Management of Prompts, Grammars, Documents, and Custom Files

Manage Prompt Files

Many applications make use of pre-recorded prompts stored as .wav files, which are played back to callers to provide information and elicit caller response.

Several system-level prompt files are loaded during Unified CCX installation. However, any file you create needs to be made available to the Unified CCX Engine before a Unified CCX application can use them. This is done through the Unified CCX cluster's Repository datastore, where the prompt, grammar, and document files are created, stored, and updated.

Note Support for High Availability and remote servers is available only in multiple-server deployments.

The Unified CCX Server's local disk prompt files are synchronized with the central repository during Unified CCX Engine startup and during run-time when the Repository datastore is modified.

To access the Prompt Management page, perform the following steps:

Step 1 From the Unified CCXAdministration menu bar, choose **Application** > **Prompt Management**.

Step 2 The Prompt Management web page opens to display the following fields and buttons.

Field or Button	Description
Language	Lists the location of the items listed in the Name column.

Field or Button	Description
Folder	Path of the current item selected in the Name column with respect to the root folder.
Name	Name of the language.
Size	The size of the prompt file prefixed with KB. The file size is converted from bytes to KB. **Note** This column is usually blank on the root page because the items on this page are usually folders.
Date Modified	The date and time when the document was last uploaded or changed along with time zone.
Modified by	The user ID of the person who performed these modifications.
Delete	Click **Delete** icon to remove the folder and its contents from the repository.
Rename	Click **Rename** icon to rename the folder in the repository.
Refresh	Click **Refresh** icon to refresh the folder in the repository.
Create Language	Displays a dialog box that lets you create a new language folder.
Upload Zip Files	Displays a dialog box that lets you locate and upload a zip file. **Note** The zip file must contain language folders in the root directory. Be sure to place the grammar files in folders and then zip the folders.

When you click a hyperlink (if configured) in the Name folder column, a secondary page appears. From this page, you can create a new subfolder or upload a new prompt.

Manage Grammar Files

The Unified CCX system uses specific grammars when recognizing and responding to caller response to prompts. A grammar is a specific set of all possible spoken phrases and Dual Tone Multi-Frequency (DTMF) digits to be recognized by Unified CCX applications and acted upon during run time.

Several system-level grammar files are loaded during Unified CCX installation. However, any file *you* create needs to be made available to the Unified CCX Engine before a Unified CCX application can use them. This is done through the Unified CCX cluster's Repository datastore, where the grammar files are created, stored, and updated.

Note Support for High Availability and remote servers is available only in multiple-server deployments.

The Unified CCX Server's local disk grammar files are synchronized with the central repository during Unified CCX Engine startup and during run-time when the Repository datastore is modified.

To access the Grammar Management page, perform the following steps:

Step 1 From the Unified CCXAdministration menu bar, choose **Applications** > **Grammar Management**.

Step 2 The Grammar Management web page opens to display the following fields and buttons.

Field or Button	Description
Language	Lists the location of the items listed in the Name column.
Folder	Path of the current item selected in the Name column with respect to the root folder.
Codec	The codec chosen during installation for this Unified CCX server. Display only.
Name	Name of the language folder.
Size	The size of the grammar file prefixed with KB. The file size is converted from bytes to KB. This column is usually blank on the root page as the items on this page are usually folders.
Date Modified	The date and time when the document was last uploaded or changed along with time zone.
Modified by	The user ID of the person who performed these modifications.
Delete	Displays a dialog box that lets you delete an existing language folder.
Rename	Displays a dialog box that lets you rename an existing language folder.
Refresh	Refreshes the specified folder in the repository.
Create Language	Displays a dialog box that lets you create a new language folder.
Upload Zip Files	Displays a dialog box that lets you locate and upload a zip file. **Note** The zip file must contain language folders in the root directory. Be sure to place the grammar files in folders and then zip the folders.

When you click a hyperlink (if configured) in the Name folder column, a secondary page appears. From this page, you can create a subfolder or upload a new Prompt, Grammar, or Document.

Manage Document Files

Documents might consist of .txt, .doc, .jsp, or .html files. Documents can also include custom classes and Java Archive (JAR) files that allow you to customize the performance of your Unified CCX system.

Several system-level document files are loaded during Unified CCX installation. However, any file you create needs to be made available to the Unified CCX Engine before a Unified CCX application can use them. This is done through the Unified CCX cluster's Repository datastore, where the document files are created, stored, and updated.

Note Support for High Availability and remote servers is available only in multiple-server deployments.

The Unified CCX Server's local disk document files are synchronized with the central repository during Unified CCX Engine startup and during run-time when the Repository datastore is modified.

To access the Document Management page, perform the following steps:

Step 1 From the Unified CCXAdministration menu bar, choose **Applications** > **Document Management**.

Step 2 The Document Management web page opens to display the following fields and buttons.

Field or Button	Description
Language	Lists the location of the items listed in the Name column.
Folder	Path of the current item selected in the Name column with respect to the root folder.
Name	Name of the language folder.
Size	The size of the grammar file prefixed with KB. The file size is converted from bytes to KB. This column is usually blank on the root page as the items on this page are usually folders.
Date Modified	The date and time when the document was last uploaded or changed along with time zone.
Modified by	The user ID of the person who performed these modifications.
Delete	Displays a dialog box that lets you delete an existing language folder.
Rename	Displays a dialog box that lets you rename an existing language folder.
Refresh	Refreshes the specified folder in the repository.

Field or Button	Description
Create Language	Displays a dialog box that lets you create a new language folder.
Upload Zip Files	Displays a dialog box that lets you locate and upload a zip file. **Note** The zip file must contain language folders in the root directory. Be sure to place the grammar files in folders and then zip the folders.

When you click a hyperlink (if configured) in the Name folder column, a secondary page appears. From this page, you can create a subfolder or upload a new Prompt, Grammar, or Document.

Language Management

The topics in this section describe the procedure for managing languages.

Create New Language

Follow this procedure to create a new Prompt, Grammar, or Document language folder in the Repository datastore:

Step 1 From the Unified CCXAdministration menu bar, choose **Applications** > **Prompt Management** or **Grammar Management** or **Document Management**.

The corresponding Management web page opens.

Step 2 Click **Create New Folder** or **Create Language** icon that displays in the tool bar in the upper, left corner of the window or the **Create New Folder** or **Create Language** button that displays at the bottom of the window.

The Create New Folder or Create Language dialog box opens.

Step 3 Perform any one of the following actions:

- Select a value from the Language drop-down list.
- If you are unable to find a particular language or if the Language drop-down list is empty, click **Edit** button to add a new Language. The Explorer User Prompt dialog box opens. Enter the name of the new language in the Language Name field and click **OK**.

Step 4 Click **Create**.

A new language folder Name appears on the summary web page.

Note Ensure that the language created is supported in the Script Editor. For more information on the list of languages supported by the Script Editor, see the "Language Class and Code Specifications on the Web" section of the *Cisco Unified Contact Center Express Expression Language Reference Guide* at https://developer.cisco.com/docs/contact-center-express/#language-class-and-code-specifications-on-the-web.

Rename Language

Follow this procedure to rename a Prompt/Grammar/Document language folder in the Repository datastore:

Step 1 From the Unified CCXAdministration menu bar, choose **Applications** > **Prompt Management** or **Grammar Management** or **Document Management**.

The corresponding Management web page opens.

Step 2 Select the **Rename** icon against the folder you want to rename.

The Rename Folder dialog box opens.

Step 3 From the Select Language Folder To Rename field, choose the name of the folder to be renamed.

Step 4 In the Rename Folder To field, enter the new name.

Step 5 Click **Rename**.

The web page then refreshes itself to provide a summary and status. Click **Return to Document Management** to navigate to the respective Prompt or Grammar or Document Management page.

Delete Language

Follow this procedure to delete a Prompt/Grammar/Document language folder in the Repository datastore:

Step 1 From the Unified CCXAdministration menu bar, choose **Applications** > **Prompt Management** or **Grammar Management** or **Document Management**.

The corresponding Management web page opens.

Step 2 Select the **Delete** icon against the respective folder, that you want to delete.

A dialog box opens to confirm the Delete action for the specific folder.

Step 3 Click **OK** to delete.

Upload Zip Files to Language Folder

In addition to adding Prompt or Document files individually, you can upload multiple files from a Zip file.

Note The maximum upload file size is 20 MB, whether it is a single file or a Zip file.

Tip Be sure to upload (or download) large zip files in Prompt, Grammar and Document Management pages during off-peak hours.

Step 1 From the Unified CCXAdministration menu bar, choose **Applications** > **Prompt Management** or **Grammar Management** or **Document Management**.

The corresponding Management web page opens.

Step 2 Click **Upload Zip Files** icon that displays in the tool bar in the upper, left corner of the window or the **Upload Zip Files** button that displays at the bottom of the window to upload a new prompt or zip file.

The Upload Document dialog box opens.

Step 3 Enter the path for the script file or click **Browse** to locate the script or the zip file containing the script files. Select the required script file and click **Open**.

Note You can upload only files with extension .aef or .zip.

Step 4 Click the **Upload** button to upload the new script to the repository. A dialog box confirms the successful upload of the files.

Note If you try to upload invalid script files, the upload will be unsuccessful and an error message will be displayed on the upload dialog box. You can also create user-defined directories using “Create a New folder” option and uploads scripts to those directories.

Step 5 By default, the files are unzipped after uploading. If you want to change this option, uncheck the **Unzip after uploading** check box.

Caution In the Documents Management summary web page, you have the option to zip or to unzip the file before uploading. By default, this check box is checked to unzip the file before uploading. Ensure to uncheck the check box if you want to upload it as a zipped file.

The maximum upload file size of the Zip file is 20 MB.

Step 6 The contents of the zip file is uploaded to the folder. On successful uploading of the zip file, the status icon is updated accordingly. Click **Return to Document Management** button to go back to the respective Management web page.

Upload of Prompt Files

Prompts are messages that the Unified CCX system plays back to callers. Unified CCX applications often use prompts to obtain caller response so that the Unified CCX system can transfer calls, receive account information, and perform other functions.

To use prompts in your Unified CCX applications, you must first create a folder to store them. You can then record and upload new user prompts, delete prompts, and modify existing prompts.

You store pre-recorded prompts as `.wav` files. The Unified CCX system also allows users to record spoken names, which you can upload to be used in the playback of prompts.

Note

- Unified CCX supports audio playback of RIFF header .wav files only though your MRCP vendor may support multiple `.wav` file header formats.
- Unified CCX supports u-Law and A-Law prompts when G.711 voice codec is selected.
- Ensure that your prompt file (.wav) size is minimum of one byte. If you try to upload a prompt file that is less than one byte, the following error message is displayed:

  ```
  Failed to upload file with path:
  ```

ScanSoft uses RIFF headers. When generating a `.wav` file prompt specifically for Nuance, ensure that you consider the server playing the prompt:

- If the prompt is played by the Nuance Speech Server, the `.wav` file requires a SPHERE header.
- If the prompt is played by the Unified CCX server, the `.wav` file requires a RIFF header.

Nuance provides a tool to convert `.wav` files from RIFF headers to SPHERE headers.

Managing prompts can include one or more of the following activities:

- **Creating a folder:** You must create a folder to store the `.wav` files that the Unified CCX system uses as prompts.
- **Recording a prompt:** You can record prompts by using Recording Step in Unified CCX or any third-party utility.
- **Upload one or more prompts:** You can replace any of the stored prompts used by Cisco script applications with a different `.wav` file by uploading the new.wav file. If necessary, you can also add spoken name prompts. Some Unified CCX applications play back the pre-recorded names of the people that callers are trying to reach, to allow the caller to confirm the transfer of the call.

Note In a HA setup, subscriber goes to Partial Service state while recording a prompt by using Unified CCX or uploading prompts.

Record a Prompt

You can record prompts and save in .wav format to be used in Unified CCX applications. You can use any third-party recording application to record prompts. You can save the prompts for the standard:

- G711- The G711 is a freely distributed public domain codec that has several recording options and is available to any sound recording application. You can save the prompts in μ-Law or A-Law. While saving a prompt file, ensure that the **8.000 kHz, 8 Bit, Mono 7 kb/sec** attribute is selected.

- G729 - The G729 is a freely distributed public domain codec and has several recording options. Some of these options are included in Microsoft Windows systems and are available to any sound recording application.

After you record a prompt, upload the prompt, associate the prompt with an application, and run the application to ensure that the prompt is playing properly.

Add Spoken-Name Prompts

Some Unified CCX applications play back the pre-recorded names of people that callers are trying to reach, to allow callers to confirm the transfer of a call.

To upload .wav files of the spoken names of users, complete the following steps.

Step 1 From the Unified CCXAdministration menu bar, choose **Tools** > **User Management** > **Spoken Name Upload**.

Step 2 The Spoken Name Prompt Upload web page opens with the following fields:

Field	Description
User Id	Unique identifier of the user for which the spoken name is to be uploaded. This is a mandatory field.
Codec	The codec chosen during installation for this Unified CCX server. Display only.
Spoken Name (.wav)	Location of the .wav file. This is a mandatory field.

Step 3 In the User Id field, enter an ID number that will identify the user.

Step 4 In the Spoken Name (.wav) field, enter the path for a .wav file or click **Browse** to navigate to the directory that contains the Spoken Name .wav file.

The Choose File dialog box opens. Select the required script file and click **Open**.

Step 5 Click **Upload** icon that displays in the tool bar in the upper, left corner of the window or click the **Upload** button that displays at the bottom of the window to upload the file.

Step 6 Repeat this process as needed to upload all spoken name .wav files.

Management of Custom Files

Use the Custom File Configuration web page to configure the classpath location of custom classes.

Specify Custom Classpath Entries

Use the Custom Classes Configuration web page to specify the available classpath entries.

Step 1 From the Unified CCXAdministration menu bar, choose **System** > **Custom File Configuration**.

The Custom Classes Configuration web page opens. You can:

- Select required entries from the Available Classpath Entries list and arrange them in the order you want.
- Use the arrow icons to move items between the Available Classpath Entries and Selected Classpath Entries lists.

Step 2 Click **Update** when your selections are complete.

Click **Upload Custom Jar Files** icon that displays in the tool bar in the upper, left corner of the window or the **Upload Custom Jar Files** button that displays at the bottom of the window to upload Jar files. The Document Management web page opens.

AAR File Management

Caution Ensure that the contents of the AAR file are correct and conform to the specifications detailed in this section. If you upload AAR files that do not conform to these specifications, the Unified CCX Engine may not function as designed. Consequently, you need to manually reconfigure some of the applications uploaded through AAR.

AAR files are archives of prompt, grammar, document, scripts, applications, and custom classes that you use as building blocks for applications and extensions.

An AAR file can be simple—for instance, consisting of a single prompt—or complex—for example, containing all the prompts for all languages application uses, the workflow, and the configuration information for an application.

An AAR file is essentially a zip file that contains an optional META-INF directory. The META-INF directory, if it exists, stores configuration data, including security, versioning, extensions, and services.

You create AAR files using Java tools. After creating a file, you need to upload it to Unified CCX.

The following example shows a sample AAR Main Manifest and a sample AAR Application Manifest.

Sample AAR Main Manifest

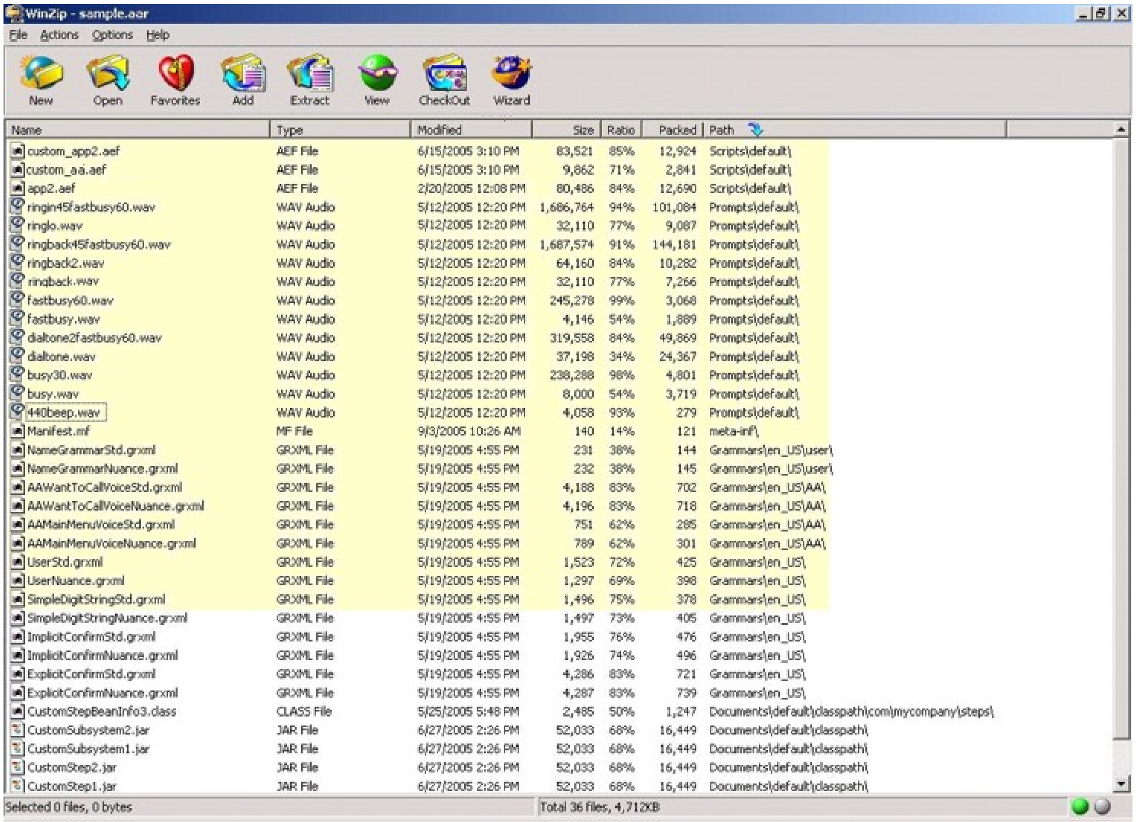
```
Manifest-Version: 1.1Created-By: 1.4.2_05 (Sun Microsystems Inc.)
Built-By: aaruser
Sealed: false
Cisco Unified CCX-Version: 9.0(1)
Class-Path:
Application-List: customApp1.mf customApp2.mf
Subsystem-List: sub1.mf sub2.mf
Palette-List: Custom1 Custom2
Custom1-Palette-Name: Category1
Custom2-Palette-Name: Category2
Custom1-Step-List: step1.mf
Custom2-Step-List: step2.mf step3.mf
Implementation-Title: AAR Test File
Implementation-Version: 4.5(1)
Implementation-Vendor: Cisco Systems, Inc.
Implementation-Vendor-Id: 12345
Implementation-URL: https://www.cisco.com
```

Sample AAR Application Manifest

```
Application-Version: 1.1Created-By: 1.4.2_05 (Sun Microsystems Inc.)
Built-By: aaruser
Sealed: false
Implementation-Title: AAR Application MF
Implementation-Version: 9.0(1)
Implementation-Vendor: Cisco Systems, Inc.
Implementation-Vendor-Id: 12345
Implementation-URL: https://www.cisco.com
Application-Name: Custom AA
Application-Type: Cisco Script Application
Application-Description: Cisco Unified CCX Cisco Custom Application
Application-Id: 100
Max-Sessions: 300
Enabled: true
Script: SSCRIPT[aa.aef]
Default-Script: SSCRIPT[aa.aef]
Initial-Script: SSCRIPT[aa.aef]
```

Figure 1: Sample AAR File

The figure below shows a sample AAR file.



Name	Type	Modified	Size	Ratio	Packed	Path
custom_app2.aef	AEF File	6/15/2005 3:10 PM	83,521	85%	12,924	Scripts\default\
custom_aa.aef	AEF File	6/15/2005 3:10 PM	9,862	71%	2,841	Scripts\default\
app2.aef	AEF File	2/20/2005 12:08 PM	80,486	84%	12,690	Scripts\default\
ringin45fastbusy60.wav	WAV Audio	5/12/2005 12:20 PM	1,686,764	94%	101,084	Prompts\default\
ringlo.wav	WAV Audio	5/12/2005 12:20 PM	32,110	77%	9,087	Prompts\default\
ringback45fastbusy60.wav	WAV Audio	5/12/2005 12:20 PM	1,687,574	91%	144,181	Prompts\default\
ringback2.wav	WAV Audio	5/12/2005 12:20 PM	64,160	84%	10,282	Prompts\default\
ringback.wav	WAV Audio	5/12/2005 12:20 PM	32,110	77%	7,266	Prompts\default\
fastbusy60.wav	WAV Audio	5/12/2005 12:20 PM	245,278	99%	3,068	Prompts\default\
fastbusy.wav	WAV Audio	5/12/2005 12:20 PM	4,146	54%	1,889	Prompts\default\
dialtone2fastbusy60.wav	WAV Audio	5/12/2005 12:20 PM	319,558	84%	49,869	Prompts\default\
dialtone.wav	WAV Audio	5/12/2005 12:20 PM	37,198	34%	24,367	Prompts\default\
busy30.wav	WAV Audio	5/12/2005 12:20 PM	238,288	98%	4,801	Prompts\default\
busy.wav	WAV Audio	5/12/2005 12:20 PM	8,000	54%	3,719	Prompts\default\
440beep.wav	WAV Audio	5/12/2005 12:20 PM	4,058	93%	279	Prompts\default\
Manifest.mf	MF File	9/3/2005 10:26 AM	140	14%	121	meta-inf\
NameGrammarStd.grxml	GRXML File	5/19/2005 4:55 PM	231	38%	144	Grammars\en_US\user\
NameGrammarNuance.grxml	GRXML File	5/19/2005 4:55 PM	232	38%	145	Grammars\en_US\user\
AAWantToCallVoiceStd.grxml	GRXML File	5/19/2005 4:55 PM	4,188	83%	702	Grammars\en_US\AA\
AAWantToCallVoiceNuance.grxml	GRXML File	5/19/2005 4:55 PM	4,196	83%	718	Grammars\en_US\AA\
AAMainMenuVoiceStd.grxml	GRXML File	5/19/2005 4:55 PM	751	62%	285	Grammars\en_US\AA\
AAMainMenuVoiceNuance.grxml	GRXML File	5/19/2005 4:55 PM	789	62%	301	Grammars\en_US\AA\
UserStd.grxml	GRXML File	5/19/2005 4:55 PM	1,523	72%	425	Grammars\en_US\
UserNuance.grxml	GRXML File	5/19/2005 4:55 PM	1,297	69%	398	Grammars\en_US\
SimpleDigitStringStd.grxml	GRXML File	5/19/2005 4:55 PM	1,496	75%	378	Grammars\en_US\
SimpleDigitStringNuance.grxml	GRXML File	5/19/2005 4:55 PM	1,497	73%	405	Grammars\en_US\
ImplicitConfirmStd.grxml	GRXML File	5/19/2005 4:55 PM	1,955	76%	476	Grammars\en_US\
ImplicitConfirmNuance.grxml	GRXML File	5/19/2005 4:55 PM	1,926	74%	496	Grammars\en_US\
ExplicitConfirmStd.grxml	GRXML File	5/19/2005 4:55 PM	4,286	83%	721	Grammars\en_US\
ExplicitConfirmNuance.grxml	GRXML File	5/19/2005 4:55 PM	4,287	83%	739	Grammars\en_US\
CustomStepBeanInfo3.class	CLASS File	5/25/2005 5:48 PM	2,485	50%	1,247	Documents\default\classpath\com\mycompany\steps\
CustomSubsystem2.jar	JAR File	6/27/2005 2:26 PM	52,033	68%	16,449	Documents\default\classpath\
CustomSubsystem1.jar	JAR File	6/27/2005 2:26 PM	52,033	68%	16,449	Documents\default\classpath\
CustomStep2.jar	JAR File	6/27/2005 2:26 PM	52,033	68%	16,449	Documents\default\classpath\
CustomStep1.jar	JAR File	6/27/2005 2:26 PM	52,033	68%	16,449	Documents\default\classpath\

Selected 0 files, 0 bytes

Total 36 files, 4,712KB

To deploy custom applications, steps, and subsystems through an AAR file, you must first create the AAR file using a jar or zip tool and then upload the file through the Unified CCX Administration web page.

AAR File Creation

You create an AAR file using a jar or WinZip tool.

An AAR file format is similar to a Zip file format. It includes an optional META-INF directory, which is used to store configuration data, including security, versioning, extension, and services.

Upload AAR Files

To upload an AAR file, complete the following steps.

Step 1 From the Unified CCXAdministration menu bar, choose **Applications** > **AAR Management**.

The AAR Management web page opens to display the following fields and buttons.

Field or Button	Description
Enter a Valid AAR File to Upload	You can either enter the name of the AAR file or click **Browse** button next to this field to navigate to the directory in which the file is located. This is a mandatory field.
Overwrite existing files	Enable this checkbox in case you want to overwrite the existing files.
Upload	Click this button to upload the AAR file.
Clear	Click this button to clear the selected file.

Enter the path for the AAR file or click **Browse** button to upload the file. The Choose File dialog box opens. Select the required script file and click **Open**.

Step 2 Click **Upload**.

The contents of the AAR file are uploaded to the respective folders.

Note Unified CCX generates an error if the AAR file is not formatted correctly or is missing some custom files.

META-INF Directory

Unified CCX uses the following files and subdirectories in the META-INF directory to configure applications, extensions and services:

- **MANIFEST.MF**. The file used to define extension and application related data.
- **applications**. This directory stores all application configuration files.

Directories for Prompts, Grammars, Documents, and Scripts

The AAR files features also provides directories to store prompts, grammars, documents, and scripts to be uploaded to the Repository.

The AAR directory structure mirrors the function of the Unified CCX Prompt, Grammar, Documents, and Scripts Management web pages. Each directory corresponds to each language for which to install prompts, grammars, documents and scripts. Languages are defined using the Java Locale standard, and the special default directory is used for prompts, grammars, and documents that are common to all languages.

Only Unified CCX supported prompt files and extensions are allowed within each directory. The maximum length of each individual folder name and file name within a directory is 64 characters.

Prompts Directory

The Prompts directory stores prompts that must be uploaded to the prompt repository (to make it seem like they were uploaded through Unified CCX Prompt Management).

Grammars Directory

The Grammars directory stores grammars that must be uploaded to the grammar repository (to make it seem like they were uploaded through Unified CCX Grammar Management).

Documents Directory

The Documents directory stores documents that must be uploaded to the document repository (to make it seem like they were uploaded through Unified CCX Document Management).

Scripts Directory

The Scripts directory stores scripts that must be uploaded to the script repository (to make it seem like they were uploaded through Unified CCX Script Management).

Note The Script directory must define a single directory named **`default`** under which all script files must be listed.

AAR Manifest

An AAR file manifest consists of a main section followed by a list of sections for individual AAR file entries, each separated by a newline.

Information in a manifest file contains *name-value* pairs—which are also referred to as *headers* or *attributes*. Groups of name-value pairs are known as a *section*; sections are separated by empty lines.

The following table describes the expected syntax of the manifest file.

Table 1: Manifest File Syntax

Name	Value
section:	*header +newline
nonempty-section:	+header +newline
newline:	CR LF | LF | CR (not followed by LF)

Name	Value
header:	name: value
name:	alphanum *headerchar
value:	SPACE *otherchar newline *continuation
continuation:	SPACE *otherchar newline
alphanum:	{A-Z} | {a-z} | {0-9}
headerchar:	alphanum | - | _
otherchar:	any UTF-8 character except NUL, CR and LF
Note To prevent corruption of files sent through email, do not use “From” to start a header.	

The main section, which is terminated by an empty line:

- Contains security and configuration information about the AAR file itself, as well as the applications or extensions that this AAR file is defining.
- Defines main attributes that apply to every individual manifest entry. No attribute in this section can have its name equal to “Name”.

The individual sections define various attributes for directories or files contained in this AAR file. Not all files in the AAR file need to be listed in the manifest as entries. The manifest file itself must not be listed. Each section must start with an attribute with the name as “Name”, and the value must be a relative path to the file or directory.

If there are multiple individual sections for the same file entry, the attributes in these sections are merged. If a certain attribute has different values in different sections, the last one is recognized.

Attributes that are not understood are ignored. Such attributes may include implementation-specific information used by applications.

The following table describes the specification for any file that can be archived in the AAR.

Table 2: Syntax for AAR Files

Name	Value
manifest-file	main-section newline *individual-section
main-section	version-info newline *main-attribute
version-info	Manifest-Version: version-number
version-number	digit+{.digit+}*
main-attribute	(any legitimate main attribute) newline
individual-section	Name: value newline *perentry-attribute

Name	Value
perentry-attribute	(any legitimate perentry attribute) newline
newline	CR LF | LF | CR (not followed by LF)
digit	{0-9}

Attribute Types

Attributes that appear in the main section are called main attributes. Attributes that appear in individual sections are called per-entry attributes. Some attributes appear in both the main and individual sections, in which case the per-entry attribute value overrides the main attribute value for the specified entry.

Main Attributes

Main attributes are the attributes that are present in the main section of the manifest:

General main attributes as shown in the following table.

Table 3: General Main Attributes

Attribute	Description
Manifest-Version	The manifest file version. The value is a legitimate version number.
Created-By	The version and the vendor of the java implementation on top of which this manifest file is generated. This attribute is generated by the jar tool.
Cisco Unified CCX-Version	The minimum Unified CCX version release compatible with the AAR file. Unified CCX-version is the accumulation of the Unified CCX release, Unified CCX Service Release, and Unified CCX Engineering Special defined in that order. For example, if the AAR file is compatible with Cisco Unified CCX release 4.5(1)_Build705, SR1_Build001, ES2_Build002, the Cisco Unified CCX-Version would be defined as 4.5(1)SR1ES2_Build002. Only the last build number is taken. So for instance, if the AAR file is compatible with Cisco Unified CCX release 4.5(1)_build705, SR1_Build001, then the Cisco Unified CCX-Version is 4.5(1)SR1_Build001. As a last example, if AAR file is compatible with Cisco Unified CCX release 4.5(1)_Build705 and above, then Cisco Unified CCX-Version would be 4.5(1)_Build705.
Class-Path	The directories or JAR files that need to be installed and accessed by scripts directly. Entries are separated by one or more spaces. The Unified CCX class loader uses the value of this attribute to construct its internal search path where each entry is defined relative to the /Documents/default/classpath directory in this AAR file.
Application-List	The application configuration files from the META-INF/applications/ directory to be installed. Entries are separated by one or more spaces.

Attribute	Description
Subsystem-List	The subsystem configuration files from the META-INF/subsystems/ directory to be installed. Entries are separated by one or more spaces.
Palette-List	The step palettes that need to be installed. Each palette listed in this attribute will have a set of additional attributes that the Unified CCX editor uses to specify the palette name and the palette steps to install. Entries are separated by one or more spaces.
Palette-Name	The unique name of the palette to define in the Unified CCX editor where the specified steps will be grouped and accessible.
Step-List	The step configuration files from the META-INF/steps/ directory to be installed under the palette. Entries are separated by one or more spaces.

Attribute defined for extension identification: Extension-Name

This attribute specifies a name for the extension contained in the AAR file. The name should be a unique identifier.

The following tables shows attributes defined for extension and directory versioning and sealing information. These attributes define features of the extension which the AAR file is a part of. The values of these attributes apply to all the directories in the AAR file, but can be overridden by per-entry attributes.

Table 4: Implementation Category in Main Attributes

Attribute	Description
Implementation-Title	The title of the extension implementation.
Implementation-Version	The version of the extension implementation.
Implementation-Vendor	The organization that maintains the extension implementation.
Implementation-Vendor-Id	The ID of the organization that maintains the extension implementation.
Implementation-URL	The URL from which the extension implementation is downloaded.
Sealed	Defines if this AAR file is sealed. Sealing a directory means that the files uploaded to the corresponding repository will not be modifiable once installed unless the AAR file is reinstalled. If set to true, then all directories in the AAR file default to be sealed, unless individually defined otherwise. If set to false, then all directories are modifiable.

Per-entry Attributes

Per-entry attributes apply only to the individual AAR file entry with which the manifest entry is associated. If the same attribute also appears in the main section, then the value of the per-entry attribute overwrites the main attribute value.

- Example 1: If AAR file a.aar has the following manifest content, then all the files archived in a.aar are sealed, except US English prompts. If the same attributes also appeared in an entry representing a parent directory of another entry, then the value of the per-entry attribute overwrites the parent directory per-entry attribute value.

  ```
  Manifest-Version: 1.1 Created-By: 1.2 (Sun Microsystems Inc.)
  Sealed: true
  Name: Prompts/en_US/
  Sealed: false
  ```

- Example 2: If AAR file a.aar has the following manifest content, then all the US English prompts archived in a.aar are sealed, except US English prompts located in the AA/ directory.

  ```
  Manifest-Version: 1.1 Created-By: 1.2 (Sun Microsystems Inc.)
  Name: Prompts/en_US/
  Sealed: true
  Name: Prompts/en_US/AA/
  Sealed: false
  ```

The per-entry attributes fall into the following groups:

- Attributes defined for file contents: Content-Type

  This attribute specifies the MIME type and subtype of data for a specific file entry in the AAR file. The value should be a string in the form of type/subtype. For example, image/bmp is an image type with a subtype of bmp (representing bitmap). This indicates that the file entry is an image with the data stored as a bitmap. RFC 1521 and 1522 discuss and define the MIME types definition.

- Attributes defined for directory versioning and sealing information:

  These are the same set of attributes defined in Table 4: Implementation Category in Main Attributes, on page 16 for the main attributes. When used as per-entry attributes, these attributes overwrite the main attributes for the individual file specified by the manifest entry.

META-INF Directory Attributes

The Unified CCX recognizes the x.MF file in the applications, subsystems, and steps subdirectories in the META-INF directory and interprets each to configure applications, subsystems, and steps respectively. The x is the base file name as listed on the Application-List main attribute of the manifest file. The X.MF file contains one section defining the configuration of a particular application.

Application Subdirectory Attributes

The following table describes the syntax of the manifest file for the application subdirectory.

Table 5: Application Subdirectory Manifest File Syntax

Name	Value
application-file	version-info newline *application-attribute
version-info	Application-Version: version-number
version-number	digit+{.digit+}*
application-attribute	(any legitimate application attribute) newline
newline	CR LF | LF | CR (not followed by LF)

Name	Value
digit	{0-9}

The application attributes fall into the following groups:

Table 6: Application Attributes

Attribute	Description
Application-Version	The application configurations file version. The value is a legitimate version number. For example, Cisco Unified CCX Release 4.5 starts with version 1.1.
Application-Name	The unique name of the application (see Unified CCX Application Management).
Application-Type	The type of the application (Cisco Script Application, Busy, Ring-No-Answer.
Application-Description (optional)	The description for the application (see Unified CCX Application Management).
Application-Id	A unique identifier for the application (see Unified CCX Application Management).
Max-Sessions	The maximum number of sessions for the application (see Unified CCX Application Management).
Enabled	The application is enabled if the value is set to true (see Unified CCX Application Management). If the value is set to false, the case is ignored.
Script	The main script of a Cisco Script Application (see Unified CCX Application Management). The value must be relative to the Scripts directory. Unified CCX does not support configuring script parameters.
Default-Script	The default script of a Cisco Script Application, Unified ICME Translation or Post Routing application (see Unified CCX Application Management). The value must be relative to the Scripts directory. Unified CCX does not support configuring script parameters.
Initial-Script	The initial script of a Unified CCX Post Routing application (see Unified CCX Application Management). The value must be relative to the Scripts directory. Unified CCX does not support configuring script parameters.

- Attributes defined for application versioning and sealing information: These attributes define features of the application to which the AAR file belongs. These attributes are the same as those listed in Main Attributes, on page 15.