Unified IP IVR Installation and Configuration

After you have configured Unified CM, install and configure Unified IP IVR.

This section contains the following:

Cisco IP IVR Installation

To install Unified IP IVR, you must install Unified CCX and select the Unified IP IVR product package during the installation.

The Unified CCX installation procedure contains two steps:

1. **Installation**: Loads the Unified CCX software onto your system. At this time, you select the deployment type (Unified CM) and a language.
2. **Server Setup**: After you install Unified CCX, you use the Unified CCX Administration web application to perform the initial system setup.
3. **Server Setup**: Enables the specific Unified CCX components that will run on a particular server. Also determines if a server will function as a standby server for high availability. This procedure is done for each Unified CCX node in a cluster, including the one on which you perform the cluster setup.

Once these installation and setup procedures are done, you will have access to the complete set of Unified CCX Administration features that are licensed for your Unified CCX product.

For installation instructions, including the planning of your Unified IP IVR installation, a pre-installation check list, and an installation and setup check list, see the *Cisco Unified Contact Center Express Install and Upgrade Guide* at the Install and Upgrade Guides.

Unified IP IVR Configuration

After you install and perform the initial set up of Unified IP IVR, use the Unified CCX Administration web interface to perform a variety of additional set up and configuration tasks.

These tasks include:

- Configuring Unified CCX to work with Unified CM
- Configuring the required subsystems
- Configuring Unified CCX for Unified IP IVR

You can access the Unified CCX Administration web interface from a server on which Unified CCX is installed or from a client system with access to your network.

From a web browser on any computer in your network, enter the following URL: *http://servername/AppAdmin* where *servername* is the host name or IP address of the Unified CCX node.

For detailed instructions about configuring Unified CCX and Unified IP IVR, see the *Cisco Unified Contact Center Express Administration Guide* at http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html. The procedure locations referenced in the table are found in the administration guide.

See the http://www.cisco.com/en/US/products/sw/custcosw/ps1846/tsd_products_support_series_home.html for the latest Unified CCX documentation.

Unified IP IVR Configuration Checklist

Do the following tasks in the given order.

Table 1: Unified IP IVR Configuration Checklist

Task	Purpose and Notes	Configuration Location	Procedure Location
1. Configure the JTAPI subsystem on Unified CCX.	The Unified CCX Engine uses the JTAPI subsystem to send and receive calls from Unified CM.	JTAPI Configuration web page From the Unified CCX Administration web page menu bar, select **Subsystems** > **JTAPI**. Then select **JTAPI provider** in the option list on the left.	*Configuring a JTAPI Provider* section in the *Cisco Unified Contact Center Express Administration Guide*.
	For the JTAPI Provider configuration, select the IP address(es) or hostname(s) of one of the Available CTI Manager machines. The Available CTI Managers list box lists all the available CTI Managers that are in the Unified CM cluster. The primary provider is the first value in the list of selected CTI managers in the cluster, and the secondary provider is the second (also the last) value in the list of CTI selected managers in the cluster. There cannot be more than two selected CTI Managers for JTAPI Provider Configuration. The User Prefix is used by Unified CCX to create the Application User in Unified CM that controls the Route Points and CTI Ports. Make sure the users (<User prefix> +"_"+,nodeid) are NOT defined in Unified CM. On clicking **OK**, JTAPI users are created in the Unified CM. Depending on how many Unified CCX engines are enabled in the cluster, those many JTAPI users are created. In an IP IVR system installed independently of Unified CCX, you do not need to configure the RmCm subsystem. That configuration is shown here only to show you what you would have to configure next if your IP IVR system were installed as a part of Unified CCX.		

Task	Purpose and Notes	Configuration Location	Procedure Location
2. Provision a JTAPI Call Control Group.	The Unified CCX system uses JTAPI call control groups to pool together a series of CTI ports, which the system uses to serve calls as they arrive at the Unified CCX server. Unified CCX automatically adds the needed CTI ports port assignments and the specified call control groups to the Unified CM database when you click **Update**.	**JTAPI Call Control Group Configuration** web page From the **Unified CCX Administration** web page menu bar, select **Subsystems** > **JTAPI**. Then select **JTAPI Call Control Group** in the option list on the left.	*Provisioning JTAPI Call Control Groups* section in the *Cisco Unified Contact Center Administration Guide*.
3. Check to make sure the JTAPI information in Unified CCX and Unified CM is synchronized. If it is not synchronized, resynchronize it.	Makes sure the JTAPI configuration data entered in Unified CM through Unified CCX is synchronized with the JTAPI configuration data in Unified CM for every server in both the Unified CM cluster and the Unified CCX cluster. The check and Synchronize option generates a report describing the status of JTAPI information (JTAPI Users, Port Groups, and Triggers).	The JTAPI Resynchronize dialog box From the **Unified CCX Administration** web page menu bar, select **Subsystems** > **JTAPI**. Then select **Resynchronize** in the option list on the left.	*Provisioning JTAPI Call Control Group*s section in the *Cisco Unified Contact Center Express Administration Guide*.

Task	Purpose and Notes	Configuration Location	Procedure Location
4. Provision the Cisco Media Termination Subsystem.	Specifies the media you need for your system. The Unified CCX server uses the Real-Time Transport Protocol (RTP) to send and receive media packets over the IP network. To ensure that the Unified CCX can communicate with your Cisco Unified Communications system, you need to configure the RTP ports that the Unified CCX Engine will use to send and receive RTP data.	**Cisco Media Termination Dialog Group Configuration** web page From the **Unified CCX Administration** web page menu bar, select **Subsystems** > **Cisco Media** and then in the upper, right corner of the window, click the **Add a New CMT Dialog Control Group** link.	*Provisioning the Cisco Media Subsystem* section in the *Cisco Unified Contact Center Express Administration Guide*.
	You can choose different types of media, from a simple type of media capable of supporting prompts and DTMF (Cisco Media Termination) to a more complex and rich type of media capable of supporting speech recognition. It is even possible to provision calls without media. Because of the media capabilities, you must provision media manually. Each call requires both a CTI port and a media channel for the system to be backward compatible or to support media interactions. Media resources are licensed and sold as IVR ports so you can provision more channels than you are licensed for and, at run-time, licensing will be enforced to prevent the system accepting calls, as this would violate your licensing agreements.		

Task	Purpose and Notes	Configuration Location	Procedure Location
5. Provision and configure any other Unified CCX subsystems that you will use.	Expands the functionality of your Unified IP IVR system.	This task includes the following three tasks and depends on whether or not you have bought licenses for subsystems and have installed them when you installed Unified CCX.	*Provisioning ASR and TTS* section in the *Cisco Unified Contact Center Express Administration Guide*.
5.1 Provision an MRCP Automated Speech Recognition (ASR) subsystem. (optional)	Allows users to navigate through a menu of options by speaking instead of pressing keys on a touch-tone telephone.	MRCP ASR Configuration web page In the **Unified CCX Administration** web page, select **Subsystems** > **MRCP ASR**.	
	The MRCP ASR software is optional and requires a vendor license. The License is the number of MRCP ASR port licenses purchased from the ASR vendor. For the currently supported MRCP ASR vendors, see the current Unified CCX Compatibility Matrix. To configure an MRCP ASR server or a dialog group, click the **MRCP ASR Servers** or **MRCP ASR Dialog Groups** respectively in the column on the left of the web page. The Unified CCX system uses the Media subsystem of the Unified CCX Engine to configure Cisco Media Termination (CMT) dialog groups that can be used to handle simple Dual-Tone Multi-Frequency (DTMF) based dialog interactions with customers. A dialog group is a pool of dialog channels in which each channel is used to perform dialog interactions with a caller. This step involves the configuration of your: • MRCP ASR Providers • MRCP ASR Servers • MRCP ASR Dialog Groups		

Task	Purpose and Notes	Configuration Location	Procedure Location
5.2 Provision an MRCP Text-to-Speech (TTS) subsystem. (optional)	Converts text (UNICODE) into spoken words in order to provide a user with information or to prompt a user to respond to an action.	**MRCP TTS Configuration** web page In the **Unified CCX Administration** web page, select **Subsystems** > **MRCP TTS**, click **Add MRCP TTS Provider**, link, fill in the information required and click **Add.**	*Provisioning ASR and TTS* section in the *Cisco Unified Contact Center Express Administration Guide*.
	The MRCP TTS software is optional and requires a vendor license. For the currently supported MRCP TTS vendors, see the current Unified CCX Compatibility Matrix. To configure an MRCP TTS server or default gender, click on the **MRCP TTS Servers** or the **MRCP TTS Default Genders** in the column on the left of the web page. This step involves the configuration of your: • MRCP TTS Providers • MRCP TTS Servers • MRCP TTS Default Genders		
5.3 Provision the HTTP subsystem. (optional)	Enables Unified IP IVR applications to respond to requests from a variety of web clients, including computers and IP phones. If you are not using HTTP applications, you do not need to provision the HTTP subsystem.	**HTTP Trigger Configuration** web page From the Unified CCX Administration menu bar, choose **Subsystems** > **HTTP**, and click the **Add a New HTTP Trigger** link, fill in the information required and click **Add**.	*Provisioning the HTTP Subsystem* section in the *Cisco Unified Contact Center Express Administration Guide*.

Task	Purpose and Notes	Configuration Location	Procedure Location
5.4 Provision the database subsystem. (optional)	Enables Unified CCX applications to interact with database servers in order to make database information accessible to contacts. For example, if you want customers to be able to dial in to automatically get account information, you would need this subsystem. The database subsystem is optional. If you are not using Unified CCX applications that require access to databases, you do not need to provision the Database subsystem.	The **ODBC Data Source Administrator** window and the **Enterprise Database Subsystem Configuration** web page This involves two procedures: • On the script server, select **Start** > **Programs** > **Administrative Tools** > **Data Sources (ODBC)**. • From the Unified CCX Administration menu bar, select **Subsystems** > **Database**, • and in the **Database Subsystem Configuration** web page, click **Add a New Datasource**.	*Provisioning the Database Subsystem* section in the *Cisco Unified Contact Center Express Administration Guide*.
5.5 Provision the email subsystem. (optional)	Communicates with your email server and enables your Unified IP IVR applications to create and send email.	From the Unified CCX Administration menu bar, select **Subsystems** > **eMail**.	*Provisioning the eMail Subsystem* section in the *Cisco Unified Contact Center Express Administration Guide*.
	The email subsystem is optional. If you are not using email applications, you do not need to provision the eMail subsystem. Once you configure email functionality, the Unified CCX scripts created with the email steps will function correctly. The email configuration identifies the default email address and server to be used for sending email (including e-pages and faxes) and for receiving acknowledgments: • A Mail Server is a fully-qualified email server name. For example: server.domain.com) • An eMail Address is an existing fully qualified email address for the administrative account. For Example:administrator@domain.com		

Task	Purpose and Notes	Configuration Location	Procedure Location
6. Start the Application Engine	The Application Engine is the execution vehicle for Unified IP IVR scripts. The application engine runs when you install Unified CCX. However, you need to restart the engine after you configure your subsystems.	**Unified CCX Control Center** web page From Unified CCX Administration menu bar, select **System** > **Control Center**. Then click **Component Activation**. Finally, on the Component Activation page, select all your components and click **Update.**	*Starting, Stopping, and Restarting Unified CCX Services* section in the *Cisco Unified Contact Center Express Administration Guide*.
7. Install and configure the applications that you will use with Unified CCX (as needed).	Enable the Unified IP IVR applications you want.	This task is subdivided into 5 tasks summarized in the following Unified CCX *Application Configuration Check List*.	See Unified IP IVR Application Configuration Checklist, on page 9. For instructions for how to use a specific web page, from the menu bar, select **Help** > **For this page**.

Unified IP IVR Application Configuration Checklist

Unified IP IVR applications require Unified IP IVR scripts. For instructions on creating and editing scripts see the Cisco Unified Contact Center Express Script Developer Series documentation at the Cisco Unified Contact Center Express End-User Guides for the latest Unified CCX documentation.

To configure your applications for Unified IP IVR, do the following tasks in the given order.

Table 2: Unified IP IVR Application Configuration Checklist

Task	Purpose and Notes	Configuration Location	Procedure Location
1. If needed, edit the script that your Unified CCX application will use.	To customize the script for your needs. By double clicking on an uploaded script listed in the **Unified CCX Script Management** page, you can open the script with the Unified CCX Editor.	Unified CCX Script Editor (for creating or editing scripts) and Unified CCX Administration web pages	*Managing Scripts, Prompts, Grammars, and Documents* section in the *Cisco Unified Contact Center Express Administration Guide*.
	See also the Unified CCX Script Developer Series documentation: • *Volume 1, Getting Started with Cisco Unified CCX Scripting* • *Volume 2, Cisco Unified CCX Editor Reference* • *Volume 3, Cisco Unified CCX Expression Language Reference* These three PDF documents contain the same information that is in the Unified CCX Editor online help, only in PDF format, rather than HTML format. If you are customizing the Cisco Unified CM AutoAttendant, you should see the customization procedure in the . You can access this guide through the Unified CM documentation web page.		

Task	Purpose and Notes	Configuration Location	Procedure Location
2. If needed, create or customize any prompts that your Unified CCX script will use.	Through Unified CCX Administration Media Configuration, you can modify the prompts that your script uses. You can also upload spoken names for each person in the organization, so callers receive spoken names rather than, for example, spelled-out names when the automated attendant is asking the caller to confirm which party they want.	**Unified CCX Prompt Management** web page From the menu bar in the **Unified CCX Administration** web page, select **Applications** > **Prompt Management**.	*Managing Scripts, Prompts, Grammars, and Documents* section in the *Cisco Unified Contact Center Express Administration Guide*.
	Some notes on Prompts • The Cisco Unified CM AutoAttendant, for example, comes with a prerecorded, generic welcome prompt. You should record your own welcome prompt to customize your automated attendant for the specific role that it is to fulfill for your organization. • You can use any sound recording software to record your prompts if the software can save the prompt in the required file format. You can record a different welcome prompt for each instance of your script application that you create. • You can record your prompts by using Microsoft Sound Recorder. Save each prompt as a .wav file in CCITT (mu-law) 8-kHz, 8-bit, mono format. You must have a microphone and speakers on your system to use the software.		
3. Upload the script.	To put the needed scripts in the Unified CCX repository so that they are available for use in a Unified CCX application.	**Unified CCX Script Management** web page From the Unified CCX Administration menu bar, select **Applications** > **Script Management**. In the **Script Management** page, click **Upload New Scripts**. Then in the **Explorer User Prompt** dialog box, type in the script name in expression format.	*Uploading a Script* section in the *Cisco Unified Contact Center Express Administration Guide*. If you have questions when on a Unified CCX Administration web page, from the menu bar, select the **Help** > **For this page**.

Task	Purpose and Notes	Configuration Location	Procedure Location
4. Upload any prompts needed for the script.	For customized or language specific prompts	**Unified CCX Prompt Management** web page From the Unified CCX Administration menu bar, select **Applications** > **Prompt Management**. Then in the Prompt Management page, click **Upload New Prompts**.	*Uploading prompts* section in the *Cisco Unified Contact Center Express Administration Guide*.
5. Add the application.	To perform a telephony task through Unified CCX, you need a Unified CCX application. Adding an application involves giving it a name, assigning it a script, and defining any application variables. An example application that comes with Unified IP IVR is the **Cisco Unified CM AutoAttendant**. The script for the Cisco Unified CM AutoAttendant is aa.aef.	**Unified CCX Application Configuration** web page From the **Unified CCX Administration** web page menu bar, select **Applications** > **Application Management** and then in the upper, right corner of the window, click the **Add New Application** link. Next, Under Application Type, select **Cisco Script Application** and click **Next.**	*Configure a Cisco Script Application* section in the *Cisco Unified Contact Center Express Administration Guide*.
6. Give the application a name and assign the script to the application.	To make the application available for use.	**Unified CCX Script Application** web page	*Configure a Cisco Script Application* section in the *Cisco Unified Contact Center Express Administration Guide*.
7. Customize the application parameters. If you are using a Cisco supplied script, you might also want to customize the application prompts. For example, you can record and upload your own prompts as previously explained in this check list.	On the Application page, if there are variables, you can customize the application by the definitions (values) you give the variables. The variables are the parameters you specify on the application web page in the Unified CCX Administration tool.	**Unified CCX Cisco Script Application** web page	*Configure a Cisco Script Application* section in the *Cisco Unified Contact Center Express Administration Guide*.

Task	Purpose and Notes	Configuration Location	Procedure Location
8. Add the Application Trigger.	Enable the application to respond to JTAPI calls and/or HTTP requests. When you configure JTAPI triggers, you need to specify the CTI Route Point attributes used by the trigger. For example, device pool, location, and voice mail profile.	**Unified CCX Add Application Triggers** web page	See the online help for that web page. Also see *Add Application Triggers* section in the *Cisco Unified Contact Center Express Administration Guide*.
	Some Configuration Specifics **1** From the **Unified CCX Administration** web page, select **Applications** > **Application Management**. **2** In the **Application Configuration** web page, Click the name of your new application. **3** In the **Cisco Script Application** web page for your new application, the **Add New Trigger** link. **4** In the pop-up window, select the trigger type and click **Next**. **5** Enter the trigger phone number or web address and the other configuration information that you need.		
9. Test the application.	Make sure the application works. Before the Unified IP IVR system can receive calls, the Unified CCX engine must be running.	From one of your phones, phone the number specified by the trigger. Or if you have an HTTP trigger, from your computer, email the specified web address.	Your application specific documentation.