Activity Procedure: Listen to the Recorded Call

Now that you have recorded a call from the Cisco Supervisor Desktop, you can now listen to the recording.

To listen to a recorded call, complete these steps:

- Step 1** Install either a headset or speakers on the sound board of your computer.
- Step 2** To listen to a recording, from the Cisco Supervisor Desktop, select **Tools > Recorded files....** The Supervisor Record Viewer window opens.
- Step 3** From the Day Select section of Supervisor Record Viewer, click the radio button for the date of the recording that you want to review.
- Step 4** Select the recording you want to review.
- Step 5** Click the **Play** button, or choose **Recording > Play** from the menu bar.
- Step 6** Use the **Pause** or **Stop** buttons to control the recording playback, and the volume slider to control the playback volume.
- Step 7** Click the progress bar and drag it backwards or forwards to rewind or fast-forward the recording. You must click **Play** again after you reposition the progress bar to restart the playback.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to listen to a recorded ACD call.

Activity Procedure: Tag a Recording for Extended Lifetime Archiving

You can extend the life of a recording from 7 days to 30 days by using the Extended Archive feature.

To archive a recording for 30 days, complete these steps:

- Step 1** Select the recording that you want to archive for 30 days.
- Step 2** Click the **Set Extended Lifetime** button, or choose **File > Set Extended Lifetime** from the menu bar. The recording is now tagged to be archived for 30 days from the date of recording.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can see that your recording is tagged for archiving.

Activity Procedure: Save a Recording for Permanent Archiving

A recording can be saved to a hard drive location to be permanently archived.

To permanently archive a recording, complete these steps:

- Step 1** Select the recording that you want to save.
- Step 2** Click the **Play and Save** button, or choose **Recording > Play and Save** from the menu bar. The Save As dialog box appears.
- Step 3** Select a folder to save the recording to, enter a file name for the recording, and then click **Save**. The recording plays and simultaneously is saved as a .wav file to the location that you selected.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to save a recorded ACD call.

Activity Procedure: Change Agent State

To change the agent state for a specific agent, complete these steps:

- Step 1** From the Team View pane, select the agent whose state you want to change.
- Step 2** On the toolbar, click the appropriate agent state button.
- Step 3** Observe the icon next to the agent name in the Team View pane to see if the change that you selected took effect.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to change an agents state via your supervisor desktop.

Activity Procedure: Chat with an Agent

To start a chat session with another agent on your team, complete these steps:

- Step 1** On the Cisco Supervisor Desktop toolbar, click **Chat**. The Chat Selection window appears. The window lists the logged-in agents and supervisors with whom you can chat.
- Step 2** Double click (or right-click and choose **Chat**) on the name of the agent or supervisor with whom you wish to chat. A Chat Session window appears and a chat session is initiated with the selected people. You can then send a message to multiple recipients.
- Step 3** Type your message in the text entry field.
- Step 4** To make your message immediately noticed on the recipient screen, check the **High Priority** check box.
- Step 5** Click **Send** or press **Enter**. Your message is sent to your chat partner and logged in the chat log pane. Chat with your partner. Replies from recipients of a group message appear in individual chat session windows. They cannot reply to the group, they can only reply to you.
- Step 6** To terminate this chat session, click **Close** in the upper right corner of the Chat Session window.
- Step 7** Repeat the steps in this activity so that all of your lab partners have a chance to initiate a chat session.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to chat with a fellow student.

Activity Procedure: Send a Team Message

To send a Team Performance Message to all the agents on your team, complete these steps:

- Step 1** On the Cisco Supervisor Desktop, click the **Team Message** toolbar button or choose **View > Team Messages**.
- Step 2** Type your message in the text box. The message can be up to 200 characters long.
- Step 3** In the Expires At field, set a time for the message to expire. By default, the message runs for 30 minutes.
- Step 4** Click **Start** or press **Enter**. The message is sent to the team for the length of time you chose. The text of the message you sent is logged in the current team performance message field.
- Step 5** To cancel the message, click **Stop**.
- Step 6** Repeat the steps for this activity until all of your lab partners have initiated a team message.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can see the team banner displayed on your agent desktop.

Activity Procedure: Set Report Preferences

To view and edit Report Preferences, complete these steps:

- Step 1** From the Supervisor Desktop menu bar, choose **View > Preferences**. The Preferences dialog box appears.
- Step 2** In the left pane, under Contact Service Queues, choose **Voice**. The right pane will change.
- Step 3** To configure the columns to be viewed, in the right pane, select **Columns** and then expand with the expression symbol (...).
- Step 4** Observe the columns to be displayed, including the priority calls.
- Step 5** Click **OK** to return to the Preferences page.
- Step 6** Choose **Graphical Displays** and then expand with the expression symbol (...).
- Step 7** Check the box for **Agents Ready** to enable the graphical display of agents ready. Note that you can only check one box to display.
- Step 8** Check the box to **Enable Moveable Windows**.
- Step 9** Check the box to **Enable the Integrated Browser**.
- Step 10** Highlight **Browser** in the left pane and redefine the home page for the browser.
- Step 11** Click **OK** and observe that the browser opens in your home page.
- Step 12** To return back to the real-time displays, locate and select the tab for **Real Time Displays** at the bottom of your page.
- Step 13** Observe the new graphical display for Skill Groups - Agents Ready.
- Step 14** Now that you can move windows, move the graphical display (drag and drop) to the bottom of the screen.
- Step 15** Move the various windows around to suite your preferences. To “stick” the windows back into the supervisor display, double-click the title bar of the window.
- Step 16** Click on the various CSQ names and note the default reports displayed for the supervisor.
- Step 17** If you wish to restore the default preferences, return to the Preferences window and select **Restore Default Layout** and click **OK**.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to edit report preferences in your supervisor desktop.

Activity Procedure: View Agent and Team Reports

To view team reports, complete these steps:

- Step 1** If you have enabled the integrated browser, on the right pane of the CSD, select the **Real Time Displays** tab (at the top of the pane).
- Step 2** From the Cisco Supervisor Desktop left pane, select all CSQs. By default, three skill group reports appear in the Real Time Displays.
- Step 3** Experiment with other reports to see what information is available.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to view agent and team reports from your supervisor desktop.

Activity Procedure: Push a URL to an Agent

You can assist by pushing a URL to an agent desktop.

To push a URL to an agent desktop, complete these steps:

- Step 1** Check to see if the agent that you will be monitoring has the integrated browser opened.
- Step 2** To push a web page to the agent, choose **Intervention > Coach by pushing a page**. The Push URL to Agents dialog box appears.
- Step 3** Enter the URL of the web page that you want the agent to see.
- Step 4** Click **Push** to send the web page to the agent.
- Step 5** The web page that you pushed to the agent is displayed in the first tab of the integrated browser of the agent. This tab is reserved for pushed web pages.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to push a URL and the website is displayed on the agent desktop.

Task 19: Implementing IP Phone Agent (Optional)

The Cisco Unified CCX Standard package only supports the IP Phone Agent for agent control. Therefore, most integrators will need to know how to implement an IP Phone Agent.

Many of the steps required to set up IP Phone Agent have already been performed for you. If you desire, refer to your student guide and check that these entries are in place:

- The telecaster Application User has been created and is associated with the Standard CTI Enabled User Group.
- Your IP phone is associated with the telecaster application user account.
- The URL Authentication parameter has been set correctly.
- The BIPPA user login is set correctly (This can be viewed from the Cisco Desktop Administrator).

Activity Procedure: Create an IP Phone Agent Service

To set up an IP Phone Agent Service, complete the following steps:

- Step 1** Log off and close Cisco Agent Desktop.
- Step 2** In Unified Communications Manager Administration, navigate to **Device > Device Settings > Phone Services**. The Find and List IP Phone Services window displays.
- Step 3** To add an IP phone service, click the **Add New** button. The IP Phone Services Configuration window appears.

Step 4 On the IP Phone Services Configuration page, enter the following information (the URL is case-sensitive):

Field Name	Description
Service Name:	IP Phone Agent <xx>
ASCII Service Name	IP Phone Agent <xx>
Service Description:	Student <xx> IP Phone Agent Service
Service URL:	http://<Unified_CCX IP Address>:6293/ipphone/jsp/sciphonexml/IPAgentInitial.jsp
Service Category	XML Service
Service Type	Standard IP Phone Service
Enable	Checked

Step 5 Click **Save**.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can view your IP Phone Agent service in the list.

Activity Procedure: Subscribe to Your IP Phone Agent Service

To subscribe to an IP Phone Agent Service, complete the following steps:

- Step 1** From the Cisco Unified Communications Manager Administration page, choose **Device > Phone**. The Find and List Phones window opens.
- Step 2** Use the Find function to find your agent phone.
- Step 3** Click the hyperlink for your phone. The Phone Configuration window appears.
- Step 4** In the upper-right corner of the page, select **Subscribe/Unsubscribe Services** from the Related Links drop-down list. Click **Go**. A popup window for subscribing to services for that device appears.
- Step 5** From the Select a Service drop-down list, choose your new service, and then click **Next**. A popup window for Service Information appears.
- Step 6** Click **Subscribe**. You can now close the popup window.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can see that your IP Phone Agent service is associated to your phone.

Activity Procedure: Test Your IP Phone Agent Service

To test the new IP Phone Agent Service, complete the following steps:

- Step 1** Press the **Services** button on your agent phone. The screen of your agent phone displays the Services menu.
- Step 2** Select **Student <xx> IP Phone Agent** from the menu. The IP Agent Login screen is displayed.

- Step 3** Using the keypad on your phone, enter your user ID, password, and agent extension to log in as an agent. Press **Submit** when you are ready. You should now be logged in and in the Not Ready state.
- Step 4** Press the **State** button and change your state to Ready.
- Step 5** Have someone call your application to verify that you are still an agent.
- Step 6** Play a few moments with the features in IP Phone Agent. When you are done, be sure to log off.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can make successful ACD calls to your IP phone.

Lab 4-2: Cisco Unified Contact Center Express Scripting

Complete this lab activity to practice what you learned in module 4 lesson 2.

Activity Objective

In this activity, you will create a Cisco Unified CCX script. This will be a new script used to service a small call center for your “Physicians Member Services.” After completing this activity, you will be able to meet these objectives:

- Use Cisco Unified CCX script steps to create a basic ACD script
- Test and debug the script for successful operation

Required Resources

These are the resources and equipment required to complete this activity:

- Operational Cisco Unified Communications Manager
- Cisco Unified CCX
- Student PC with MS Windows XP, SP2
- Cisco IP Phone, 7940 or better
- Network connectivity between the Cisco Unified CCX system and the PC workstation
- Cisco Unified CCX Editor

Job Aids

These job aids are available to help you complete the lab activity.

- UCCXD Student Guide
- UCCXD Lab Guide
- Cisco Unified CCX Administration

Server	IP Address
Cisco Unified Communications Manager	10.10.1.10
Cisco Unified CCX	10.10.1.40
Domain Controller / Email Server / External Database Server	10.10.1.2

Cisco Unified CCX Editor Steps

These editor steps are used in this lab activity:

Script Editor Steps	Description
Select Resource	Use the Select Resource step to queue a call to a specific set of agents and optionally to connect the call to the agent the system chooses.
Call Hold	Use the Call Hold step to put a call on hold.
Call Unhold	Use the Call Unhold step to re-establish the connection with a call that you have previously put on hold by means of the Call Hold step.

Stare and Compare

Your instructor has uploaded completed answer scripts for each lab exercise into the script repository. The answer scripts may be viewed, compared, or downloaded using the Script Management page. You may elect to view the answer scripts as an aid to performing your lab.

When you load the answer script into the script editor, use the **Window > Tile Vertically** to allow both your new script and the sample script to appear side-by-side for comparison. Place your working file closest to the Editor Palette pane so that you can easily move steps into the script.

The completed script for this activity:

X801_04-2_MemberServices.aef

Lab Start and Lab Bypass

It may become necessary or desirable to “catch up” or to simply bypass the activities for a lab. There are completed answer scripts for each lab exercise available to the student on the Script Management page. You may elect to view the answer scripts as an aid to performing your lab or you may simply copy the answer for your solution.

Be sure to keep yourself up-to-date for each module because many labs are dependent on successfully completing previous labs.

Follow these steps to bypass this lab:

- Download X801_04-2_MemberServices.aef and save as MemberServices<xx>.aef in your Student Scripts directory.
- **Validate**, **Save**, and **Upload** the new script.
- Choose your new script on your application page. Be sure that you check the CSQ variable and enter your skills CSQ (CSQ_SG<xx>).

Task 1: Creating Your New Cisco Unified CCX Script

In this task, you will create a basic Cisco Unified CCX script.

Activity Procedure

To create a new Physicians Member Services script, complete the following steps:

- Step 1** Open your script editor and on the toolbar click the **File New** icon.
- Step 2** After the Start step, add an **Annotate** step to document your script. You might indicate who the author is, when it was created, and what it is designed to do.
- Step 3** After the Annotate step, add an **Accept** step to accept the call.
- Step 4** After the Accept step, add a **Label** step, name it **TERMINATE_END**.
- Step 5** After the Label step, add a **Terminate** step.
- Step 6** After the Terminate step add a **Label** step, name it **END**.
- Step 7** Save the script (**Save As**) to your student scripts directory. Use the name: **MemberServices<xx>.aef**. (xx = student pod number)
- Step 8** Create the following variables:

Type	Name	Value	Attributes
final String	promptDir	"MS\"	Final
String	greetingMsg	promptDir + "MS_GreetingMsg.wav"	
String	agentsUnavailablePrompt	promptDir + "MS_AgentsUnavailable.wav"	
String	csqID	"CSQ_SG<xx>"	Parameter
User	resourceID	null	

- Step 9** After the Accept step, add a **Play Prompt** step and use these properties:

Tab	Property	Value or Option
General	Contact	--Triggering Contact--
	Interruptible	Yes
Prompt	Prompt	greetingMsg
	Barge In	Yes
	Continue on Prompt Errors	Yes
Input	Flush Input Buffer	Yes

Step 10 After the Play Prompt step, add a **Select Resource** step and use these properties:

Tab	Property	Value or Option
General	Contact	--Triggering Contact--
	Routing Target Type	Contact Service Queue
	CSQ Target	csqID
	Connect	Yes
	Timeout	10
	Resource Selected	resourceID

Step 11 For the Connected output branch of the Select Resource step, add a **Goto** step to go to the **END** label.

Step 12 For the Queued output branch of the Select Resource step, add a **Label** step, name it **QUEUE_LOOP**.

Step 13 After the queue loop label, add a **Play Prompt** step and use these properties:

Tab	Property	Value or Option
General	Contact	--Triggering Contact--
	Interruptible	Yes
Prompt	Prompt	agentsUnavailablePrompt
	Barge In	Yes
	Continue on Prompt Errors	Yes
Input	Flush Input Buffer	Yes

Step 14 After the Play Prompt step, add a **Call Hold** step.

Step 15 After the Call Hold step, add a **Delay** step to delay the script for **20** seconds.

Step 16 After the Delay Step, add a **Call Unhold** step.

Step 17 After the Call Unhold step, add a **Goto** step to go to the **QUEUE_LOOP** label.

Step 18 **Validate**, **Save**, and **Upload** your script.

Step 19 In Cisco Unified CCX Administration, navigate to your application page. On this page, use the script drop-down menu to select your new **MemberServices<xx>.aef** script.

Step 20 Have someone call your application (CTI Route Point, 1xx2). If your agent is logged in and ready, you should receive the call.

Step 21 Debug your script to ensure correct operation of the script.

Activity Verification

You have completed this task when you attain this result:

- Your new script, MemberServices<xx>.aef, appears in the Script Management page and you are able to receive ACD calls via this script.

Lab 4-3: Using the Cisco Desktop Work Flow Administrator

Complete this lab activity to practice what you learned in module 4 lesson 3.

Activity Objective

In this activity, you will use the Cisco Desktop Work Flow Administrator to customize your Cisco Agent Desktop and modify your script to provide for CTI activity. After completing this activity, you will be able to meet these objectives:

- Install the Cisco Desktop Work Flow Administrator
- Create reason codes
- Create wrap-up data
- Define enterprise data fields
- Create a layout list
- Create a work flow group
- Set thresholds using the call activity tab
- Apply reason codes to your work flow group
- Apply wrap-up data to your work flow group
- Create a task button for a high priority chat to your supervisor
- Create a task button to launch an Internet web site
- Create a task button to transfer a call to your supervisor
- Create task buttons to start and stop recording
- Enable the integrated browser
- Automatically launch an excel spreadsheet on your Agent Desktop when you log in
- Configure a rules-based screen pop based on caller input
- Associate your agent to a work flow group
- Modify your script to collect caller input for CTI activity

Required Resources

These are the resources and equipment required to complete this activity:

- Operational Cisco Unified Communications Manager
- Cisco Unified CCX
- Student PC with MS Windows XP, SP2
- Cisco IP Phone, 7940 or better
- Network connectivity between the Cisco Unified CCX system and the PC workstation
- Cisco Unified CCX Editor

Job Aids

These job aids are available to help you complete the lab activity.

- UCCXD Student Guide
- UCCXD Lab Guide
- Cisco Unified CCX Administration

Server	IP Address
Cisco Unified Communications Manager	10.10.1.10
Cisco Unified CCX	10.10.1.40
Domain Controller / Email Server / External Database Server	10.10.1.2

Cisco Unified CCX Editor Steps

These editor steps are used in this lab activity:

Script Editor Steps	Description
Set Enterprise Call Info	Use the Set Enterprise Call Info step to send data from one part of your system to another.
Connect	Use the Connect step to connect a contact to the specified resource.

Stare and Compare

Your instructor has uploaded completed answer scripts for each lab exercise into the script repository. The answer scripts may be viewed, compared, or downloaded using the Script Management page. You may elect to view the answer scripts as an aid to performing your lab.

When you load the answer script into the script editor, use **Window > Tile Vertically** to allow both your new script and the sample script to appear side-by-side for comparison. Place your working file closest to the Editor Palette pane so that you can easily move steps into the script.

The completed script for this activity:

- X801_04-3_MemberServices.aef

Lab Start and Lab Bypass

It may become necessary or desirable to catch up or to simply bypass the activities for a lab. There are completed answer scripts for each lab exercise available on the Script Management page. You may choose to view the answer scripts as an aid to performing your lab or you may simply copy the answer for your solution.

Be sure to keep yourself up-to-date on each module because many labs are dependent on successfully completing previous labs.

Follow these steps to catch up or to start this lab:

- Download X801_04-2_MemberServices.aef and save as MemberServices<xx>.aef in your Student Scripts directory.

- **Validate, Save, and Upload** the new script.
- Choose your new script on your application page. Be sure that you check the CSQ variable and enter your skills CSQ (CSQ_SG<xx>).

Follow these steps to bypass this lab:

- If your instructor performs these labs as an instructor demo, then you can download the script file X801_04-3_MemberServices.aef and save it to your student scripts directory as MemberServices<xx>.aef. Upload this script to the repository.
- If your instructor does not perform the labs, then you will need to do all the tasks except for Task 18. For Task 18, save the Member Services script indicated in the previous bulleted item.

Instructor Demo

Even though the procedures were written so that a learner can perform them, it is expected that most of these tasks will be performed by the instructor as an instructor demo.

Task 1: Installing the Cisco Desktop Work Flow Administrator

The Cisco Desktop Work Flow Administrator can be installed from the same location where the Agent and Supervisor Desktops were located.

Activity Procedure

Installing the Cisco Desktop Work Flow Administrator is a similar procedure to installing the Cisco Supervisor Desktop.

To install the Cisco Desktop Work Flow Administrator, complete these steps:

- Step 1** On your student PC, if you have not already done so, close the Agent and Supervisor desktops.
- Step 2** In Cisco Unified CCX administration, navigate to **Tools > Plug-ins**. Click **Cisco Unified CCX Desktop Suites**, and then click **Cisco Unified CCX Desktop Administrator**.
- Step 3** At the save file dialog box, click **Run**.
- Step 4** At the security warning dialog box, click **Run**.
- Step 5** Click **Next**, **Next** again, and then click **Install** to install the program.
- Step 6** Click **Finish** when completed.
- Step 7** To start the Desktop Work Flow Administrator, navigate to **Start > Programs > Cisco > Desktop > Admin**.

Activity Verification

You have completed this task when you attain this result:

- Your Cisco Desktop Work Flow Administrator opens.

Task 2: Creating Reason Codes (Instructor Demo)

Reason codes establish the reason that an agent logged out or invoked the Not Ready state. In this task, you will create a reason code for Not Ready and another for Logout.

Activity Procedure

To create reason codes, complete the following steps:

- Step 1** In the Cisco Desktop Work Flow Administrator, navigate to **Call Center 1 > Work Flow Configuration**, and click **Reason Codes**.
- Step 2** On the Logout tab, click **Edit Master List**.
- Step 3** Add some Codes:
 - 1 – Lunch Break (Prefix the number with your student number—for example: **11 – Lunch Break**)
 - 2 – Training/Meetings
 - 3 – End of Day
 - 4 – Scheduled Break
 - 5 – Unscheduled Break
 - 6 – Additional Wrap Time
- Step 4** Click **Done** when you have finished, and then click **Apply**.

Activity Verification

You have completed this task when you attain this result:

- Your reason codes appear in the available reason code list.

Task 3: Creating Wrap-Up Data (Instructor Demo)

Wrap-up data is used at the end of a call so that the agent can indicate the purpose of a call.

Activity Procedure

To create wrap-up data, complete the following steps:

- Step 1** In the Cisco Desktop Work Flow Administrator, navigate to **Call Center 1 > Work Flow Configuration**, and click **Wrap-Up Data**.
- Step 2** Click the button to modify the list. Enter some wrap-up data, such as:
- Update Address (Prefix your student number to the data—for example: **01 – Update Address**)
 - Update Phone Number
 - Update Zip Code
 - Other – Caller entered wrong queue
- Step 3** Click **OK** when you have finished and then click **Apply**.

Activity Verification

You have completed this task when you attain this result:

- Your wrap-up codes appear in the available Wrap-Up Descriptions list.

Task 4: Defining Enterprise Data Fields (Instructor Demo)

The Enterprise Data system allows you to pass information from the script to an agent desktop. Before you can use Enterprise Data, you must define the enterprise data field names first.

Activity Procedure

To define enterprise data field names, complete the following steps:

- Step 1** Access the Cisco Desktop Administrator.
- Step 2** In the Desktop Administrator navigation pane, navigate to **Services Configuration > Enterprise Data**, and click **Fields**. Note the pre-set fields that are already in place.
- Step 3** To add a new field name, click **Add New**.
- Step 4** Fill out the fields:
- Field Name: MemberID
 - Display Name: Member ID
 - Expanded Call Context: Scalar
 - Field Index: Use value present
- Step 5** Click **Save** to save your entries.
- Step 6** Repeat the previous steps to add these Enterprise Data fields:
- PhoneNumber

- ArrivalType
- MemberName

Step 7 Keep the Desktop Administrator open at this place for the next task.

Activity Verification

You have completed this task when you attain this result:

- Your Enterprise Data fields appear in the list.

Task 5: Creating a Layout List (Instructor Demo)

A layout list is a definition that defines which Enterprise Data fields are displayed and their order on an agent desktop when a call arrives. Each layout list can contain up to 16 ordered fields chosen from the fields of the Enterprise Data field list.

Because there can be many layout lists, the agent desktop needs a method of knowing, on a call-by-call basis, which layout list to use. The layout list that the desktop will use is based on one of the Enterprise Data fields that you populate from the script. That field is a predefined data field called `user.layout` (Field #252). The field, `user.layout`, must contain the name of the layout list that you want the agent desktop to use. If you specify a value in `user.layout` and it does not correlate to a layout list name, the agent desktop Enterprise Data window will have no entries. If you do not populate `user.layout`, then the agent desktop Enterprise Data will be populated by the default layout list values.

Activity Procedure

To create a layout list, complete these steps:

- Step 1** Your Desktop Administrator should still be open from the last task. In the Desktop Administrator navigation pane, click **Layout List**.
- Step 2** Click **Add New** to add a new list.
- Step 3** Enter a name for the layout list; name it **Layout<xx>**.
- Step 4** Highlight and move these Enterprise Data fields to the Selected column:
- Layout
 - DNIS
 - ANI
 - Member ID
 - Phone Number
 - Arrival Type
 - Member Name
- Step 5** Click **Save**.

Activity Verification

You have completed this task when you attain this result:

- Your layout list appears in the list.

Task 6: Creating a Work Flow Group (Instructor Demo)

A work flow group is a set of definitions that define the look, feel, and actions that an agent desktop will be capable of. This includes defining which reason codes, wrap-up codes, task buttons, and CTI activities appear on the desktop.

After a work flow group is defined, it may be applied to one or more agents, as desired. The association of a work flow group is to the agent, not necessarily any group or team.

Activity Procedure

To create a work flow group, complete these steps:

- Step 1** In the Cisco Desktop Work Flow Administrator startup window, expand **Call Center 1**, expand **Work Flow Configuration**, and highlight **Work Flow Groups**.
- Step 2** On the menu or toolbar, choose **File > New**.
- Step 3** Enter a name for your work flow group: **Student<xx>**.
- Step 4** Click **OK**.
- Step 5** If desired, you could import work flow actions. No action is needed here.

Activity Verification

You have completed this task when you attain this result:

- Your new work flow group appears in the list.

Task 7: Setting Thresholds Using the Call Activity Tab (Instructor Demo)

The Call Activity tab enables you to set the thresholds for call duration at a particular type of device (CSQ and Agent) while a call is in the contact center. If a call remains at a device longer than the defined Caution or Warning threshold, a Caution or Warning icon is displayed next to the device name in the call activity pane of the Enterprise Data window.

The Warning threshold value must be greater than the Caution threshold value. If you enter a greater value in the Caution field, Desktop Administrator automatically changes it so that it is one second less than the Warning value. Check the **Show Call Activity** check box to enable the agent to view call activity data in the Enterprise Data window.

Activity Procedure

To configure the caution and warning thresholds for call duration alerts, complete these steps:

- Step 1** In the Cisco Desktop Work Flow Administrator, locate and expand the work flow group that you created in the last task (Student<xx>).
- Step 2** Click **Enterprise Data** and when the window comes up, click the **Call Activity** tab.
- Step 3** First, set the Warning levels:
 - For the CSQ, select **2 minutes and 10 seconds**.
 - For the Agent, select **1 minute and 35 seconds**.
- Step 4** Next, set the Caution levels. (keep them short for training purposes):
 - For the CSQ, select **45 seconds**.
 - For the Agent, select **50 seconds**.

- Step 5** Click **Apply**. During a call, you will see the caution and warning signals in the Cisco Enterprise Data window on your Agent Desktop.

Activity Verification

You have completed this task when you attain this result:

- You see the values populated but you will not be able to test the operation until you complete some ACD calls.

Task 8: Apply Reason Codes to Your Work Flow Group (Instructor Demo)

In a previous task, you created some reason codes. Now you will apply them to your work flow group.

Activity Procedure

To apply reason codes to a work flow group, complete these steps:

- Step 1** In the Cisco Desktop Work Flow Administrator, locate and expand your Work Flow Group.
- Step 2** Click **Reason Codes**.
- Step 3** On the **Logout** tab, highlight and move the appropriate reason codes (Lunch Break, Training/Meetings, and End of Day) to the Work Flow Group pane.
- Step 4** Check the check box to enable the reason codes.
- Step 5** Click the **Not Ready** tab.
- Step 6** On the **Not Ready** tab, highlight and move the appropriate reason codes (Scheduled Break, Unscheduled Break, and Additional Wrap Time) to the Work Flow Group pane.
- Step 7** Check the check box to enable the reason codes.
- Step 8** Click **Apply**.

Activity Verification

You have completed this task when you attain this result:

- You see the values populated but will not be able to test the operation until you complete some ACD calls.

Task 9: Apply Wrap-Up Data to Your Work Flow Group (Instructor Demo)

In a previous task, you created some wrap-up data. Now you will apply the data to your Work Flow Group.

Activity Procedure

To apply wrap-up data to a work flow group, complete these steps:

- Step 1** In the Cisco Desktop Work Flow Administrator, locate and expand your Work Flow Group.
- Step 2** Click **Wrap-Up Data**.

- Step 3** Highlight the Wrap-Up Data that you created in Task 3 and move it to the Work Flow Wrap-Up Data area.
- Step 4** Check the check box to enable wrap-up data.
- Step 5** Click **Apply**.

Activity Verification

You have completed this task when you attain this result:

- You see the values populated but will not be able to test the operation until you complete some ACD calls.

Task 10: Task Button #1—High-Priority Chat with Supervisor (Instructor Demo)

This task sets the task button #1 to invoke a high-priority chat with a supervisor during a call.

Activity Procedure

To create a high-priority chat task button, complete these steps:

- Step 1** Expand your new Work Flow Group.
- Step 2** Click **CAD Agent** and then **User Interface**. The User Interface Setup window opens.
- Step 3** Highlight the desired task button to be used, in this case **Task1**.
- Step 4** Check **Visible** to show the button on the desktop.
- Step 5** In the Hint field, enter **Emergency Chat**.
- Step 6** In the Actions area, click the **Add** button. The Select Action page appears with multiple tabs.
- Step 7** Select the **Utility Action** tab. The chat function is a utility that Cisco provides.
- Step 8** Click the **New** button to create a new action. The Utility Action Setup window appears.
- Step 9** Enter the following parameters:

Field Name	Description
Action Name	Emergency Chat w/ Supv
Action Type	High Priority Chat
Message	Help Student<XX>

- Step 10** Click **OK**. Click **Add Action**. The User Interface Setup window appears.
- Step 11** Click the **Customize Icon** button. The Choose Icon window opens.
- Step 12** Select a customized icon which best represents a chat from the list of available icons.
- Step 13** Click **OK** to return to the User Interface Setup window so that you can add other tasks.

Activity Verification

You have completed this task when you attain this result:

- You see the new task button in the user interface window but will not see it on your desktop until you have completed this portion of the labs and you have restarted the agent desktop.

Task 11: Task Button #2—Launch an Internet Website (Instructor Demo)

The following exercise directs you to configure a User Interface button (Task Button #2) to launch an Internet website. Configuring a task button to perform this task saves the agent time by automatically performing routine tasks.

Activity Procedure

To launch an Internet website, such as CCM Admin, complete these steps:

- Step 1** From the User Interface Setup window, select **Task 2**.
- Step 2** Check **Visible** to show the button on the desktop.
- Step 3** In the Hint field, enter **CCM Admin**.
- Step 4** In the Actions area, click the **Add** button. The Select Action page appears with multiple tabs.
- Step 5** Select the **Launch External Application** tab. The Select Action window appears.
- Step 6** Click the **New** button to create a new action. The Launching External Application Action Setup window appears.
- Step 7** Enter the following parameters:

Field Name	Description
Action Name	CCM Admin
Application	https:// <Unified Communications Manager IP Address> /ccmadmin
Arguments	N/A

- Step 8** Click **OK**. Click **Add Action**. The User Interface Setup window appears.
- Step 9** Click the **Customize Icon** button. The Choose Icon window opens.
- Step 10** Select a customized icon which best represents a website from the list of available icons.
- Step 11** Click **OK** to return to the User Interface Setup window so that you can add other tasks.

Activity Verification

You have completed this task when you attain this result:

- You see the new task button in the user interface window but do not see it on your desktop until you have completed this portion of the labs and you have restarted the Agent Desktop.

Task 12: Task Button #3—Transfer Call to Supervisor (Instructor Demo)

The last task button will easily transfer a call to the supervisor.

Activity Procedure

To configure a task button to transfer a call to the supervisor, complete these steps:

- Step 1** From the User Interface Setup window, select **Task 3**.
- Step 2** Check **Visible** to show the button on the desktop.
- Step 3** In the Hint field, enter **Xfer Call to Supv**.
- Step 4** In the Actions area, click the **Add** button. The Select Action page appears with multiple tabs.
- Step 5** Select the **Call Control** tab. The Select Action window appears.
- Step 6** Click the **New** button to create a new action. The Call Control Action Setup window appears.
- Step 7** Enter the following parameters:

Field Name	Description
Action Name	Xfer Call to Supv
Call Control	Supervised Transfer
Phone Number	<Directory number of your lab partner>

- Step 8** Click **OK**. Click **Add Action**. The User Interface Setup window appears.
- Step 9** Click the **Customize Icon** button. The Choose Icon window opens.
- Step 10** Select a customized icon which best represents a transfer from the list of available icons.

Activity Verification

You have completed this task when you attain this result:

- You see the new task button in the user interface window but do not see it on your desktop until you have completed this portion of the labs and you have restarted the Agent Desktop.

Task 13: Task Buttons #4 & 5—Start and Stop Record Buttons (Instructor Demo)

The agent can start and stop recording via task buttons on the Cisco Agent Desktop. This activity will create two task buttons to start and stop recording.

Activity Procedure: Create a Start Record Button

To create a Start Record task button, complete the following steps:

- Step 1** From the User Interface Setup window on the Desktop Administrator, select **Task 4**.
- Step 2** Check **Visible** to show the button on the desktop.
- Step 3** In the Hint field, enter **Record Start**.

- Step 4** In the Actions area, click the **Add** button. The Select Action page appears with multiple tabs.
- Step 5** Select the **Utility Action** tab. The Select Action window appears.
- Step 6** Click the **New** button to create a new action. The Utility Action Setup window appears.
- Step 7** Enter the following parameters:

Field Name	Description
Action Name	Record Start
Action Type	Record
Action	Start

- Step 8** Click **OK**. Click **Add Action**. The User Interface Setup window appears.
- Step 9** Click the **Customize Icon** button. The Choose Icon window opens.
- Step 10** Select a customized icon that looks like a tape recorder without the red light.

Activity Verification

You have successfully completed this activity when you have attained these results:

- You see the new task button in the user interface window but do not see it on your desktop until you have completed this portion of the labs and you have restarted the Agent Desktop.

Activity Procedure: Create a Stop Record Button

To create a Stop Record task button, complete the following steps:

- Step 1** From the User Interface Setup window on the Desktop Administrator, select **Task 5**.
- Step 2** Check **Visible** to show the button on the desktop.
- Step 3** In the Hint field, enter **Record Stop**.
- Step 4** In the Actions area, click the **Add** button. The Select Action page appears with multiple tabs.
- Step 5** Select the **Utility Action** tab. The Select Action window appears.
- Step 6** Click **New** to create a new action. The Utility Action Setup window appears.
- Step 7** Enter the following parameters:

Field Name	Description
Action Name	Record Stop
Action Type	Record
Action	Stop

- Step 8** Click **OK**. Click **Add Action**. The User Interface Setup window appears.
- Step 9** Click **Customize Icon**. The Choose Icon window opens.
- Step 10** Select a customized icon that looks like a tape recorder with the red light.

Step 11 Click **Apply** to apply all of your changes.

Activity Verification

You have completed this task when you attain this result:

- You see the new task button in the user interface window but do not see it on your desktop until you have completed this portion of the labs and you have restarted the Agent Desktop.

Task 14: Enabling the Integrated Browser (Instructor Demo)

This task will cause the browser to open to the Cisco Unified CCX Administration pages when the Cisco Agent Desktop is started.

Activity Procedure

To enable the integrated browser, complete these steps:

- Step 1** Expand your new Work Flow Group.
- Step 2** Click **CAD Agent** and then **User Interface**. The User Interface Setup window opens.
- Step 3** Choose the **Browser Setup** tab.
- Step 4** In the General Browser Options, ensure that the **Enable Integrated Browser** and **Allow Address Editing** checkboxes are checked.
- Step 5** In the Supervisor & Work Flows Tabs area, set the homepage to: **https://<Unified CCX Server Address>/appadmin**.
- Step 6** Click **Update** and then click **Apply**.

Activity Verification

You have completed this task when you attain this result:

- When you restart your Agent Desktop, the browser launches to the Cisco Unified CCX Administration pages.

Task 15: Launching an Excel Spreadsheet on Cisco Agent Desktop Startup (Instructor Demo)

This task will cause an Excel spreadsheet to launch when the Cisco Agent Desktop is started.

Activity Procedure

To launch an Excel spreadsheet when starting Cisco Agent Desktop, complete these steps:

- Step 1** In the Cisco Desktop Work Flow Administrator, locate and expand your Work Flow Group and drill down below **CAD Agent** and then click **Agent Management Work Flows**.
- Step 2** Under the Events area, highlight the **Startup** event. This new action applies to when Cisco Agent Desktop is started by the agent.
- Step 3** Under Rules, verify that the **<Default>** Rule is highlighted. No rules will apply to this action.
- Step 4** Under Actions, click the **Add** button to add a new Action. The Select Action window opens.
- Step 5** Select the **Launch External Application** tab.

Step 6 Click **New** to add a new action.

Step 7 Enter the following parameters:

Field Name	Description
Action Name	Excel
Application	C:\Temp\PL_Members.xls

Step 8 Click **OK**. Click **Add Action**. The Work Flow Setup window appears.

Step 9 Click **Apply** on the Work Flow Setup screen to save your changes.

Activity Verification

You have completed this task when you attain this result:

- You see the new task listed in the work flow window but do not see any action until you have completed this portion of the labs and you have restarted the Agent Desktop.

Task 16: Configuring a Rules-Based Screen Pop (Instructor Demo)

This task will cause a membership ID to be highlighted on the spreadsheet when the call is ringing and answered on the Cisco Agent Desktop. This is true computer telephony integration (CTI).

The member ID search will be based on agent screen pop data offered by the Cisco Agent Desktop upon receipt of a call. In this example, the script will highlight the Caller Membership Number on the previously-opened Excel spreadsheet upon the ringing of the agent phone. First, you will set up a rule so that the screen pop only occurs when you receive a Member ID from the script.

Activity Procedure

To configure a rules-based screen pop, complete these steps:

Step 1 In the Cisco Desktop Work Flow Administrator, locate and expand your Work Flow Group, drill down below **CAD Agent**, and then click **Voice Contact Work Flows**.

Step 2 Highlight **Default** in Voice Contact Work Flow List and click **Edit**.

Step 3 Under Events, click the **Answered** event.

Step 4 Under Rules, click **New**. The New Rule Name window appears.

Step 5 In the Enter Rule Name field, enter **Find Member ID** and click **OK**.

Step 6 Under Current Rule Conditions area, click the top **Edit** button.

Step 7 In the Data Field, select ***MemberID**.

Step 8 Click the **Enable Condition** check box.

Step 9 Under Data Field Filter, select the **Is Not Empty** criterion.

Step 10 Click **OK** to save your entries and return to the Current Rule Conditions section.

Step 11 Check the **Enable Rule** check box to put the rule into effect.

Step 12 Open the membership database spreadsheet (C:\Temp\PL_Members.xls) if it is not already open. Be sure that the window is minimized on the task bar.

- Step 13** On the Work Flow Setup window, with Answered Event selected and Find Member ID Rule selected, click **Add** in the Actions area.
- Step 14** Select the **Run Macro** tab.
- Step 15** To add a new Macro, click **New**. The New Macro window appears.
- Step 16** In the Enter Macro Action Name field, enter **Find Member ID**. Click **OK**. The Macro Recording screen for “Find Member ID” appears.
- Step 17** Click **Record** to activate the recording.
- Step 18** Perform the following keystrokes (exactly):
- Click the **Excel Spreadsheet Title Bar** to put focus on the Excel application.
 - **Press Ctrl-F**. (This activates the Edit Menu option and selects the Find option.)
 - For the Find What field, press **F2** on your keyboard to pause the macro recording. The Macro Recorded Suspended window appears.
 - Select **Insert Data**.
 - On the Select a Data Field dialog box, select the ***Member ID** data field.
 - In the Test Data field, remove **<Member ID>** and enter a valid Member ID from the Excel Database spreadsheet, such as “**12342**”. Click **OK**.
 - Select **Resume Recording** to return to the Excel spreadsheet.
 - Press **Enter** (only once) to find the entry “12342” on the spreadsheet. The entry should be highlighted.
 - Press the **Tab** key until the **Close** button is highlighted (about four times).
 - Press **Enter** (This selects the Close option in the Find dialog box.)
 - Press **F2** again and select **End Recording**. This ends the macro recording session.

If you are using MS Excel 2003 or Excel Viewer 2003, your macro entry should appear as follows:

```
[APPLICATION:XLMAIN=MICROSOFT EXCEL - PL_MEMBERS.XLS]
[CONTROL] F
[ENTERPRISE FIELD:MEMBER ID]
[ENTER]
[TAB]
[TAB]
[TAB]
[TAB]
[ENTER]
```

- Step 19** You may have some extra [ALT] or [TAB] entries. If so, remove the extra entries now. Edit your macro entry to look like the text above.
- Step 20** Click **OK** to save the macro.
- Step 21** Click **Add Action** on the Select Action screen to assign the action to the Ringing event.
- Step 22** Your Work Flow Setup screen should be complete. Click **Apply** to save the Work Flow.

Activity Verification

You have completed this task when you attain this result:

- You see the new task listed in the Work Flow window but will not see any action until you have completed this portion of the labs and you have restarted the Agent Desktop.

Task 17: Associating Agents with a Work Flow Group (Instructor Demo)

Before any of these labs will be effective for the agent, the agent must be associated with the group.

Activity Procedure

To associate agents with a work flow group, complete these steps:

- Step 1** Access the Cisco Desktop Administrator.
- Step 2** In the Desktop Administrator navigation pane, navigate to **Personnel** and click **Agents**.
- Step 3** For your agent, choose your new work flow group from the drop-down menu.
- Step 4** Click **Save**.
- Step 5** Close and reopen your Agent Desktop.

Activity Verification

You have completed this task when you attain this result:

- When you reopen your Agent Desktop, you will see the Excel spreadsheet open. You will also note that you now have a browser accessing Cisco Unified CCX Administration and your new toolbar icons. Other verifications will occur in the next lab.

Task 18: Modify Your Script

You must now modify your script to prompt for a member ID, set a layout list, and set enterprise data.

Activity Procedure

To modify your script for CTI activity, complete these steps:

- Step 1** Open your **Member Services** script from the Student Scripts directory.
- Step 2** Create the following variables:

Type	Name	Value	Attributes
String	memberID	""	
String	zipCode	""	
String	arrivalType	""	
String	layoutList	"Layout<xx>"	Parameter
String	memberName	"<enter your name here>"	Parameter
String	phoneNumber	""	
String	getMemberIDPrompt	promptDir + "MS_GetMemberID.wav"	

Step 3 After the Accept step, add a **Get Call Contact Info** step and use these properties:

Tab	Property	Value or Name	Variables
General	Call Contact	--Triggering Contact--	
	Attribute	Calling Number:	phoneNumber
		Called Number:	
		Arrival Type:	arrivalType
		Last Redirected Number:	
		Original Called Number:	
		Original Dialed Number:	
		Dialed Number:	

Step 4 After the Play Prompt step that plays the greeting message, add a **Get Digit String** step and use these properties:

Tab	Property	Value
General	Contact	--Triggering Contact--
	Interruptible	Yes
	Result Digit String	memberID
Prompt	Prompt	getMemberIDPrompt
	Barge In	Yes
	Continue On Prompt Errors	Yes
Input	Initial Timeout	5
	Interdigit Timeout	3
	Maximum Retries	3
	Flush Input Buffer	Yes
	Clear DTMF Buffer on Retry	Yes
Filter	Input Length	5
	Digits Filter	1,2,3,4,5,6,7,8,9,0 (digits must be red to be valid)
	Terminating Digit	None
	Cancel Digit	*

Step 5 For each of the output branches of the Get Digit String step, add an **Annotate** step, indicating for the script to “Continue”.

Step 6 After the Get Digit String step, add a **Label** step. Name it **SELECT_RESOURCE**.

Step 7 Find the Select Resource step. Open the properties and change the **Connect** option from Yes to No. Your Connected output branch will change to Selected.

Step 8 In the Selected output branch of the Select Resource step, remove the **Goto** step and add a **Set Enterprise Call Info** step. Use these properties:

Tab	Property	Values	Names	Array Indexes	Tokens
General	Contact	--Triggering Contact--			
	Fields	None	None	N/A	None
Expanded Call Variables	ECC Variables	memberID	"MemberID"	--Scalar--	--All--
		arrivalType	"ArrivalType"	--Scalar--	--All--
		layoutList	"user.layout"	--Scalar--	--All--
		memberName	"MemberName"	--Scalar--	--All--
		phoneNumber	"PhoneNumber"	--Scalar--	--All--

Step 9 After the Set Enterprise Call Info step, add a **Connect** step and use these properties:

Tab	Property	Value or Option
General	Contact	--Triggering Contact--
	Resource Selected	resourceID
	Timeout	10

Step 10 For the Connected output branch of the Connect step, add a **Goto** step to go to the **END** label.

Step 11 For the Failed output branch of the Connect step, add a **Goto** step to go to the **SELECT_RESOURCE** step.

Step 12 **Validate**, **Save**, and **Upload** your script.

Step 13 **Refresh** your application.

Activity Verification

You have completed this task when you attain these results:

Step 1 Ensure that you have closed and reopened your Cisco Agent Desktop. Put your agent in the Ready state. The Excel file should open automatically.

Step 2 Go to your application page. Check the check box for memberName and enter a name (it does not matter what you enter).

Step 3 On your application page, be sure that the layout list value is correct (this is a case- and space-sensitive value). Remember, if there is a value, and it is incorrect, there will be no enterprise data delivered to the Agent Desktop. This would result in no enterprise data being displayed in your contact pane and the macro will not run.

Step 4 Have someone call into your script. They should be prompted to enter a member ID. Have them enter a number from 12341–12360.

- Step 5** When the call arrives at your desktop, answer the call. The Excel spreadsheet should pop up and the cell with the member ID should be highlighted. If Excel does not pop up, go to the Agent Desktop to verify that you got enterprise data. If it pops up and fails, go to the Agent Desktop and ensure that you got a correct member ID value.
- Step 6** Let the call stay up for a few moments and note the caution and warning indicators on your desktop.
- Step 7** Disconnect the call and enter some wrap-up data.
- Step 8** Push your agent to the Not Ready state and enter a reason code. You will probably be taking a scheduled break.

Lab 4-4: Advanced Cisco Unified Contact Center Express Scripting Techniques

Complete this lab activity to practice what you learned in module 4 lesson 4.

Activity Objective

In this activity, you will modify your script to include many of the common functions required for a call center. After completing this activity, you will be able to meet these objectives:

- Implement time of day, day of week, and holiday routing from within the script
- Implement holiday routing from an external database
- Implement holiday routing from an XML file located in the repository
- Add miscellaneous script upgrades

Required Resources

These are the resources and equipment required to complete this activity:

- Operational Unified Communications Manager
- Cisco Unified Contact Center Express (CCX)
- Student PC with MS Windows XP, SP2
- Cisco IP Phone, 7940 or better
- Network connectivity between the Cisco Unified CCX system and the PC workstation
- Cisco Unified CCX Editor

Job Aids

These job aids are available to help you complete the lab activity.

- UCCXD Student Guide
- UCCXD Lab Guide
- Cisco Unified CCX Administration

Server	IP Address
Cisco Unified Communications Manager	10.10.1.10
Cisco Unified CCX	10.10.1.40
Domain Controller / Email Server / External Database Server	10.10.1.2

Cisco Unified CCX Editor Steps

These editor steps are used in this lab activity:

Script Editor Steps	Description
Call Subflow	Use the Call Subflow step to execute a subflow, which is analogous to a subroutine or module in structured programming. You create the subflow with the Cisco Unified CCX Editor as an independent script that you can reuse in other scripts. You can also call subflows from within scripts that are themselves used as subflows.
On Exception Goto	Use the On Exception Goto step to catch problems that may occur during script execution and allow a graceful exit from the situation.
Get Reporting Statistic	Use the Get Reporting Statistic step to access real-time information about agents, CSQs, the overall Cisco Unified CCX system, and contacts. You can use this step to view the current state of the Cisco Unified CCX system or to report back to a caller such information as current wait duration, position in queue, and expected wait time.

Stare and Compare

Your instructor has uploaded completed answer scripts for each lab exercise into the script repository. The answer scripts may be viewed, compared, or downloaded using the Script Management page. You may elect to view the answer scripts as an aid to performing your lab.

When you load the answer script into the script editor, choose **Window > Tile Vertically** to allow both your new script and the sample script to appear side-by-side for comparison. Place your working file closest to the Editor Pallet pane so that you can easily move steps into the script.

The completed script for this activity:

- X801_04-4_MemberServices.aef

Lab Start and Lab Bypass

It may become necessary or desirable to “catch up” or to simply bypass the activities for a lab. There are completed answer scripts for each lab exercise available on the Script Management page. You may elect to view the answer scripts as an aid to performing your lab or you may simply copy the answer for your solution.

Be sure to keep yourself up-to-date for each module because many labs are dependent on successfully completing previous labs.

Follow these steps to “catch up” or to start this lab:

- From the Script repository, download the X801_04-3_MemberServices.aef script file and save it as MemberServices<xx>.aef to your student scripts directory.
- **Validate, Save, and Upload** the script.
- On the Application page, change the CSQ parameter to your student pod CSQ name (CSQ_SG<xx>).

Follow these steps to bypass this lab:

- From the Script repository, download the X801_04-4_MemberServices.aef script file and save it as MemberServices<xx>.aef to your student scripts directory.
- **Validate**, **Save**, and **Upload** the script.
- **Refresh** your application.

Task 1: Implementing Time of Day, Day of Week, and Holiday Routing

You now need to implement time of day, day of week, and holiday routing for your script.

Activity Procedure

To implement time of day, day of week, and holiday routing from within the script, complete these steps:

Step 1 Open your **Member Services** script from the Student Scripts directory.

Step 2 Create the following variables:

Type	Name	Value	Attributes
String	todaysDate	D[now] .month + "/" + D[now] .date + "/" + D[now] .year	
String	holidayDate1	""	Parameter
String	holidayDate2	""	Parameter
String	holidayDate3	""	Parameter
Boolean	todayIsAHoliday	false	
Boolean	callCenterClosed	false	
String	holidayMsg	promptDir + "MS_HolidayMsg.wav"	
String	ccClosedMsg	promptDir + "MS_CC_ClosedMsg.wav"	

Step 3 After the Get Call Contact Info step that gets the arrival type, add an **If** step and set this condition: **(holidayDate1 == todaysDate) || (holidayDate2 == todaysDate) || (holidayDate3 == todaysDate)**.

Step 4 For the True branch of the If step, add a **Play Prompt** step and use these properties:

Tab	Property	Value or Option
General	Contact	--Triggering Contact--
	Interruptible	Yes
Prompt	Prompt	holidayMsg
	Barge In	Yes
	Continue on Prompt Errors	Yes
Input	Flush Input Buffer	Yes

Step 5 After the Play Prompt step, add a **Goto** step to go to the **TERMINATE_END** label.

Step 6 For the False branch of the If step, add an **Annotate** step, indicating this is not a holiday.

Step 7 After the If step (Holiday Routing), add a **Day of Week** step and use these properties:

Tab	Time Zone/Options	Value/Selection
General	Time Zone	TZ[primary]
	Weekdays	Associate with M, T, W, Th, F
	Weekends	Associate with Sat, Sun

Step 8 In the Week Ends output branch, add a **Play Prompt** step and use these properties:

Tab	Property	Value or Option
General	Contact	--Triggering Contact--
	Interruptible	Yes
Prompt	Prompt	ccClosedMsg
	Barge In	Yes
	Continue on Prompt Errors	Yes
Input	Flush Input Buffer	Yes

Step 9 After the Play Prompt step just entered, add a **Goto** step to go to the **TERMINATE_END** label.

Step 10 In the Week Days output branch of the Day of Week step, add a **Time of Day** step and use these properties:

Tab	Time Zone/Connections	Value/Connections
General	Time Zone	TZ[primary]
	8 to 12	8:00 AM – 12:00 PM
	1 to 5	1:00 PM – 5:00 PM
	The Rest	

Step 11 In the 8 to 12 and 1 to 5 output branches, add an **Annotate** step to Continue the script because your call center is open.

Step 12 In The Rest output branch, add a **Play Prompt** step to tell the caller that you are closed, and a **Goto** step to go to the **TERMINATE_END** label. (You can copy these steps from the Week Ends output branch of the Day of Week step.)

Step 13 **Validate, Save, and Upload** your script.

Step 14 Go to your application page and enter some holiday dates. Make today a holiday.

Activity Verification

You have completed this task when you attain this result:

- When you call your script, you should immediately hear a prompt indicating that today is a holiday.

Task 2: Implementing Holiday Routing from a Database

You now need to implement holiday routing from a database for your script. You will be using a subflow that has already been written.

Activity Procedure

To implement holiday routing from a database, complete these steps:

- Step 1** In Cisco Unified CCX Administration, go to the Script Management page.
- Step 2** Locate and download the script: **X801_04-4_HolidaySubflowDB.aef**. Save this script as **HolidaySubflowDB<xx>.aef**.
- Step 3** Be sure that the script validates, and then upload the script.
- Step 4** While you have the script open in your editor, you can do a nonreactive debug to see the logic in the script. Just press the **Step Over** button on the toolbar and step through the script.
- Step 5** Open your **Member Services** script from the Student Scripts directory.
- Step 6** Find the If step that you are using to see if today is a holiday. You will keep the step, but you need to change the If condition. Change the If step for this condition: **todayIsAHoliday**.
- Step 7** Before the If step that you just changed, add a **Call Subflow** step and use these properties:

Tab	Property	Value or Sources	Destinations
General	Subflow Name	SCRIPT[HolidaySubflowDB<xx>.aef]	
	Disable Interruptions	No	
Input Mappings	Input Variables		
Output Mappings	Output Variables	todayIsAHoliday	todayIsAHoliday

- Step 8** **Validate, Save, and Upload**, your script.

- Step 9** **Refresh** your application.

Activity Verification

You have completed this task when you attain these results:

- When you call your script, you should immediately hear a prompt indicating that today is a holiday.
- If your script does not recognize that today is a holiday, ensure that the instructor has updated the holiday database to include today as a holiday.

Task 3: Implementing Holiday Routing from an XML File

You now need to implement holiday routing from an XML file for your script. You will be using a subflow that has already been written.

Activity Procedure

To implement holiday routing from an XML file, complete these steps:

- Step 1** In Cisco Unified CCX Administration, go to the Script Management page.
- Step 2** Locate and download the script: **X801_04-4_HolidaySubflowXML.aef**. Save this script as **HolidaySubflowXML<xx>.aef**.
- Step 3** Be sure that the script validates, and then upload the script.
- Step 4** While you have the script open in your editor, you can do a non-reactive debug to see the logic in the script. Just press **Step Over** on the toolbar and step through the script.
- Step 5** Open your **Member Services** script from the Student Scripts directory.
- Step 6** Change the script that the **Call Subflow** step is calling to use these properties:

Tab	Property	Value or Sources	Destinations
General	Subflow Name	SCRIPT[HolidaySubflowXML<xx>.aef]	
	Disable Interruptions	No	
Input Mappings	Input Variables		
Output Mappings	Output Variables	todayIsAHoliday	todayIsAHoliday

- Step 7** **Validate**, **Save**, and **Upload** your script.
- Step 8** **Refresh** your application.

Activity Verification

You have completed this task when you attain these results:

- When you call your script, you should immediately hear a prompt indicating that today is a holiday.
- If your script does not recognize that today is a holiday, ensure that the instructor has updated the holiday XML file in the Documents Repository.

Task 4: Miscellaneous Script Upgrades

For this task, you will perform several script upgrades. You will provide for exception handling, prompt for a phone number, modify the format of the phone number, check for agent availability, and announce expected wait time with a subflow. Additionally, you will cause the script to send an email to the supervisor (you) when a caller encounters a ring-no-answer.

Activity Procedure

To add exception handling, prompt for and format a phone number, test for agents logged in, and send an email from your script, complete these steps:

- Step 1** In Cisco Unified CCX Administration, go to the Script Management page.
- Step 2** Locate and download the script: **X801_04-4_WaitTimeSubflow.aef**. Save this script as **WaitTimeSubflow <xx>.aef**.
- Step 3** Open your **Member Services** script from the Student Scripts directory.
- Step 4** To keep the holiday routing from interfering with the rest of the labs, find and remove the **Call Subflow** step that checks for a holiday.
- Step 5** Create the following variables:

Type	Name	Value	Attributes
String	getPhoneNumberPrompt	promptDir + "MS_GetPhoneNumber.wav"	
int	agentsLoggedIn	0	
Contact	emailContact	null	

- Step 6** Before the Accept step, add an **On Exception Goto** step and use these properties:

Tab	Exception	Label	Save root cause
General	com.cisco.contact.ContactInactiveException	END	

Step 7 Find the Get Digit String step that collects your member ID. After this step, add another **Get Digit String** step to collect a phone number. Use these properties:

Tab	Property	Value
General	Contact	--Triggering Contact--
	Interruptible	Yes
	Result Digit String	phoneNumber
Prompt	Prompt	getPhoneNumberPrompt
	Barge In	Yes
	Continue On Prompt Errors	Yes
Input	Initial Timeout	5
	Interdigit Timeout	3
	Maximum Retries	3
	Flush Input Buffer	Yes
	Clear DTMF Buffer on Retry	Yes
Filter	Input Length	10
	Digits Filter	1,2,3,4,5,6,7,8,9,0 (digits must be red to be valid)
	Terminating Digit	None
	Cancel Digit	*

Step 8 Now that you have a phone number, you need to format it to make it easier on the agent to read. For the successful output branch of the Get Digit String step, add a **Set** step and set the phoneNumber variable for this value: **(phoneNumber.substring(0,3)) + "-" + (phoneNumber.substring(3,6)) + "-" + (phoneNumber.substring(6))**.

Step 9 Now you need to see if an agent is logged in. After the Get Digit String step, add a **Get Reporting Statistic** step and use these properties:

Tab	Property	Value or Option
General	Report Object	CSQ IPCC Express
	Field	Logged-In Resources
	Row Identifier	csqID
	Contact	--Triggering Contact--
	Result Statistic	agentsLoggedIn

Step 10 After the Get Reporting Statistic step, add an **If** step and set this condition: **agentsLoggedIn > 0**.

Step 11 For the True branch of the If step, add an **Annotate** step to Continue, because there is someone logged on.

Step 12 For the False branch of the If step, add a **Play Prompt** step and use these properties:

Tab	Property	Value or Option
General	Contact	--Triggering Contact--
	Interruptible	Yes
Prompt	Prompt	ccClosedMsg
	Barge In	Yes
	Continue on Prompt Errors	Yes
Input	Flush Input Buffer	Yes

Step 13 After the Play Prompt step, add a **Goto** step to go to the **TERMINATE_END** label.

Step 14 Now that you have checked for agent availability before going into queue, you must also be checking agent availability while a caller is in queue. Note the Get Reporting step and the If step that you created in Steps 9 and 10.

Step 15 Find the Queued branch of the Select Resource step. Directly beneath the Queue Loop label step, copy and paste the two steps that you created in Steps 9 and 10. You will have to do this one at a time. Note that all the steps within the If step are copied as well.

Step 16 To announce the expected wait time, in the queue loop, after the Play Prompt step that announces agents unavailable, add a **Call Subflow** step and use these properties:

Tab	Property	Value or Sources	Destinations
General	Subflow Name	SCRIPT[WaitTimeSubflow <xx>.aef]	
	Disable Interruptions	No	
Input Mappings	Input Variables	csqID	csqID
Output Mappings	Output Variables		

Step 17 Under the Selected branch of the Select Resource step, find the **Connect** step. Directly beneath the Failed output branch of the Connect step, add a **Create eMail** step and use these properties:

Tab	Property	Value or Option
General	Subject	"Ring No Answer"
	Body	"A caller encountered a ring-no-answer and had to be re-queued."
	eMail Contact	emailContact

Step 18 After the Create eMail step, add a **Send eMail** step and use these properties:

Tab	Property	Value or Option
General	eMail Contact	emailContact
	From	-- Default --
	To	"student<xx>@ciscoclass.com"

Step 19 **Validate, Save, and Upload** your script.

Step 20 **Refresh** your application.

Activity Verification

You have completed this task when you attain these results:

- Make a test call to your application while debugging your script. While listening to one of the prompts, disconnect the call and watch the logic go directly to the END label.
- Put your agent in the Ready state and have someone make another test call to your script. They should be prompted for a 10-digit phone number, and when you receive the call, you should note a formatted (xxx-xxx-xxxx) 10-digit number in the Enterprise Data field in your contact pane. Leave the call up for the next test.
- Ensure that you are either in the Talk state or the Work state and have someone call your application. They should go into queue and hear an expected wait time. Answer and disconnect the calls.
- Make another call to your application. Do not answer it when offered. When the timeout occurs, you should be placed in the Not Ready state and receive an email in a few moments.

Lab 4-5: Cisco Unified Contact Center Express Reporting

Complete this lab activity to practice what you learned in module 4 lesson 5.

Activity Objective

In this activity, you will install and view various reports. After completing this activity, you will be able to meet these objectives:

- Install and view real-time reports
- Install and log in to the Historical Reports client
- Generate, view, save, and schedule historical reports

Required Resources

These are the resources and equipment required to complete this activity:

- Operational Unified Communications Manager
- Cisco Unified Contact Center Express (CCX)
- Student PC with MS Windows XP, SP2
- Cisco IP Phone, 7940 or better
- Network connectivity between the Cisco Unified CCX system and the PC workstation

Job Aids

These job aids are available to help you complete the lab activity.

- UCCXD Student Guide
- UCCXD Lab Guide
- Cisco Unified CCX Administration

Server	IP Address
Cisco Unified Communications Manager	10.10.1.10
Cisco Unified CCX	10.10.1.40
Domain Controller / Email Server / External Database Server	10.10.1.2

Task 1: Using Real-Time Reporting

In this lab, you will access Real-Time Reporting and analyze information regarding the performance of Cisco Unified CCX.

Activity Procedure

To install and view real-time reports, complete these steps:

- Step 1** From Unified CCX Administration, select **Tools > Real Time Reporting**. A Java page will appear while loading the Java plug-in. Allow the system to install Real-Time Reporting. When completed, the Application Reporting page opens.
- Step 2** To access the Contacts Summary report, select **Report > Contacts Summary**. The Contacts Summary page appears.
- Step 3** Access the **Application Tasks Summary**.
- Step 4** Make a call to your application.
- Step 5** Answer the call with a Cisco Agent Desktop. Do not release the call.
- Step 6** On the Applications Tasks Summary report, observe your total count as it increments by one.
- Step 7** Access the **Contacts** report.
- Step 8** Access the **Applications** page.
- Step 9** Are there any applications that are not valid or that are disabled? Which applications? _____
- Step 10** Access the **Sessions** page, observe your session.
- Step 11** What state is your session in? _____
- Step 12** **Disconnect** your call.
- Step 13** Explore other menu items (**Tools**, **Views**, and **Settings**). Important: Do not click Reset All Stats.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to view real-time information from the Cisco Unified CCX system.

Task 2: Installing the Historical Reports Client

In this lab, you will install the Historical Reports client.

Activity Procedure

To install and log in to the Historical Reports client, complete these steps:

- Step 1** From the Cisco Unified CCX Administration page, choose **Tools > Plug-Ins**. When the Plug-Ins web page appears, click the **Cisco Unified CCX Historical Reports** hyperlink. The File Download dialog box appears.
- Step 2** Click **Run** to install. Follow the installation instructions.
- Step 3** Click **Run** at the security warning.
- Step 4** Click **Next** at the installation welcome screen.
- Step 5** Read and **Accept** the license agreement.

- Step 6** Choose the folder that you want the client files in, take the default.
- Step 7** Click **Install** to start copying the files for installation.
- Step 8** Click **Finish** when completed.
- Step 9** Reboot your PC as directed.
- Step 10** To allow your user to access historical reports, from Cisco Unified CCX Administration, select **Tools > User Management > User View**. The User Configuration page appears.
- Step 11** Select your user ID. The User Configuration page appears.
- Step 12** In the Capabilities area, move the **Reporting** capability to the Selected Capabilities area. Give yourself access to both reporting packages (IVR and ICD).
- Step 13** Click **Update**. You now have permission to view and modify the reports.
- Step 14** Start the Historical Reports client program. The Login page appears.
- Step 15** Log in to the Historical Reports client using the Cisco Unified CCX server IP address and your student user account information. The Main Historical Reports Page appears.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to login to the Historical Reports Client.

Task 3: Generating Historical Reports

In this lab, you will generate some historical reports.

Activity Procedure

To generate, view, save, and schedule historical reports, complete these steps:

- Step 1** Generate an Agent Detail Report for all of the agents in the contact center for the past two days.
- Step 2** Generate an Agent Detail Report for just you and your lab partner. Hint: Use the Detailed tab.
- Step 3** Experiment with other reports while you wait for others to complete this lab.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to generate and view historical reports.

Lab 5-1: Remote Monitoring

Complete this lab activity to practice what you learned in module 5 lesson 1.

Activity Objective

In this activity, you will participate in an instructor demo on Remote Monitoring. After completing this activity, you will be able to meet these objectives:

- Create a new user account in Cisco Unified Communications Manager for remote monitoring
- Configure the new user account as a remote monitoring supervisor
- Assign resources and CSQs for the new remote monitor supervisor
- Configure a remote monitor application
- Display the remote monitored CSQ IDs
- Test remote monitoring

Required Resources

These are the resources and equipment required to complete this activity:

- Operational Cisco Unified Communications Manager
- Cisco Unified CCX
- Student PC with MS Windows XP, SP2
- Cisco IP Phone, 7940 or better
- Network connectivity between the Cisco Unified CCX system and the PC workstation
- Cisco Agent Desktop installed with agents available

Job Aids

These job aids are available to help you complete the lab activity.

- UCCXD Student Guide
- UCCXD Lab Guide
- Cisco Unified CCX Administration

Server	IP Address
Cisco Unified Communications Manager	10.10.1.10
Cisco Unified CCX	10.10.1.40
Domain Controller / Email Server / External Database Server	10.10.1.2

Instructor Demo

This lab is much better demonstrated when there is one supervisor and many agents. Therefore, your instructor, or an appointed learner, will act as the supervisor and all others will be agents.

Task 1: Creating a New Cisco Unified Communications Manager User (Instructor Demo)

Remote Monitoring requires a special supervisor account that can monitor agent calls. This Cisco Unified Communications Manager user must have a numeric user ID so that the supervisor can log in to a Cisco Unified CCX Remote Monitoring application.

Activity Procedure (Informational Only)

This lab is integrated with Active Directory (and already has user ID 8800 defined). Therefore, for purposes of this lab, these steps cannot be performed. If you were in a non-integrated environment, these are the steps that you would perform:

Step 1 From the Cisco Unified Communications Manager Administration page, select **User Management > End User > Add New** to add a new user. The User Configuration page opens.

Step 2 To create a new user, enter the following parameters:

Field Name	Description
User ID	8800
Password	99999
Confirm Password	99999
PIN	99999
Confirm PIN	99999
Last Name	Supv00
First Name	8800

Step 3 Click **Save**. The User Configuration page appears.

Activity Verification

You have successfully completed this activity when you have attained these results:

- None.

Task 2: Creating a Remote Monitor Supervisor (Instructor Demo)

This task creates a special supervisor used for Remote Monitoring.

Activity Procedure

To create a remote monitor supervisor, complete these steps:

Step 1 From Cisco Unified CCX Administration, select **Tools > User Management > User View**. The User Management page opens with a list of users.

Step 2 Click the **8800** user account. The User Configuration page appears.

Step 3 Move the **Supervisor Capability** to the Selected Capabilities area. Do not choose any other capability.

- Step 4** Click **Save**. Your new user now has Remote Supervisor capabilities. The Supervisor that you defined is now ready to be assigned CSQs and Resources to monitor.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When the remote supervisor users account (only) displays the supervisor capability.

Task 3: Assigning Resources and CSQs for Remote Monitoring (Instructor Demo)

This task assigns resources, agents, or CSQs, that can be monitored by the Remote Monitoring Supervisor.

Activity Procedure

To assign agents and CSQs to the Remote Monitor Supervisor, complete these steps:

- Step 1** From Cisco Unified CCX Administration, navigate to **Subsystems > RmCm > Remote Monitor**. The RmCm Remote Monitor page appears.
- Step 2** Click on your new user. A list of CSQs and Resources appears.
- Step 3** Check all CSQs and all Resources that you wish to monitor.
- Step 4** Click **Save**. The Remote Monitor page reappears.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When the remote supervisor users account displays the association with CSQs and agents for monitoring.

Task 4: Configuring a Remote Monitor Application (Instructor Demo)

The new Remote Monitoring Supervisor must call an application configured to use the rmon.aef script. The supervisor will be prompted to enter an agent extension or CSQ ID. This task will have you create a new application for this purpose.

Activity Procedure

To configure a remote monitor application, complete these steps:

- Step 1** From Cisco Unified CCX Administration, select **Applications > Application Management**. The Application Configuration page opens.
- Step 2** Click **Add New** to add a new application. The Add a New Application web page opens.
- Step 3** From the Application Type drop-down menu, choose **Cisco Script Application** and click **Next**. The Cisco Script Application configuration web page opens.

Step 4 To create a new script application, use the following parameters:

Field Name	Description
Name	RMON_8800
ID	8800
Maximum Number of Sessions	4
Script	SSCRIPT[rmon.aef]
Description	Remote Monitor 8800
Enabled	Yes
Default Script	- System Default -

Step 5 Click **Add**. The Cisco Script Application page re-appears.

Step 6 From the left pane, click **Add New Trigger**. The Add a New Trigger page appears.

Step 7 Select **Unified CM Telephony Trigger** as the Trigger Type.

Step 8 Click **Next**.

Step 9 To create a new trigger, use the following parameters:

Field Name	Description
Directory Number	8800
Language	- System Default -
Application Name	RMON_8800
Device Name	RMON_8800
Description	Remote Monitor 8800
Call Control Group	Unified CM Telephony Group#4003

Step 10 Click **Add**.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When the remote monitor application can be displayed and has a trigger associated.

Task 5: Learning the Monitored CSQ IDs (Instructor Demo)

When using the Remote Monitoring application, to monitor a CSQ, you must enter the CSQ ID. This task will help you learn what the CSQ ID is for each CSQ that you have been authorized to monitor.

Activity Procedure

To display the monitored CSQ IDs, complete these steps:

Step 1 If you are logged in to the Cisco Unified CCX Administration page, log out (System > Logout).

- Step 2** Log in to the Supervisor Admin page using your new remote supervisor login credentials. If you were using a new Internet Explorer window, you would use the following URL:
- **`https://<Unified CCX Server IP Address>/appadmin`**
- Step 3** The Main Administration page appears, and should be labeled as Cisco Unified CCX Supervision.
- Step 4** Select **Tools > Plug-ins > Cisco Unified CCX Desktop Suites**. The Cisco Unified CCX page appears.
- Step 5** Under the heading of Cisco Unified CCX Remote Monitoring, click the **View CSQ** link and note the CSQ IDs for the CSQs that you are permitted to monitor. You will use these CSQ IDs when you call into the Remote Monitoring application and choose to monitor a CSQ.
- Step 6** Click **System > Logout**.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to view the CSQ IDs for remote monitoring.

Task 6: Testing Remote Monitoring (Instructor Demo)

Now you are ready to test Remote Monitoring. This lab is being performed as a demo, so the instructor will be the supervisor and the students will be the agents. For the test to work properly, all students must participate in a predictably known CSQ when a route point is dialed.

Activity Procedure: Monitor a Specific Agent

To test remote monitoring, complete these steps:

- Step 1** All students should be participating in the CSQ designated by the instructor. This will help the testing process because the instructor will previously know which CSQ to monitor.
- Step 2** All students should be logged on and in the Ready state.
- Step 3** The instructor should have someone dial a member services route point and be answered by an agent. Keep the call up.
- Step 4** The instructor should dial **8800**, navigate the menus to monitor a specific agent, enter the agent ID (the agent that *answered* the call), and monitor the call.

Note You should note that when choosing to monitor by agent, if an agent is already on a call, the monitor session will immediately begin. If not, the monitor session will wait for the next call.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When the ACD call is successfully monitored.

Activity Procedure: Monitor by CSQ

- Step 1** The instructor should dial **8800**, navigate the menus to monitor a call by CSQ, and enter the CSQ ID.
- Step 2** The instructor should have someone dial a member services route point and be answered by an agent. Keep the call up.
- Step 3** The remote monitor supervisor should be monitoring when the call starts.

Note Note that the supervisor must wait for the next call to be answered when monitoring by CSQ.

Activity Verification

You have completed this task when you attain this result:

- You can successfully monitor an agent call or CSQ using the Remote Monitoring application.

Lab 5-2: Outbound Preview Dialing

Complete this lab activity to practice what you learned in module 5 lesson 2.

Activity Objective

In this activity, you will create and test an Outbound Campaign. After completing this activity, you will be able to meet these objectives:

- Create an outbound campaign
- Create and import a contact list
- Test outbound dialing functions

Required Resources

These are the resources and equipment required to complete this activity:

- Operational Cisco Unified Communications Manager
- Cisco Unified Contact Center Express (CCX)
- Student PC with MS Windows XP, SP2
- Cisco IP Phone, 7940 or better
- Network connectivity between the Cisco Unified CCX system and the PC workstation
- Cisco Agent Desktop installed with agents available

Job Aids

These job aids are available to help you complete the lab activity.

- UCCXD Student Guide
- UCCXD Lab Guide
- Cisco Unified CCX Administration

Server	IP Address
Cisco Unified Communications Manager	10.10.1.10
Cisco Unified CCX	10.10.1.40
Domain Controller / Email Server / External Database Server	10.10.1.2

Task 1: Creating an Outbound Campaign

Cisco Unified CCX Outbound Preview Dialer is available in the Cisco Unified Communications Manager version of the Cisco Unified CCX product. The Outbound feature only requires Cisco Unified CCX Premium licensing. With this feature, you can maintain high agent productivity by configuring contact centers for automated Outbound Dialing activities and allow agents who are not busy with inbound calls to perform outbound calls.

Activity Procedure

To create a new Outbound Campaign, complete these steps:

- Step 1** Navigate to **Desktop Work Flow Administrator, Call Center 1 > Work Flow Configuration > Work Flow Groups > Student<xx> > CAD Agent > User Interface**.
- Step 2** Under the Outbound Dialer Mode, check the check box for **Direct Preview**.
- Step 3** Click **Apply** and close the Desktop Administrator.
- Step 4** Close and re-open your agent desktop to see the new toolbar icons available to you.
- Step 5** From the Cisco Unified CCX Administration menu bar, choose **Subsystems > Outbound > General**. The Outbound Configuration web page opens to display the General pane.
- Step 6** For the Outbound Configuration page, configure the following properties and click **Update**:

Tab	Property	Value
General	Customer Dialing Time Range (hh:mm)	Start Time: 7:00 AM, End Time: 9:00 PM
	Preview Call Timeout	60
	Dialing Prefix	
	Long Distance Prefix	
	Include Long Distance Prefix	
	Local Area Code	
	Do Not Remove Local Area Code When Dialing	
	Assigned CSQs (for all campaigns)	Assign all of your group's skills CSQs
	% of Logged in Agents for Outbound	100 (For training purposes only; normally a much lower number would be used)
Campaigns		

- Step 7** To set up a Campaign, click **Subsystems > Outbound > Campaigns**. The Campaign page appears with a list of configured campaigns, if any.
- Step 8** Select **Add New** to add a new campaign. The Campaign Configuration page appears.

Step 9 For your new campaign, configure the following properties:

Tab	Property	Value
Campaigns	Campaign Name*	Outbound<xx>
	Enable	No
	Description	Training Campaign
	Start Time (hh:mm)	8:30 AM
	End Time (hh:mm)	9:00 PM
	Maximum Attempts to Dial Contact*	3
	Contact Records Cache Size*	20
	Answering Machine Retry	No
	Callback Time Limit*	15
	Callback Missed	Reschedule for same time next business day
	Assigned CSQs (for this campaign)	Assign all of your group's skills CSQs

Step 10 Click **Add** to add the campaign.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to view your campaign in the list.

Task 2: Importing a Contact List

A contact list must be uploaded before the campaign can start.

Activity Procedure

To create and import a contact list, complete these steps:

Step 1 In Cisco Unified CCX Administration, choose **Applications > Document Management > en_US**. Right-click the download icon of the ImportFile.txt and select **Save Target As...** Save the file as **C:\StudentScripts\ImportFile<xx>.txt**. The file will look like this when opened:

```
12341,Jay,Thomas,2XX1,2XX2
12342,John,Jones,2XX1,2XX2
12343,Any,Day,2XX1,2XX2
12344,Chris,Jones,2XX1,2XX2
12345,Fred,Knight,2XX1,2XX2
12346,Jim,Carrol,2XX1,2XX2
12347,Lisa,Newberry,2XX1,2XX2
```

Step 2 Modify the contents with the two phone numbers of your partner and save the file again. This file is now ready for import to the Campaign.

Step 3 Select **Subsystems > Outbound > Campaigns**.

Step 4 Click your **Campaign**. The Campaign Configuration page appears.

- Step 5** Click the **Import Contacts** button. The Import Contacts page appears.
- Step 6** Browse to your new file, C:\StudentScripts\ImportFile<xx>.txt and click **Open**.
- Step 7** Select the **Field Names** in this order: Account Number, First Name, Last Name, Phone1, Phone2, None.
- Step 8** Click **Import**. The correct number of records should be confirmed as imported (7).
- Step 9** Observe, on the Campaigns screen, the number of remaining contacts. It should be 7.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can see that there are contacts remaining for your campaign.

Task 3: Testing Outbound Dialing

For this task, you will be testing the Outbound Dialing function.

Activity Procedure

To start a campaign and take an outbound call, complete these steps:

- Step 1** Assign one lab partner to be the outbound agent and one partner to be the recipient of the outbound call. Repeat the following steps for each lab partner.
- Step 2** Close and reopen your Agent Desktop to acquire changes in the configuration. You should see new (gray) icons on your desktop that are used for outbound preview dialing.
- Step 3** From the Cisco Unified CCX Administration menu bar, choose **Subsystems > Outbound > Campaigns** and click on your campaign. Enable the campaign by clicking the **Yes** radio button. Click **Save**.
- Step 4** Make your Agent Desktop Ready and wait for a few seconds while a preview is prepared and delivered.
- Step 5** Watch for the Enterprise Data screen to pop. There is no audible alert.
- Step 6** When the preview data comes in, observe the name and other data in the Enterprise Data window.
- Step 7** **Accept** the call and chat vigorously with the called party. Sell something!
- Step 8** Note that the Caution and Warning Thresholds continue to apply for the Work Flow Group.
- Step 9** **Disconnect** this call and wait for another preview. Your agent should still be in the Ready state.
- Step 10** Select a wrap-up code because they are still set for this Work Flow.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to accept an outbound call.

Activity Procedure: Reject the Current Preview Record

To see the effect of rejecting and cancelling an outbound reservation, complete the following steps:

- Step 1** When the next call preview arrives (this could take a few moments), pretend that you have noticed that there are some inbound calls in the queue and that you want to allow yourself the ability to be selected for the inbound calls. Reject the current preview and watch your agent state. Your agent state will revert to Ready and then you will be presented with the next preview. The rejected call will be presented again later.
- Step 2** Because you have remained in the Ready state, the next preview will arrive quickly. Click **Cancel Reservation** to put yourself in the Not Ready state. This will give you time to prepare for the next activity.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you have cancelled the last reservation and your agent is in the Not Ready state.

Activity Procedure: Reject—Close the Current Preview Record

To see the effect of rejecting and closing an outbound reservation, complete the following steps:

- Step 1** When the call preview arrives, reject and close the contact. You will not see that name in this campaign again!
- Step 2** Wait for the next call preview.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to note that the record does not reappear.

Activity Procedure: Skip the Current Preview Record

To see the effect of skipping an outbound reservation, complete the following steps:

- Step 1** When the next call arrives, skip the call preview. Watch your agent state again. You will not go to the Ready state but remain in the Reserved state.
- Step 2** Wait for the next call preview.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to skip the current call and your agent state remains in the reserved state.

Activity Procedure: Let the Current Preview Record Time Out

To see the effect of allowing an outbound reservation to timeout, complete the following steps:

- Step 1** When the next call preview arrives, let it go. Do nothing. The call will be removed after the configured Preview Call Timeout (60 seconds) and your agent will be set in the Not Ready state.
- Step 2** Note the customer name on your screen.

- Step 3** Make your agent Ready and wait for the next call preview. In the next activity, the call preview will appear for the same customer.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When the agent reservation times out and your agent state goes to Not Ready.

Activity Procedure: Cancel Reservation

To see the effect of cancelling an outbound reservation, complete the following steps:

- Step 1** When the next call preview arrives, Cancel the reservation. Your agent state will change to Not Ready.
- Step 2** Make your Agent Ready and wait for the next call preview.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you cancel the reservation and your agent state goes to Not Ready.

Activity Procedure: Schedule a Callback

You can schedule a customer callback for a time more convenient to the customer. To schedule a callback, follow these steps:

- Step 1** Set up and accept an outbound call to a customer and start talking.
- Step 2** While in Talking (or Work) state, click **Callback**. The Callback Properties dialog box appears, displaying data about the current customer call.
- Step 3** In the Schedule Callback section, enter a time (HH:MM) and date (MM/DD/YYYY) to call back the customer. Make it about 3 to 5 minutes from now.

Note Be sure that the time you enter in the Customer Time field is the time in the customer location, not the time in your location. You can enter the time in 12- or 24-hour format. If using the 12-hour format, you must enter AM or PM as well.

- Step 4** Change the callback number to another phone in your student group as if the customer wants to be contacted at a different phone number.

- Step 5** Click **OK**. The call is now scheduled for callback at the time and date you set.

Note The customer callback might not be made exactly at the time you specified if the clock on the computer hosting Cisco Unified CCX is set at a different time than the clock on your PC.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can successfully schedule a callback.

Activity Procedure: Reclassify the Call

A contact can be classified as either Voice or one of the other options (Answering Machine, Fax/Modem, Invalid, Busy, Do Not Call).

The first time that you click **Reclassify**, the Voice option on the drop-down menu is disabled, because the contact is classified as Voice by default. All other options are enabled.

The next time you click **Reclassify**, the Voice option is enabled, and all other options are disabled. You can reclassify a contact as many times as needed. To reclassify a call, follow these steps:

- Step 1** Set up and accept an outbound call to a customer and start talking.
- Step 2** While in Talking (or Work) state, click **Reclassify**.
- Step 3** Reclassify the call as **Do Not Call**.
- Step 4** Close the dialog box and disconnect the call.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to reclassify an outbound call.

Activity Procedure: Look at Real-Time Reports

To see the results of your very busy activities in the past few minutes, look at Real-Time Reports. To view the Outbound Preview Dialing Real-Time Reports, follow these steps:

- Step 1** From the Cisco Unified CCX Administration menu bar, choose **Tools > Real Time Reporting**. After a possible Java update, the Application Reporting page appears.
- Step 2** From the menu bar, select **Report > Outbound Campaign Unified Contact Center Express Stats**.
- Step 3** Observe the number of calls and the classifications.
- Step 4** Spend some time with these reports.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to view outbound real-time data.

Lab 5-3: Agent Email

Complete this lab activity to practice what you learned in module 5 lesson 3.

Activity Objective

In this activity, you will create, set up, and test Agent Email. After completing this activity, you will be able to meet these objectives:

- Create an email CSQ
- Set up Agent Email
- Test Agent Email activities

Required Resources

These are the resources and equipment required to complete this activity:

- Operational Cisco Unified Communications Manager
- Cisco Unified Contact Center Express (CCX)
- Student PC with MS Windows XP, SP2
- Cisco IP Phone, 7940 or better
- Network connectivity between the Cisco Unified CCX system and the PC workstation
- Cisco Agent Desktop installed with agents available
- Microsoft Exchange installed and ready for integration

Job Aids

These job aids are available to help you complete the lab activity.

- UCCXD Student Guide
- UCCXD Lab Guide
- Cisco Unified CCX Administration

Server	IP Address
Cisco Unified Communications Manager	10.10.1.10
Cisco Unified CCX	10.10.1.40
Domain Controller / Email Server / External Database Server	10.10.1.2

Task 1: Creating an Email CSQ

Email CSQs will need to be created for this test.

Activity Procedure

To create an email CSQ, complete these steps:

- Step 1** From the Cisco Unified CCX Administration menu bar, choose **Subsystems > RmCm > Contact Service Queues**. The Contact Service Queue summary web page opens.
- Step 2** Click the **Add New** to add a new Contact Service Queue. The first Contact Service Queue Configuration page opens.
- Step 3** Make the following entries on this page:

Page Area	Property	Value
Contact Service Queue Configuration	Contact Service Queue Name	Email<xx>_CSQ
	Contact Service Queue Type	Email
	Resource Pool Selection Model	Resource Skills

- Step 4** Click **Next**.
- Step 5** On the next page, add your **Physician Assistant** skill as a requirement for this CSQ and click **Show Resources** to ensure that your resource can participate in this CSQ.
- Step 6** Click **Add**.
- Step 7** In Cisco Unified CCX, navigate to **Subsystems > RmCm > Teams**.
- Step 8** Click on your team and add your new email CSQ in the **Assigned CSQs** field.
- Step 9** Click **Save**.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can view your new email CSQ in the team list.

Task 2: Setting Up Agent Email (Instructor Demo)

Agent Email requires that a Microsoft Exchange Server be deployed to serve emails to Cisco Unified CCX. This action has already been completed by your instructor. The next step is to integrate Cisco Unified CCX to the Exchange Server.

Activity Procedure

To integrate Cisco Unified CCX to the Exchange Server, complete these steps:

- Step 1** From the administration web pages access the **Cisco Desktop Administrator**.
- Step 2** Apply a password, if there is one, and press **Login**.
- Step 3** Drill down to: **Agent Email Settings > Global Settings**.
- Step 4** In the Mail Server Settings, under the heading IMAP Server, populate these fields:
- **Host/IP Address:** Enter the hostname or IP Address of the email server.

- **Port:** 143
 - **Username:** ciscoclass/uccxemail/uccxemail
 - **Password:** uccxemail
- Step 5** In the Mail Server Settings, under the heading IMAP Server, populate these fields:
- **Host/IP Address:** Enter the hostname or IP Address of the email server.
 - **Port:** 25
 - **Username:** ciscoclass/uccxemail/uccxemail
 - **Password:** uccxemail
- Step 6** Set Maximum Number of Emails on Agent Desktop to **3**.
- Step 7** The other settings can be left at their default values.
- Step 8** Press **Save**.
- Step 9** Navigate to **Agent Email Settings > Contact Service Queue Settings**.
- Step 10** Click on each of the student email CSQs and enter these values:
- **Send Responses Using Email Address:** PhysicianHelp<xx>@ciscoclass.com
 - **Email Addresses that Map to This Email:**
PhysicianHelp<xx>@ciscoclass.com
- Step 11** Save these entries.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can see that the new settings were accepted by the system.

Task 3: Testing Agent Email

Each student pod already has an email account. Your account address is student<xx>@ciscoclass.com.

Activity Procedure

To test Agent Email functionality, complete these steps:

- Step 1** On your student PC:
- Open Outlook Express. Your email account should already be in place for you.
 - Close, re-open, and log in to your Cisco Agent Desktop. Watch the Agent Email icons to the right of your agent state buttons. They will take a moment to become active because the Agent Email functions are still being loaded.
 - Open and log in to your Supervisor Desktop. Find and highlight your email CSQ in the navigation pane so that you can see the CSQ statistics.
- Step 2** Access your Outlook Express and create an email requesting advice on a medical problem you have. Send the email to PhysicianHelp<xx>@ciscoclass.com.
- Step 3** If you have followed these directions, you will not get an email yet because you are “Email Not Ready.” Click the **Email Ready** icon on your Cisco Agent Desktop to receive the email.

- Step 4** Answer the email and send a response. After a few moments, you should receive your response in Outlook.
- Step 5** Create and send another email to PhysicianHelp<xx>@ciscoclass.com.
- Step 6** You should still be in the Email Ready state and the email should arrive in your agent desktop momentarily.
- Step 7** Pretend that you are on a voice call and do not want to be bothered with this email. Put yourself in Email Not Ready and re-queue the email.
- Step 8** On the Supervisor Desktop, note that the email will go into queue. This may take a few moments—be patient.
- Step 9** In Outlook Express, create several more emails and send them to PhysicianHelp<xx>@ciscoclass.com. The emails in queue should increment accordingly.
- Step 10** Now go Email Ready again to receive the email (again).
- Step 11** Pretend that you are not ready to answer this email yet but you will handle it later. Click **Save**. Because you are still in the Email Ready state, you will immediately receive the next email.
- Step 12** Note the Contact Alerting field at the top of the Cisco Agent Desktop. Your two emails should be listed there. One is in process and the other is listed as a draft.
- Step 13** Also note that you can click between these two emails and the system will allow you to focus and work on the email of your choice.
- Step 14** In the Agent Email tab, click **Save** again. This will cause both emails to be marked as drafts. If you are allowed more emails, you will again be presented with a new email. If not, a new email will not be downloaded until you have answered, re-queued, deleted, or transferred one of the emails that you currently have.
- Step 15** Now you can have some fun with some of your fellow learners. Transfer some of your emails to the other student accounts to see if they will answer your emails for you.
- Step 16** Other students will be sending their emails to you. Go ahead and answer them and give them the best medical advice you can. Be professional, no bad words, and be sure to check your spelling.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to accept and handle routed emails.

Lab 5-4: Spoken Names and Automatic Speech Recognition

Complete this lab activity to practice what you learned in module 5 lesson 4.

Activity Objective

In this activity, you will create a spoken name and test ASR with the AutoAttendant script. After completing this activity, you will be able to meet these objectives:

- Create a spoken name
- Test the AutoAttendant application using a spoken name
- Add an ASR Dialog Group and enable ASR for your script
- Create an alternate pronunciation for dial by name
- Generate a name grammar for the AutoAttendant application
- Test ASR operation using the AutoAttendant application

Required Resources

These are the resources and equipment required to complete this activity:

- Operational Cisco Unified Communications Manager
- Cisco Unified Contact Center Express (CCX)
- Student PC with MS Windows XP, SP2
- Cisco IP Phone, 7940 or better
- Network connectivity between the Cisco Unified CCX system and the PC workstation
- An ASR/TTS machine integrated with Cisco Unified CCX

Job Aids

These job aids are available to help you complete the lab activity.

- UCCXD Student Guide
- UCCXD Lab Guide
- Cisco Unified CCX Administration

Server	IP Address
Cisco Unified Communications Manager	10.10.1.10
Cisco Unified CCX	10.10.1.40
Domain Controller / Email Server / External Database Server	10.10.1.2

Task 1: Creating a Spoken Name

A spoken name allows the system to announce your name recorded in your own voice. You will create a spoken name so that callers will hear your name when they call you using name dialing.

Activity Procedure

To create a spoken name, complete these steps:

- Step 1** From the Cisco Unified CCX Administration menu bar, choose **Applications > Application Management**. The Application Configuration web page appears.
- Step 2** Click on your application hyperlink. The Cisco Script Application web page appears.
- Step 3** Use the Script drop-down menu to select the **SCRIPT[SNU.aef]** script. The page will refresh and display the variable parameters for the new script.
- Step 4** Click **Update**.
- Step 5** Dial your route point (1xx2) to access the SNU.aef script. It will ask you to enter your last name and then your first name.
- Step 6** Since all names are similar (Student<xx> User), you will have to enter all the digits. Your digit sequence should look like this: **8737 788 3368<xx> (no spaces)**.
- Step 7** When you enter the digit sequence correctly, notice that the system responds with the username. This is a TTS operation.
- Step 8** The script will then ask you for a PIN. Your PIN is **99999**.
- Step 9** Complete the script by providing an appropriate recording of your name.
- Step 10** Now you have a spoken name that the system can use. If you are interested, repeat the previous steps and you should note that in Step 7, where the script spoke your name with TTS, it will now use your recorded spoken name.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to create a spoken name.

Task 2: Test the AutoAttendant Application

The student will test the AutoAttendant application. The student should note the inclusion of a spoken name when using *name dialing*.

Activity Procedure

To demonstrate the inclusion of a spoken name when using name dialing, complete these steps:

- Step 1** From the Cisco Unified CCX Administration menu bar, choose **Applications > Application Management**. The Application Configuration web page appears.
- Step 2** Click on your application hyperlink. The Cisco Script Application web page appears.
- Step 3** Use the Script drop-down menu to select the **SCRIPT[aa.aef]** script. The page will refresh and display the variable parameters for the new script.
- Step 4** Click **Update**.

- Step 5** Dial your route point (1xx2) to access the aa.aef script. It will ask you if you want to dial by number or name. Choose to **Dial by Number**.
- Step 6** Enter a number that belongs to a nearby student. Note that you cannot use ASR because you have not yet enabled ASR.
- Step 7** Chat for a moment and disconnect the call.
- Step 8** Dial your route point again. Choose to **Dial by Name**. You must enter the digit sequence as before (**8737 788 3368<xx>**), but for another student.
- Step 9** Note that you still cannot use ASR because you have not yet enabled ASR, and that you must enter the last name, followed by the first name. If this learner has created a spoken name, you should hear it on transfer; if not, you will hear nothing.
- Step 10** Chat for a moment and disconnect the call.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to use the AutoAttendant to be transferred to another student phone.

Task 3: Add an ASR Dialog Group and Enable ASR for your Script

To enable your Cisco Unified CCX applications to handle ASR-based dialog interactions with callers, you will need to create an ASR dialog group.

Activity Procedure

To configure an ASR dialog group, complete the following steps:

- Step 1** From the Cisco Unified CCX Administration menu, choose **Subsystems > MRCP ASR > MRCP ASR Dialog Groups**. The MRCP ASR Provider Configuration summary page opens.
- Step 2** Click **Add New** to add a new **MRCP ASR Dialog Group** hyperlink. The MRCP ASR Dialog Group Configuration page opens.
- Step 3** Enter the following information:

Field Name	Value
Group ID	4<XX>9
Description	MRCP ASR Group 4<XX>9
Number Of Provider Licenses	(Display Only)
Number of Licensed IVR Ports	(Display Only)
Maximum Number of Sessions	4
Provider Name	(Pre-filled)
English (United States)	Checked

- Step 4** Click **Add**.

- Step 5** You need to refresh the provider before the dialog group will be usable. Go to **MRCP ASR Providers** and click the **Refresh** icon for your provider.
- Step 6** Now you need to enable your trigger to use ASR. You can access your trigger from the Application page, but here you will use a different method. Navigate to **Subsystems > Cisco Unified CM Telephony > Triggers**.
- Step 7** Click on your trigger to open the properties.
- Step 8** Click **Show More** to open additional properties.
- Step 9** Under the heading of Advanced Trigger Information, the Override Media Termination should already have **Yes** selected.
- Step 10** For the dialog boxes below, move your ASR Dialog Group to the **Selected Dialog Groups** area. Ensure that the ASR dialog group is at the top of the list, because this is an ordered list.
- Step 11** At the top of the page, click **Save**. ASR is now enabled for your trigger but you are not ready to test yet.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When your ASR dialog group displays at the top of the dialog groups list.

Task 4: Creating Alternate Pronunciations for Dial by Name

To allow you to use Dial by Name, you are going to use alternate pronunciations.

Activity Procedure

To create an alternate pronunciation, complete the following steps:

- Step 1** Open another Internet Explorer window and type in this URL: [https:// <Unified CCX IP Address>/appuser](https://<Unified CCX IP Address>/appuser).
- Step 2** Enter your student credentials.
- Step 3** Navigate to **User Options > Alternate Pronunciations for Call by Name**.
- Step 4** Enter the first and last name for your student. For example, for student01 enter: First Name: **Student**, Last Name: **One**. Please enter the student name as indicated so that other students know a name to use when they test, but you can add other names as well.
- Step 5** Click **Save**.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can view your alternate pronunciation on your user page.

Task 5: Generating a Name Grammar

To allow you to use Dial by Name, you need to generate the name grammar for AutoAttendant. *This is to be performed by the instructor because you do not want everyone trying to generate a grammar at the same time.*

Activity Procedure: (Instructor Demo)

To generate a Name Grammar, complete the following steps:

- Step 1** In Cisco Unified CCX Administration, navigate to **Tools > User Management > Name Grammar Generation**.
- Step 2** Click the link **Generate Name Grammar Now**.
- Step 3** It should take a few moments and you can confirm the generation by refreshing the page and noting the updated time and date.
- Step 4** You are now ready to test.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you can see that a grammar generation has taken place.

Task 6: Testing ASR Operation for AutoAttendant

You can now test the AutoAttendant application using Automatic Speech Recognition.

Activity Procedure

To test ASR operation using the AutoAttendant application, complete these steps:

- Step 1** Dial your route point to access the AutoAttendant. The AutoAttendant should prompt you to “Press or say...” your entries.
- Step 2** Choose to **Dial by Number (1)**.
- Step 3** Enter or say the number of a fellow student. Notice that the spoken name was not used. Why? Chat a moment and disconnect the call.
- Step 4** Dial your route point again.
- Step 5** Choose to **Dial by Name (2)**.
- Step 6** Say the name, such as “Student Three.”
- Step 7** You should then hear the spoken name (“Transferring to Student Three”) and be transferred to their phone.
- Step 8** Play a few minutes.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to use speech to navigate the AutoAttendant application.

Lab 6-1: Using the Cisco Unified Real-Time Monitoring Tool

Complete this lab activity to practice what you learned in module 6 lesson 1.

Activity Objective

In this activity, you will install and practice using Cisco Unified RTMT. After completing this activity, you will be able to meet these objectives:

- Install the Cisco Unified RTMT
- Collect log files using Cisco Unified RTMT

Required Resources

These are the resources and equipment required to complete this activity:

- Operational Cisco Unified Communications Manager
- Cisco Unified Contact Center Express (CCX)
- Student PC with MS Windows XP, SP2
- Cisco IP Phone, 7940 or better
- Network connectivity between the Cisco Unified CCX system and the PC workstation

Job Aids

These job aids are available to help you complete the lab activity.

- UCCXD Student Guide
- UCCXD Lab Guide
- Cisco Unified CCX Administration

Server	IP Address
Cisco Unified Communications Manager	10.10.1.10
Cisco Unified CCX	10.10.1.40
Domain Controller / Email Server / External Database Server	10.10.1.2

Task 1: Installing the Cisco Unified RTMT

In this lab, you will install the Cisco Unified RTMT from Cisco Unified CCX.

Activity Procedure

To install the RTMT, complete the following steps:

- Step 1** In Cisco Unified CCX Administration, navigate to **Tools > Plug-ins**.
- Step 2** Click the link, **Cisco Unified CCX Real-Time Monitoring Tool for Windows**, and choose to **“Open”** the file.
- Step 3** At the Introduction dialog window, click **Next**.
- Step 4** At the License Agreement dialog window, choose to accept the terms and click **Next**.
- Step 5** At the Choose Install Folder dialog window, accept the default folder and click **Next**.
- Step 6** At the Pre-Installation Summary dialog window, click **Install**.
- Step 7** When the installation is complete, click **Done**.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you have successfully installed RTMT.

Task 2: Collecting Log Files

Guidance in this task is designed to give you quick access to the procedures required to access log files. Feel free to deviate as you desire.

Activity Procedure

To collect log files using the RTMT, complete the following steps:

- Step 1** From your desktop double-click the **UCCX Real-Time Monitoring Tool** icon to start Cisco Unified RTMT.
- Step 2** Enter these values and click OK to open the program:
 - Host IP Address: 10.10.1.40 (or IP address of the Cisco Unified CCX server)
 - User Name: administrator
 - Password: !QAZ@WSX
 - Port: 8443, Secured Connection.
- Step 3** Click **OK** to use the “Default” configuration.
- Step 4** In the navigation window, click **Trace & Log Central**.
- Step 5** In the Trace & Log Central window, double-click **Remote Browse**.
- Step 6** In the Remote Browse dialog window that opens choose **Trace Logs** and click **Next**.
- Step 7** In the Select UCCX Services/Applications dialog window, check the checkbox for Cisco Unified CCX Engine. Click **Next**.
- Step 8** In the Select System Services/Applications dialog window, check the checkbox for Event Viewer-Application Log. Click **Finish**.

- Step 9** When you get the dialog box, the Remote Browse is ready; click **OK**.
- Step 10** In the Remote Browse window, double-click these items: **nodes > mcs-train40** (or whatever the hostname is for your Cisco Unified CCX server). You should now see two subcategories: UCCX and System.
- Step 11** Continue drilling down for both of these until you see individual files listed on the right side.
- Step 12** Double click a filename to open one of these files. You should be able to open and view of these files collected. Notice that you can refresh the file listing and you can highlight and download one or more files.
- Step 13** Take a few moments to look around at some of the other functions of Cisco Unified RTMT.

Activity Verification

You have successfully completed this activity when you have attained these results:

- When you are able to collect log files with RTMT.