

# **Vocera CUCM Adapter Configuration Guide**

Version 2.6.0

# Notice

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**Last modified:** 2023-02-24 13:35

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## Understanding a Vocera CUCM Adapter Configuration

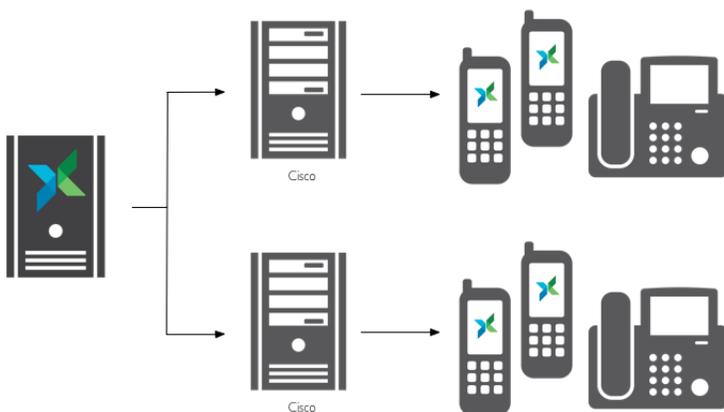
Configure a Vocera CUCM Adapter in the Vocera Platform Web Console to allow communication between the CUCM system and the Vocera Platform.

Adapters send information to and receive information from the Vocera Platform, as well as monitor and collect data. Each adapter is configured to allow the Vocera Platform to communicate with a specific type of resource and any devices that resource may control. For example, the Vocera CUCM Adapter (Cisco Unified Communications Manager) is often used by customers to integrate with Cisco Unified Communications Systems.

Vocera CUCM Adapter configuration allows the Vocera Platform direct communication with CUCM, enabling our system to request Cisco device information (including line appearances and events), and to send alerts and notification messages to Cisco endpoints.

 **Note:** The Vocera CUCM Adapter is designed specifically for Cisco Unified Communications Manager versions 7.1.3 and higher. The Vocera CUCM Adapter has not been tested with other call processing agents.

Communication with Cisco endpoints between the Vocera Platform and Communications Manager is handled through a series of JTAPI requests from the Vocera Platform and JTAPI responses from Communications Manager.



When the Communications Manager service starts, the Vocera Platform automatically sends a JTAPI request to Communications Manager; Communications Manager then sends a JTAPI response to all of its registered devices and endpoints. This information is stored in the Data Manager and populates five Datasets: Devices, Lines, Users, Calls, and Called Parties.

Once this initial connection between the Vocera Platform and Communications Manager is complete, separate JTAPI request and response sequences relay events from each Cisco device to the Vocera Platform. Unlike the initial JTAPI request and response, this exchange happens whenever a new event occurs on a registered device or endpoint. Information regarding the device events is stored in the Vocera Platform Data Manager and is used to populate the Calls Dataset.

## Viewing the Vocera CUCM Adapter Requirements

The minimum requirements for a Vocera CUCM Adapter (CUCM) installation are described here.

### System

The Vocera Platform requires Cisco Unified Communications Manager server version 7.1.3. or higher.

### Phone Registration

The Vocera CUCM Adapter will register only the line configured for Button 1 on that phone in order to receive messages. Sending messages to multiple lines on the same phone is not supported.

The phone must be reset if a new line is added to an existing phone in Communications Manager and the Vocera CUCM Adapter is already enabled in Vocera Platform.

### Ports

Cisco phones connect to the Vocera Platform via port 80/tcp (or 443/tcp if SSL is enabled).

The network connectivity used in communicating with CUCM is handled by the JTAPI library via port 2748/tcp.

### Lines and Devices

One device is required per line that is registered with Vocera Platform. Vocera Platform will send messages to one device using a unique line. Multiple devices cannot receive messages from the same line.

### Datasets

An adapter defines a default Dataset structure in order to function. Attributes are organized by Datasets and store the information required by the adapter. Adapters use this data during the process of receiving and sending messages.

Not all adapters require Datasets to function. When an adapter does require Datasets, the system will determine if they already exist. If they do not exist, the system will create the needed Datasets.

When creating or editing an adapter, use the following information to select the appropriate datasets in the Required Datasets section.

- The **CALLED\_PARTIES Dataset** stores the parties that received a phone call.
- The **CALLS Dataset** stores the phone calls Vocera has monitored.
- The **DEVICES Dataset** stores all details of every device registered with Vocera. Each device to which Vocera can send a message must be listed in this dataset.
- The **LINES Dataset** stores each telephone line reported by a device when it is registered.
- The **PRESENCE\_UPDATE Dataset** stores records created to update a users presence.
- The **REGISTRATION\_HISTORY Dataset** stores the history of all registrations for a device.
- The **USERS Dataset** stores all Vocera users.

#### CALLED\_PARTIES Dataset

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	number	N/A	True	N/A	N/A	String	Attribute that stores the phone number that a call was placed from or to.

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	caller_id	N/A	False	N/A	False	String	Attribute that stores the caller ID of a person making or receiving a phone call.
Link	call	called_parties	True	False	N/A	Many-to-one	The CALLED_PARTIES Dataset is linked to the CALLS Dataset, and the link order is n:1 (many called_parties associated to one call)

### CALLS Dataset

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	call_id	N/A	True	N/A	N/A	String	Attribute that stores the ID of a call. Not to be confused with caller ID. This is an internal Call Manager identifier.
Attribute	established	N/A	False	N/A	True	Date/Time	Attribute that stores time when the call was established.
Attribute	number	N/A	False	N/A	True	String	Attribute that stores the phone number that a call was placed from or to.
Attribute	status	N/A	False	N/A	True	String	Attribute that stores the status of the call. One of INITIATING, CONNECTING, RINGING, ANSWERED, COMPLETED, or FAILED.

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	caller_id	N/A	False	N/A	False	String	Attribute that stores the caller ID of a person making or receiving a phone call.
Attribute	duration	N/A	False	N/A	False	Integer	Attribute that stores the length of a call.
Link	called_parties	call	False	True	N/A	One-to-many	The CALLS Dataset is linked to the CALLED_PARTIES Dataset, and the link order is 1:n (one call associated to many called_parties)

## DEVICES Dataset

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	name	N/A	True	N/A	N/A	String	Attribute that stores the name that identifies the device, often based upon the MAC address of the device.
Attribute	status	N/A	False	N/A	True	String	Attribute that stores the current registration status of the device. Possible values are Registered, Disconnected, Virtual, or Unregistered.
Attribute	vendor	N/A	False	N/A	True	String	Attribute that stores the vendor of the device. For example, Cisco or XMPP.

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	ip_address	N/A	False	N/A	False	String	Attribute that stores the current IP address of the device. In some cases Engage needs to keep track of the IP address of a device, such as with a Cisco phone.
Attribute	priority	N/A	False	N/A	False	String	Attribute that stores the priority level of the most recent message sent to a device. Required by the device management library, but not set by the XMPP adapter. It is used as a filter to prevent less important messages from being sent to a user currently handling a critical issue.
Attribute	token	N/A	False	N/A	False	String	Attribute that stores a special identifier needed by some devices, such as smart phones, in order to deliver a message.

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Link	history	device	False	False	N/A	One-to-many	The DEVICES Dataset is linked to the REGISTRATION_HISTORY Dataset, and the link order is 1:n (one device associated to many registration_histories)
Link	lines	devices	False	False	N/A	One-to-many	The DEVICES Dataset is linked to the LINES Dataset, and the link order is 1:n (one device associated to many lines)
Link	usr	devices	False	False	N/A	Many-to-one	The DEVICES Dataset is linked to the USERS Dataset, and the link order is n:1 (many devices associated to one user)

**LINES Dataset**

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	number	N/A	True	N/A	N/A	String	Attribute that stores an actual telephone or directory number
Link	device_history line		False	False	N/A	One-to-many	The LINES Dataset is linked to the REGISTRATION_HISTORY Dataset, and the link order is 1:n (one line associated to many registration_histories)

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Link	devices	lines	False	False	N/A	Many-to-one	The LINES Dataset is linked to the DEVICES Dataset, and the link order is n:1 (many lines associated to one device)

### PRESENCE\_UPDATE Dataset

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	timestamp	N/A	True	N/A	N/A	Date/Time	Attribute that stores the time this PresenceUpdate record was created.
Attribute	show	N/A	False	N/A	False	String	Attribute that stores the show of the presence to set.
Attribute	status	N/A	False	N/A	False	String	Attribute that stores the status of the presence to set.
Link	usr	presence_upd	True	False	N/A	Many-to-one	The PRESENCE_UPDATE Dataset is linked to the USERS Dataset, and the link order is n:1 (many presence_updates associated to one user)

### REGISTRATION\_HISTORY Dataset

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	device_status	N/A	False	N/A	False	String	Attribute that stores the current registration status of the device.
Attribute	ip_address	N/A	False	N/A	False	String	Attribute that stores the device's current IP address.

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	token	N/A	False	N/A	False	String	Attribute that stores some devices, such as smartphones, require a special identifier in order to receive a message. The token is used to store that special identifier.
Link	device	history	False	False	N/A	Many-to-one	The REGISTRATION_HISTORY Dataset is linked to the DEVICES Dataset, and the link order is n:1 (many registration_histories associated to one device)
Link	line	device_history	False	False	N/A	Many-to-one	The REGISTRATION_HISTORY Dataset is linked to the LINES Dataset, and the link order is n:1 (many registration_histories associated to one line)
Link	usr	device_history	False	False	N/A	Many-to-one	The REGISTRATION_HISTORY Dataset is linked to the USERS Dataset, and the link order is n:1 (many registration_histories associated to one user)

**USERS Dataset**

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	login	N/A	True	N/A	N/A	String	Attribute that stores the login name of the user.
Attribute	presence_show	N/A	False	N/A	False	String	Attribute that stores the current presence show value for the user.
Attribute	presence_status	N/A	False	N/A	False	String	Attribute that stores the current presence status message for the user.
Link	device_history	usr	False	False	N/A	One-to-many	The USERS Dataset is linked to the REGISTRATION_HISTORY Dataset, and the link order is 1:n (one user associated to many registration_histories)
Link	devices	usr	False	False	N/A	One-to-many	The USERS Dataset is linked to the DEVICES Dataset, and the link order is 1:n (one user associated to many devices)
Link	presence_updates	usr	False	True	N/A	One-to-many	The USERS Dataset is linked to the PRESENCE_UPDATE Dataset, and the link order is 1:n (one user associated to many presence_updates)

## Configuring a Vocera CUCM Adapter

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Description of the settings that enable direct communication between the Vocera CUCM Adapter and the Vocera Platform.

Select an empty field and begin typing, or select an existing value and type over it. To keep an existing value, do not edit that field.

1. Access the Vocera Platform Web Console and navigate to the adapters.  
See [Navigating the Vocera Platform Adapters](#) on page 38 for instructions.
2. Select **New Adapter** in the Action menu, or select an adapter you wish to configure and then select **Edit**, to display the configuration fields. The configuration fields are the same for new and existing adapters.
3. Navigate to the New Adapter option, or navigate to an existing adapter to edit. See [Creating a New Adapter](#) on page 41 and [Editing an Adapter](#) on page 40 for instruction as needed.  
The configuration fields are the same for new and existing adapters.

Component Name:

Reference Name:

Enabled:

Required Datasets

Called parties:

Calls:

Devices:

Lines:

Presence update:

Registration history:

Users:

JTAPI Library Setting

JTAPI Library Version:

WARNING! Changing this value affects all instances of the CUCM adapter. It will also initiate an immediate automatic restart of the CUCM adapter.

Common Settings

CUCM One Address:

CUCM Two Address:

CUCM Three Address:

CUCM Four Address:

CUCM Five Address:

Associate Users:

If you are using Cisco Extension Mobility or directly associating users with phone numbers in Cisco Communications Manager, select this option. If you are managing user to phone number association in EXTENSION, do not select this option.

Default User:

Login:

Password:

4. Complete the configuration fields as described in the table.

Configuration Field	Description
Component Name	Click the Component Name field to display a list of the systems and devices that the Vocera Platform currently supports. Select the name of the adapter to create.

Configuration Field	Description
Reference Name	Enter a short descriptive name in the Reference Name field to uniquely identify an adapter instance. It may demonstrate the adapter function or other information; for example, Production adapter may differentiate a live adapter from a development or "sandbox" adapter.
Enabled	Select the Enabled checkbox to allow the Vocera Platform to use the new adapter. The Vocera Platform ignores the adapter if this option is disabled.
Required Datasets	If more than one dataset exists that meets the adapter's requirements, select the appropriate datasets for the new adapter to function correctly. The system searches for the datasets that meet the adapters requirements. If the datasets already exist, the system will use them. If the datasets do not exist, the system will create them automatically. Select Create in the drop-down menu to create a new dataset to meet the organization's requirements.
JTAPI Library Settings	<p>Select the version of the Communications Manager and the JTAPI library to use for all Vocera CUCM Adapters in the organization's installation. The CUCM version selected in this field must match the version of CUCM to which the adapter will be connecting.</p> <p> <b>Warning:</b> Changing the JTAPI library version affects all instances of the Vocera CUCM Adapter, and initiates an immediate automatic re-start of the Vocera CUCM Adapter.</p> <p>If the JTAPI library version you require does not appear in the drop-down menu, refer to the <a href="#">Downloading a JTAPI Library</a> on page 17 documentation for download instructions.</p>

Common Settings Configuration Field	Description								
<p>CUCM Address One through Five</p>	<p>Enter the unique address for each of the customer's CUCM servers in the order they are meant to be used. There can be one to five CUCM servers for any single Vocera CUCM Adapter. Each of the CUCM Address boxes is optional, but if no server address is entered, this adapter is unable to connect to a Communications Manager.</p> <p>Type in all addresses exactly as provided by the client organization's CUCM system administrator, one per text box; leave unused Address fields blank. Each entry must be an IP Address, a Fully Qualified Domain Name (FQDN), or an unqualified DNS hostname (PQDN) belonging to a CUCM server.</p> <p>Use the following standards to complete the server address fields:</p> <table border="1" data-bbox="837 535 1520 1365"> <thead> <tr> <th data-bbox="837 535 1161 594">Server Address Type</th> <th data-bbox="1161 535 1520 594">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="837 594 1161 951">IP addresses</td> <td data-bbox="1161 594 1520 951">Unique numerical labels assigned to each device on a computer network, in standard IP Address format (xxx.xxx.xxx.xxx, where each xxx is a number from 0-255)</td> </tr> <tr> <td data-bbox="837 951 1161 1157">Fully Qualified Domain Names (FQDN)</td> <td data-bbox="1161 951 1520 1157">The complete hostname for a specific computer on a network; e.g., cucmsvr30.mydomain.com</td> </tr> <tr> <td data-bbox="837 1157 1161 1365">Partially Qualified Domain Name (PQDN)</td> <td data-bbox="1161 1157 1520 1365">Usually a single word or phrase indicating only the computer's "DNS Name"; e.g., cucmsvr30</td> </tr> </tbody> </table> <p> <b>Note:</b> DNS hostnames must be registered on the Appliance configured in the Network Settings and may not contain spaces or punctuation other than a hyphen. Appliances using hostnames that contain underscores or spaces may not be compatible with devices that try to connect to them. Connecting to a CUCM server that contains those characters is not recommended or supported.</p>	Server Address Type	Description	IP addresses	Unique numerical labels assigned to each device on a computer network, in standard IP Address format (xxx.xxx.xxx.xxx, where each xxx is a number from 0-255)	Fully Qualified Domain Names (FQDN)	The complete hostname for a specific computer on a network; e.g., cucmsvr30.mydomain.com	Partially Qualified Domain Name (PQDN)	Usually a single word or phrase indicating only the computer's "DNS Name"; e.g., cucmsvr30
Server Address Type	Description								
IP addresses	Unique numerical labels assigned to each device on a computer network, in standard IP Address format (xxx.xxx.xxx.xxx, where each xxx is a number from 0-255)								
Fully Qualified Domain Names (FQDN)	The complete hostname for a specific computer on a network; e.g., cucmsvr30.mydomain.com								
Partially Qualified Domain Name (PQDN)	Usually a single word or phrase indicating only the computer's "DNS Name"; e.g., cucmsvr30								
<p>Associate Users</p>	<p>Select this checkbox if the Cisco phones are configured for user login. Do not select this checkbox if Vocera Platform manages the phone-to-user association.</p>								

Common Settings Configuration Field	Description
Default User	<p>Select a user's login in the <b>Default User</b> drop-down list. The user names displayed in the list are non-system users who are Active and are not authenticated by LDAP. If you select a Default User when PIN Authentication bypass for Cisco phones is enabled, this will allow any individual to access Vocera Platform without entering a PIN on the device.</p> <p>Select the Default User setting to apply the <b>Security Policies</b> associated with the customer's roles. All of the customer's Cisco phones that the adapter is aware of will use these default user settings.</p> <ul style="list-style-type: none"> <li>• If the default user is configured for <b>PIN Authentication</b>, all users authenticate with that user's PIN when they access the Vocera Platform from Cisco phones.</li> <li>• If the default user is configured for <b>PIN Authentication</b> and <b>PIN Authentication Bypass for Cisco Phones</b>, customers are not required to authenticate when they access the Vocera Platform from Cisco phones. See the <a href="#">Vocera Platform Administration Guide</a> for information about these security policies.</li> </ul> <p> <b>Warning:</b> A default user <b>MUST</b> be set. If a default user is not defined, the user is forced to re-authenticate after every session timeout. This may cause a user to miss notifications.</p>
Login	<p>Enter the <b>Login</b> for the user account. This Login must match exactly (including capitalization) the User ID and Password specified in the Cisco Unified Communications Manager described in <a href="#">Creating an Application User</a> on page 25.</p> <p>These fields allow the Vocera Platform to authenticate with the CUCM server(s) entered in the CUCM Address fields.</p>
Password	<p>Enter the <b>Password</b> for the user account. This Password must match exactly (including capitalization) the User ID and Password specified in the Cisco Unified Communications Manager described in <a href="#">Creating an Application User</a> on page 25.</p> <p>These fields allow the Vocera Platform to authenticate with the CUCM server(s) entered in the CUCM Address fields.</p>

5. Select one of the available options to exit the adapter configuration page. See [Saving an Adapter](#) on page 42 for details.

## Downloading a JTAPI Library

Download a Linux JTAPI library plugin and submit it to Vocera Platform to add the library version to the system.

The Vocera CUCM Adapter uses Java Telephony API (JTAPI) to communicate with Cisco's Unified Communication Manager. Depending on the version of Cisco software you are using, you may not find the correct JTAPI library listed in the JTAPI Library Setting section of the Vocera CUCM Adapter configuration.

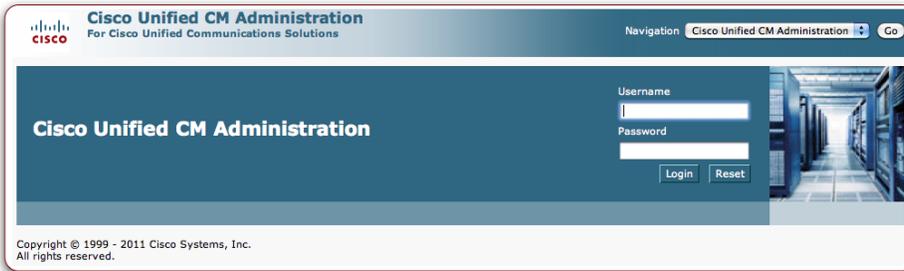
If the JTAPI library version you require is not available, create a Support issue or ticket to request adding the library to the Vocera Platform. Navigate to the Plugins page in the Cisco Unified Communications Manager (CUCM) server, and download the missing Linux JTAPI library plugin. Add the CUCM server version number to the Support issue, attach the library plugin file, and submit the issue to Vocera Platform.

Use these steps as a guidance to locate, download, and pass a Linux plugin to Vocera Support. There may be some variation in the details, depending on the CUCM server version, to successfully perform the download described in this document.

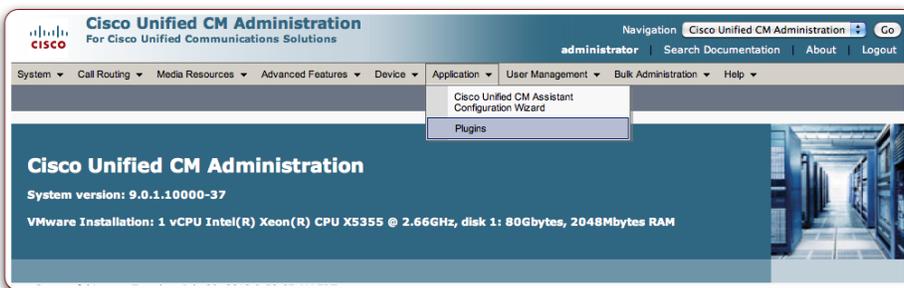
## Download a JTAPI Library

Access the CUCM Administration server to download a JTAPI library from the website, and perform the following steps.

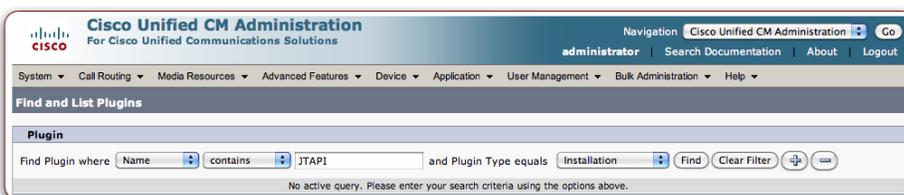
1. Enter the login credentials and click **Login**. The login credentials are specific to the installation site.



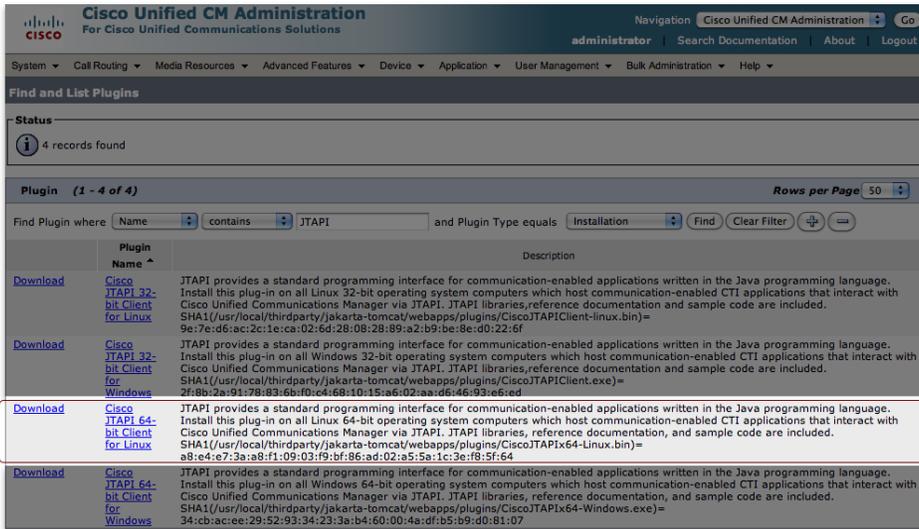
2. Select the **Application** tab, and then select **Plugins** from the drop-down menu as displayed below. Note the CUCM system version to report to Support in step 6; the example below displays version 9.0.1.10000-37.



3. Define the criteria to search for the JTAPI library plugin, or leave the fields blank to return all plugins, in the Find and List Plugins page, and then select **Find**. Select **Clear Filter** to search again.



4. Select **Download** next to the Linux plugin name to add to the Vocera Platform. In the example below, **Cisco JTAPI 64-bit Client for Linux** is selected. Select the plugin for the version of Cisco software that displays in the CUCM server login page, as shown in step 2 above.



5. Locate the plugin file in the subdirectory when the download is complete.
6. Attach the JTAPI Library plugin file to the support issue or ticket, note the CUCM server software version number in the issue, and submit the issue to Vocera Support.

## Working with Vocera CUCM Adapter Rules

Rules can be configured to trigger the Vocera CUCM Adapter to send messages to Cisco phones registered with the Cisco Unified Communications Manager.

See the [Vocera Platform Dataset Guide](#) for information about working with rules. See [Configuring a Vocera CUCM Adapter](#) on page 13 for information about the adapter settings.

In the Adapter Settings, configure the Rule Settings fields to manage message delivery.

**Adapter Settings**

The information provided is either invalid or incomplete.

- Required: Phone
- Required: Workflow Page

**Rule Settings**

Alert Heading:

Phone:

Static Message:

Static Message Content:

Workflow Page:

Parameters:

Execute Priority:

Priority Level:

Vibrate Enabled:

Audible Alert:

Alert Sound:

Setting	Description
Alert Heading	The heading shown on the top of the login screen for the alert. Can be hard-coded text or an attribute expression in the form of an attribute <code>#{...}</code> .

Setting	Description
Phone	The phone number(s) to which the alert message will be delivered. Can be hard-coded text or an attribute expression in the form of an attribute #{...}. If hard-coded, the value can be a single phone number, or multiple phone numbers that are comma-separated. <b>Required when "Static Message" is not enabled.</b>
Static Message	If enabled, the adapter will send plain text to a Cisco phone. When enabled, the "Parameters" and "Workflow Page" will be disabled and "Static Message Content" will be marked as required. If not enabled, the "Phone" and "WorkflowPage" fields are required and the "Static Message Content" field is disabled.
Static Message Content	The content to be sent as static text. <b>Required if "Static Message" is enabled.</b>
Workflow Page	The workflow page that will be displayed on the phone when the message is delivered. The page will display all currently defined workflow pages grouped by the workflow that contains them. <b>Required when "Static Message" is not enabled.</b>
Parameters	Additional query string parameters that will be passed to the workflow page when it is opened. Parameters are entered in the form "key=value", one per line.
Execute Priority	Defined by Cisco, specifies when the workflow page, audio alert, and vibration occur. The choices are "Immediate", "When Idle", and "Only if Idle". "Immediate" will execute the URL regardless of the phone state, even if other calls or actions are in progress. "When Idle" will execute when the phone becomes idle. "Only If Idle" will execute the URL if the phone is idle, and will never execute the URL if the phone is not idle.
Priority Level	The severity level of the message. Tracked by the device object so that rules can filter out lower severity level messages. Options are "High", "Medium", and "Low".
Vibrate Enabled	If enabled, tells the phone to vibrate when the message is received (based on Execute Priority).
Audible Alert	If enabled, tells the phone to play the sound defined in "Alert Sound" when the message is received (based on Execute Priority).
Alert Sound	The sound file for the phone to play if "Audible Alert" is enabled. Leave this field empty to play the default alert sound.

# Integrating CUCM with the Vocera Platform

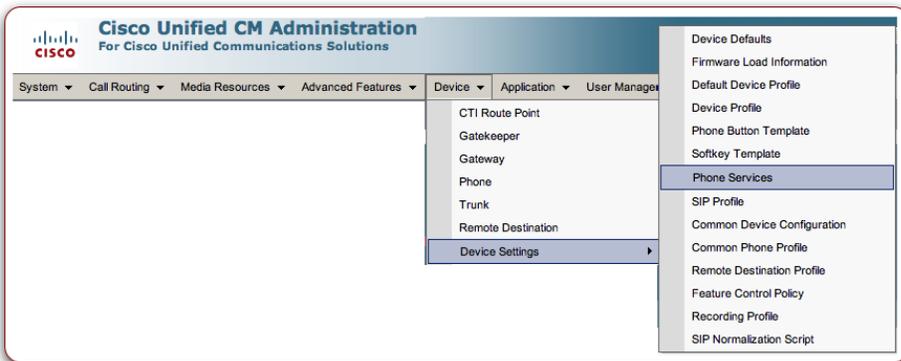
Complete these steps in the order listed to configure Cisco Unified Communications Manager for a Vocera Platform integration.

These steps are performed in the Cisco environment. Contact a Cisco representative for additional information.

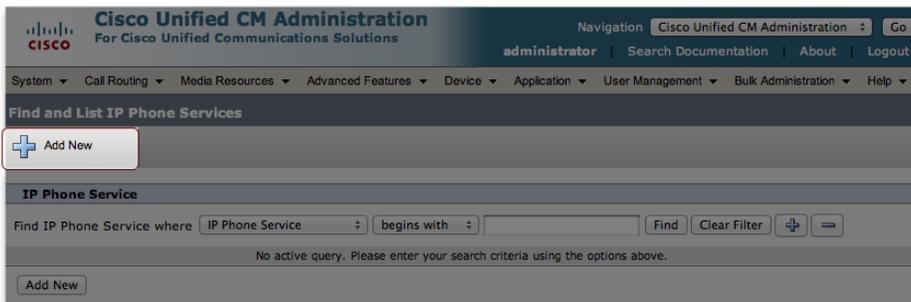
## Adding Vocera Platform to the List of IP Phone Services

Complete the fields in the Service Information window precisely as described.

1. Select **Device** in the navigation menu, then select **Device Settings > Phone Services** from the drop-down menus, as shown below.



2. Select **Add New** on the Find and List IP Phone Services page.



3. Enter Vocera Platform in the Service Name field.

**Service Information**

Service Name\* EXTENSION

ASCII Service Name\* EXTENSION

Service Description

Service URL\* http://1.2.3.4/ei/w/

Service Category\* XML Service

Service Type\* Standard IP Phone Service

Service Vendor

Service Version

Enable

Enterprise Subscription

4. Enter Vocera Platform in the ASCII Service Name field.

**Service Information**

Service Name\* EXTENSION

ASCII Service Name\* EXTENSION

Service Description

Service URL\* http://1.2.3.4/ei/w/

Service Category\* XML Service

Service Type\* Standard IP Phone Service

Service Vendor

Service Version

Enable

Enterprise Subscription

5. Specify a workflow page to be the phone's default workflow, or specify the root URL for workflows (http://{IP}/ei/w/) in order to use the default workflow that is set in the General Settings of the Admin Console. Use the Service URL field to specify a workflow page to be the phone's default, rather than use the organization's default workflow.

- The URL must be in the format http://{IP}/ei/w/ where {IP} is the IP address for Vocera Platform. This URL will direct the end user to the default workflow that is set in the Admin Console to be the organization's default workflow when Vocera Platform is accessed from the phone's Services.
- To direct the end user to a workflow page other than the default, include a workflow name at the end of the URL. The URL must be in the format http://{IP}/ei/w/{WorkflowName} where {WorkflowName} is the name of the desired workflow.

The example below displays the Service URL for a default workflow.

**Service Information**

Service Name\* EXTENSION

ASCII Service Name\* EXTENSION

Service Description

Service URL\* http://1.2.3.4/ei/w/

Service Category\* XML Service

Service Type\* Standard IP Phone Service

Service Vendor

Service Version

Enable

Enterprise Subscription

6. Leave the default **XML Service** setting in the Service Category field.

**Service Information**

Service Name\* EXTENSION

ASCII Service Name\* EXTENSION

Service Description

Service URL\* http://1.2.3.4/ei/w/

Service Category\* XML Service

Service Type\* Standard IP Phone Service

Service Vendor

Service Version

Enable

Enterprise Subscription

7. Leave the default **Standard IP Phone Service** setting in the Service Type field.

**Service Information**

Service Name\* EXTENSION

ASCII Service Name\* EXTENSION

Service Description

Service URL\* http://1.2.3.4/ei/w/

Service Category\* XML Service

Service Type\* Standard IP Phone Service

Service Vendor

Service Version

Enable

Enterprise Subscription

8. Select the **Enable** checkbox.

**Service Information**

Service Name\* EXTENSION

ASCII Service Name\* EXTENSION

Service Description

Service URL\* http://1.2.3.4/ei/w/

Service Category\* XML Service

Service Type\* Standard IP Phone Service

Service Vendor

Service Version

Enable

Enterprise Subscription

9. Select the **Enterprise Subscription** checkbox to enable Vocera Platform on all Cisco phones. If Enterprise Subscription is not selected, the Vocera Platform needs to be added as a service on each individual phone.

**Service Information**

Service Name\* EXTENSION

ASCII Service Name\* EXTENSION

Service Description

Service URL\* http://1.2.3.4/ei/w/

Service Category\* XML Service

Service Type\* Standard IP Phone Service

Service Vendor

Service Version

Enable

Enterprise Subscription

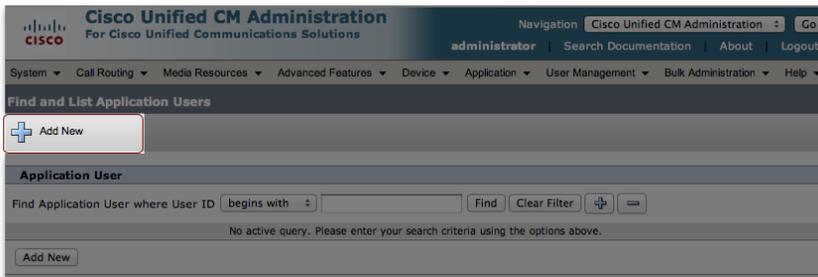
## Creating an Application User

Complete the fields on the Application User Information window precisely as described.

1. Select **User Management** in the navigation menu, then select **Application User** from the drop-down menu.

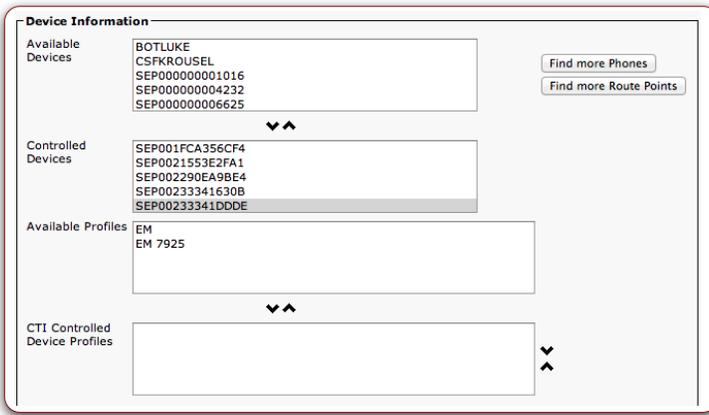


2. Select **Add New** on the Find and List Application Users page.



3. Enter the **User ID** and **Password** in the Application User Information fields. These entries must match (including capitalization) the Vocera Platform Login and Password created in the **User Account Login** fields described in Common Settings.

4. Move phones that should be allowed to work with the Vocera Platform from the **Available Devices** box to the **Controlled Devices** box in the Device Information panel. Highlight the desired devices and use the downward pointing arrow to move them to the Controlled Devices box.



5. Select the **Add to User Group** button in the Permissions Information panel shown below to search for groups. Select the following groups:



**Warning:** All device lines **MUST** be enabled in CTI. Failure to do so will result in improper device registration which may result in Alerts not being delivered to devices.

- Standard CTI Allow Control of Phones supporting Connected Xfer and conf
- Standard CTI Enabled
- Standard CCM Read Only



## Adding Phones to Extension IP Phone Service

Modify the phone template and then update the phones to add them to the Phone Service.

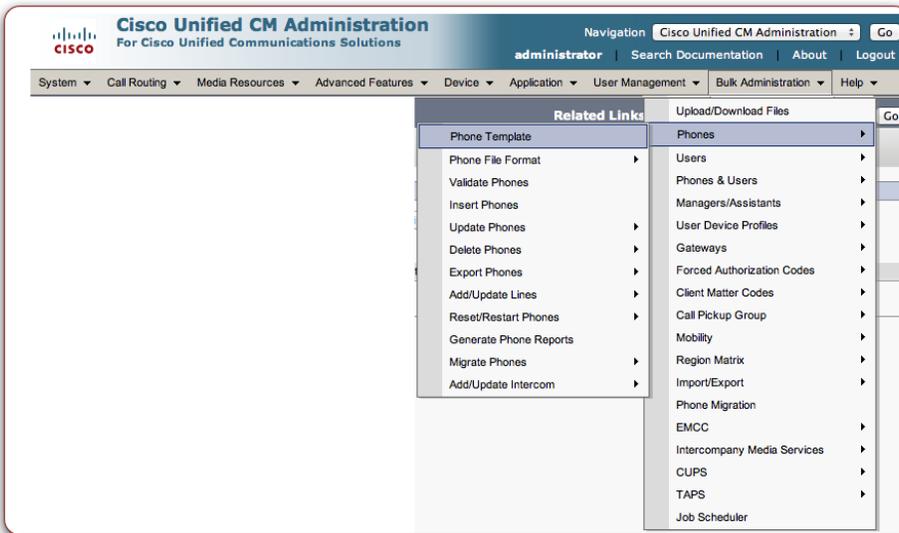
Add each phone enabled in [Creating an Application User](#) on page 25 to the Extension IP Phone Service created in [Adding Vocera Platform to the List of IP Phone Services](#) on page 22.

To do this, first modify the phone template, and then update the phones.

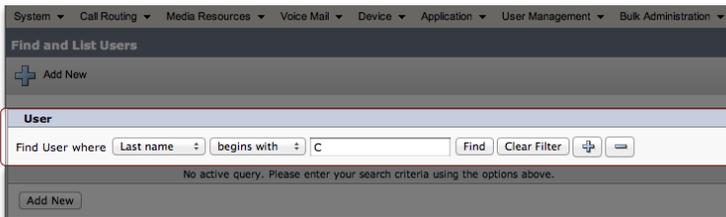
### Modifying the Phone Template

Modify the phone template in order to add the enabled phones.

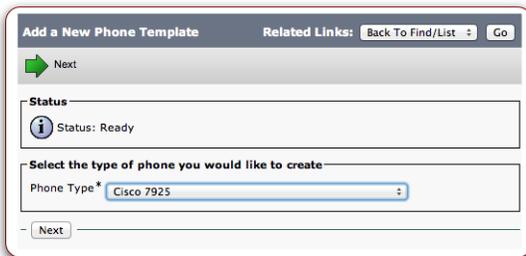
1. Select **Bulk Administration** in the navigation menu, then select **Phones > Phone Template** from the drop-down menu.



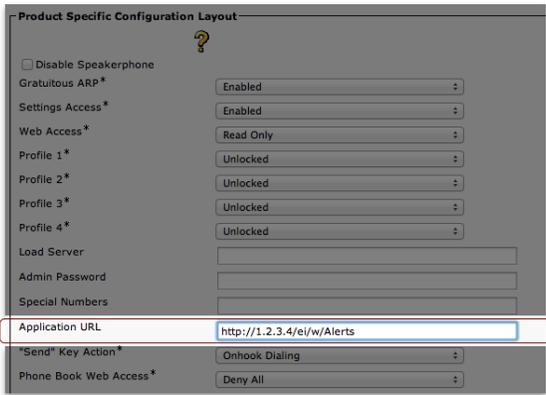
2. Use the query fields in the **Phone** panel to search for a template, or select **Add New** to create the desired template.



3. Select the **Phone Type** from the drop-down menu for which you will create the new phone template. A Cisco 7925 phone is selected in this example.



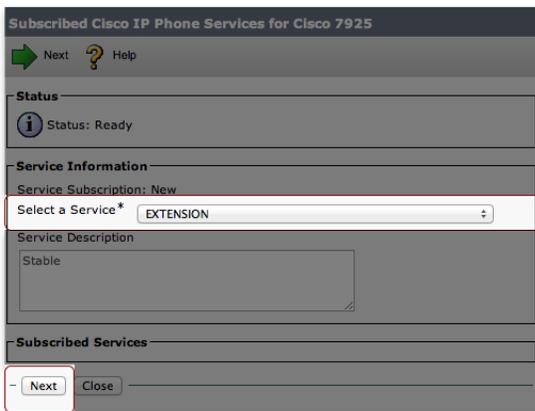
4. Enter an **Application URL** in the Product Specific Configuration Layout panel to configure the phone's Push To Talk button for one-click access to Extension.
  - To access a specific workflow, the Application URL must be in the format `http://{IP}/ei/w/{WorkflowName}`, where {IP} is the IP Address for Extension and {WorkflowName} is the name of the desired workflow.
  - To access the default workflow from the push to talk button, the Application URL must be in the format `http://{IP}/ei/w`.



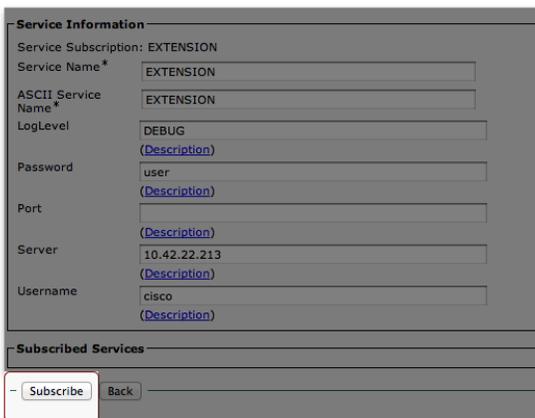
5. Select **Subscribe/Unsubscribe Services** from the drop-down menu in the Related Links field at the top of the page, then select **Go**.



6. Select **Extension** from the drop-down menu in the Select a Service field, then select **Next**.



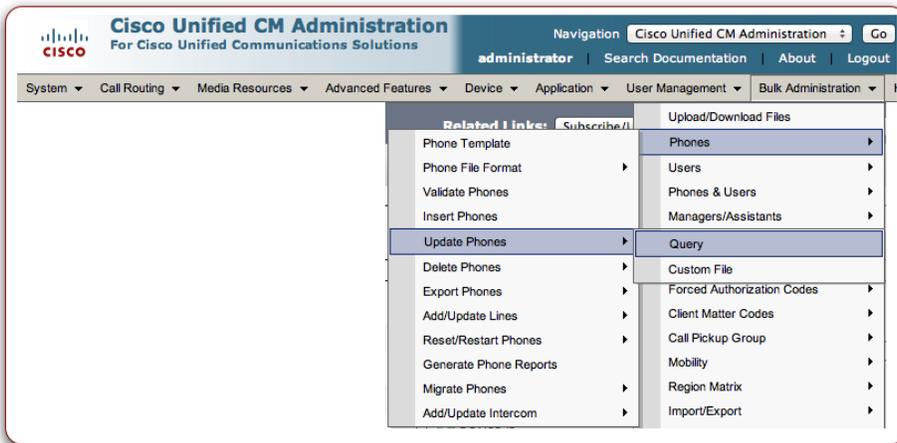
7. Review the **Service Information** fields, then select **Subscribe** in Subscribed Services.



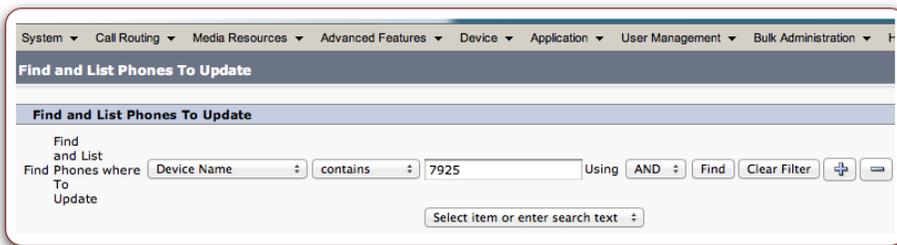
### Updating the Phones to Add to Extension IP Phone Service

Update the phones to add them to the Phone Service.

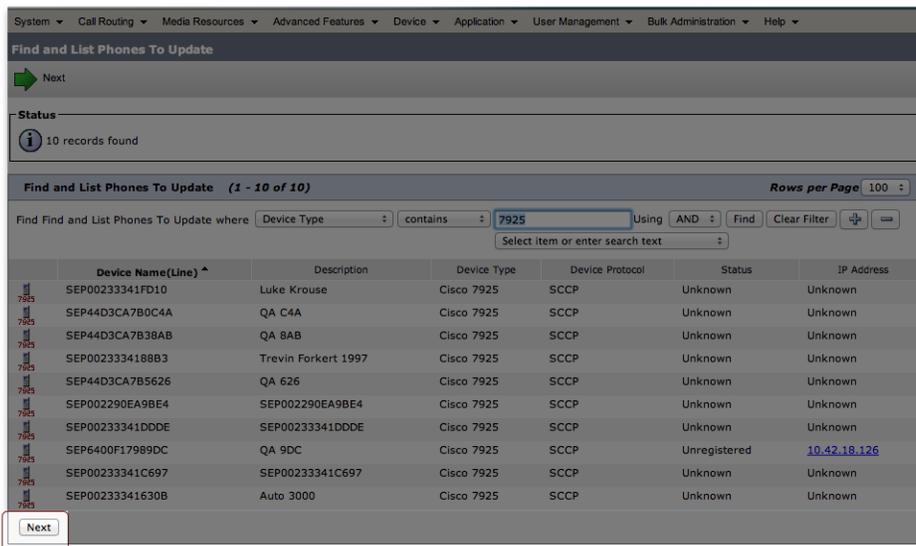
1. Select **Bulk Administration** in the navigation menu, then select **Phones > Update Phones > Query** from the drop-down menus.



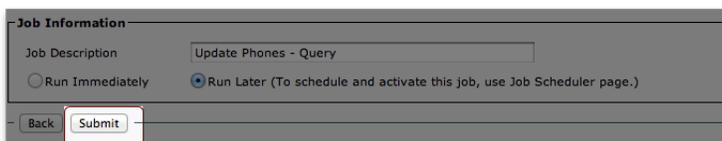
2. Select **Find** to perform a query specified to find the phones that you wish to update.



3. Select **Next** at the bottom of the results page.



4. Select **Submit** at the bottom of the Update Phones page.

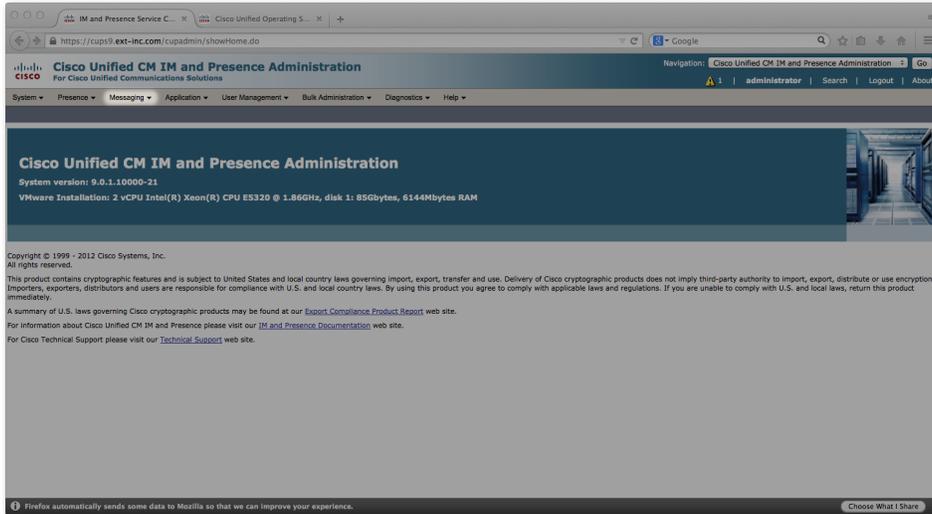


## Enabling Instant Messaging on Cisco Jabber

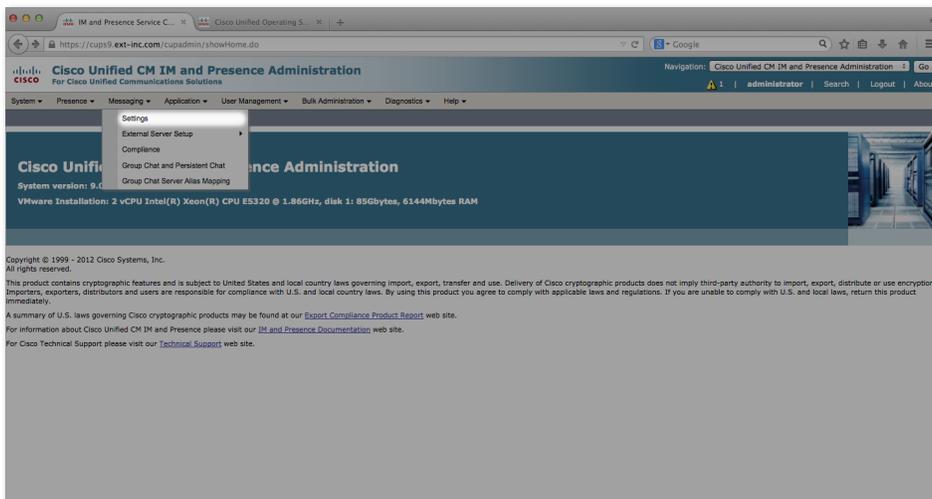
Cisco Jabber is a unified communications application that provides presence and instant messaging capabilities. Jabber enables the Vocera Vina mobile application to utilize these capabilities within the appliance.

To enable Cisco Jabber instant messaging, login to the Cisco Unified CM IM and Presence Console.

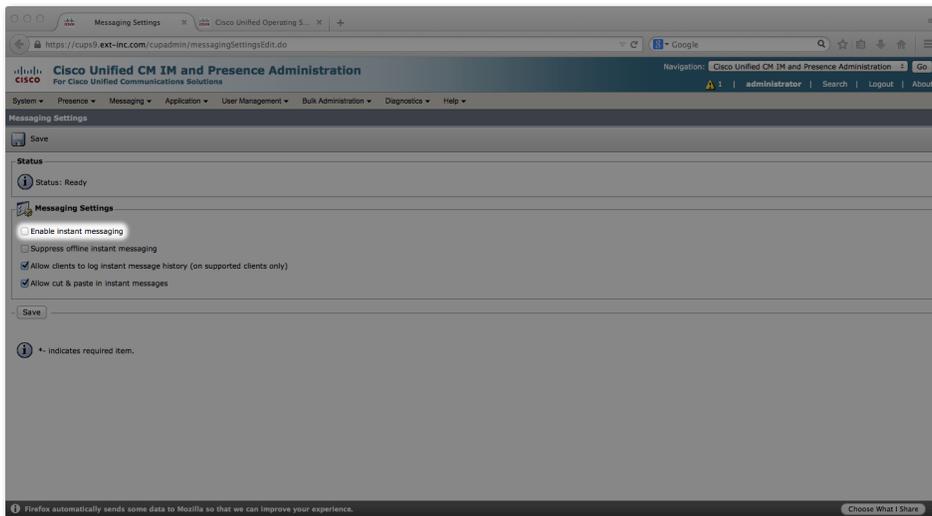
1. Select the **Messaging** tab to expand the drop down menu.



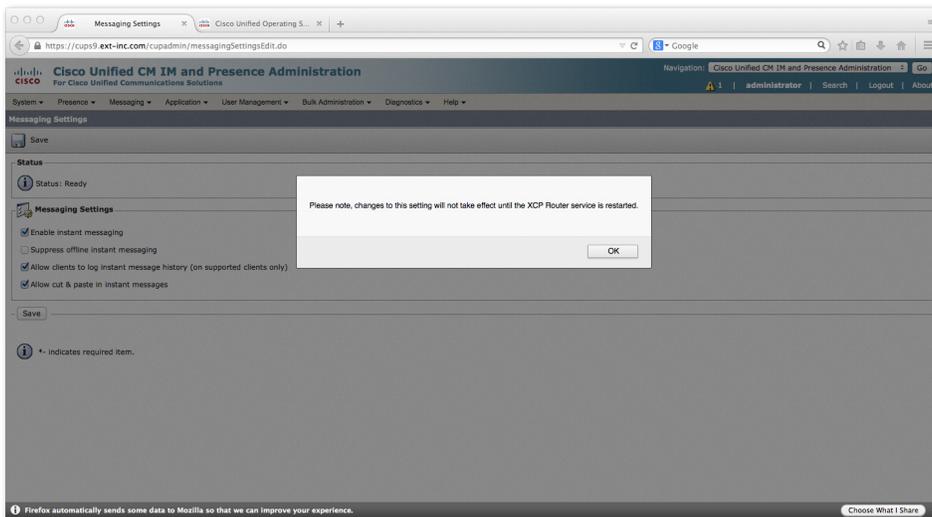
2. Select **Settings** from the drop down menu.



3. Check the **Enable instant messaging** checkbox.



4. Checking (or unchecking) this checkbox will prompt a menu notifying the user the changes will not take effect until the XCP Router service is restarted. Select OK and then select **Save**. After a restart, instant messaging will be enabled for CUCM.



## Configuring Cisco Extension Mobility (Optional)

Cisco Extension Mobility allows users to configure any Cisco phone as their own, on a temporary basis. The Cisco Extension Mobility feature dynamically configures a phone according to the current user profile.

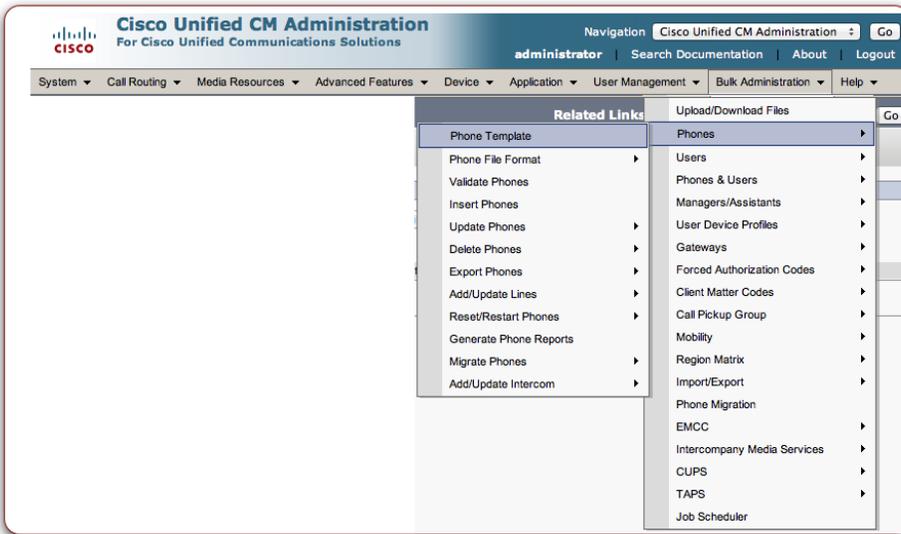
Once a user logs in, the phone adopts the individual user's default device profile information, including line numbers, speed dials, services links, and other user-specific properties of a phone. When a user authenticates on the phone, a login service performs the administrative updates.

For Cisco Extension Mobility to work with the Vocera Platform, each Vocera Platform user account must have the security policy item **PIN Authentication Bypass for Cisco Phones** enabled. See **Security** in the [Vocera Platform Administration Guide](#).

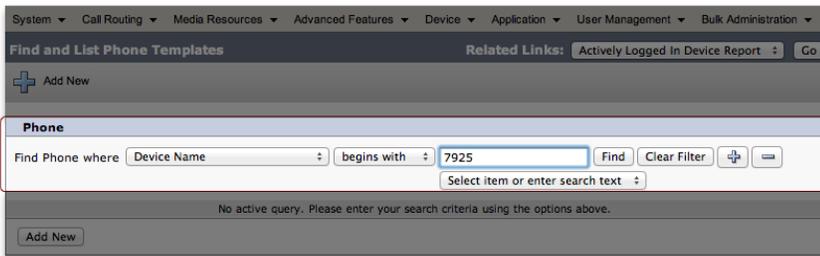
In addition, a **Default User** (see [Configuring a Vocera CUCM Adapter](#) on page 13) must not be assigned; as those default settings will override the individual profile.

## Enabling Extension Mobility for the Device

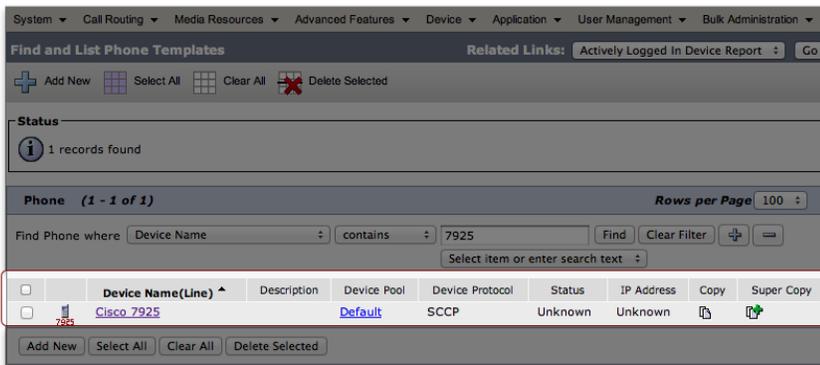
1. Select **Bulk Administration** in the navigation menu, then select **Phones > Phone Template** from the drop-down menus.



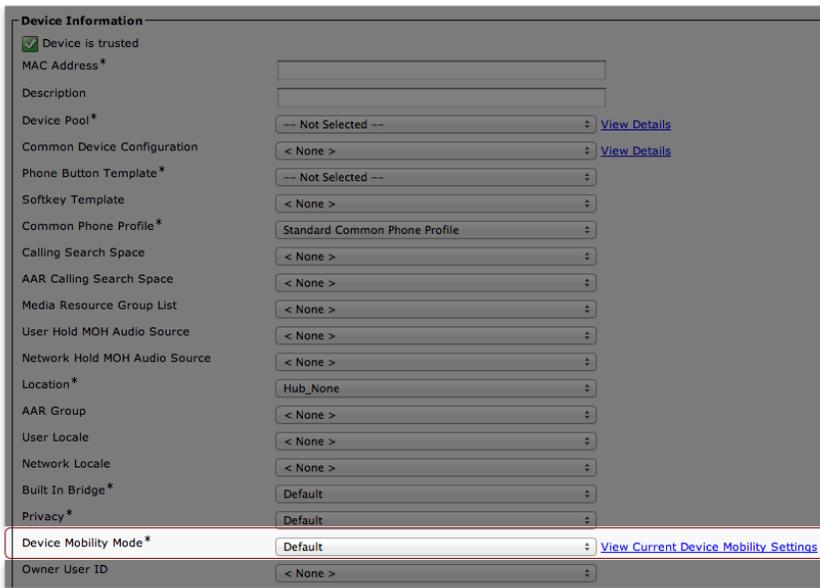
2. Use the query fields in the **Phone** panel to search for a template.



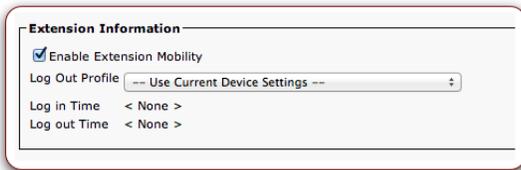
3. Select the **Phone** template.



4. Ensure **Device Mobility Mode** is set to **Default** or **On** for each phone configuration's Device Information.

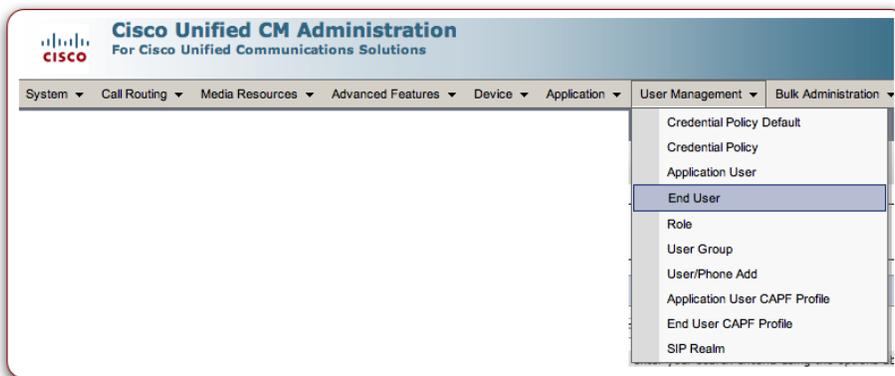


5. Select **Enable Extension Mobility** in Extension Information.



## Enabling Extension Mobility for the End User

1. Select **User Management** in the navigation menu, then select **End User** from the drop- down menu.



2. Use the query fields in the **User** panel to search for an end user.

System ▾ Call Routing ▾ Media Resources ▾ Voice Mail ▾ Device ▾ Application ▾ User Management ▾ Bulk Administration ▾

**Find and List Users**

+ Add New

**User**

Find User where Last name ▾ begins with ▾ C Find Clear Filter + -

No active query. Please enter your search criteria using the options above.

+ Add New

3. Select the **User ID** link to access the user information.

System ▾ Call Routing ▾ Media Resources ▾ Voice Mail ▾ Device ▾ Application ▾ User Management ▾ Bulk Administration ▾

**Find and List Users**

+ Add New Select All Clear All Delete Selected

**Status**

1 records found

**User (1 - 1 of 1)** Rows per Page 50 ▾

Find User where Last name ▾ begins with ▾ C Find Clear Filter + -

<input type="checkbox"/>	User ID ^	First Name	Last Name	Department
<input type="checkbox"/>	<a href="#">ENDUSER</a>		CLERK	

+ Add New Select All Clear All Delete Selected

4. Select **Enable Mobility** in Mobility Information.

**Mobility Information**

Enable Mobility

Primary User Device < None > ▾

Enable Mobile Voice Access

Maximum Wait Time for Desk Pickup\* 10000

Remote Destination Limit\* 4

Remote Destination Profiles

[View Details](#)

## Create Matching User Accounts in Vocera Platform

Each Cisco Extension Mobility end user must have a matching user account in the Vocera Platform. The login credentials in both the Vocera Platform and Cisco Extension Mobility end user accounts must be exactly the same, including case sensitivity.

You can use the bulk import of users feature (described in **Security** in the [Vocera Platform Administration Guide](#)) to create matching user accounts in the Vocera Platform for multiple Cisco accounts. If you do not wish to import a list of users or have only a few users to add to the system, you will create each new user account separately.

Cisco Extension Mobility will not function if a **Default User** is set in Vocera Platform. When a default user is selected, those user settings override the individual user's settings, thereby replacing the Extension Mobility configuration.

For the Vocera Platform to function with Cisco Extension Mobility, each Vocera Platform user account must have the security policy item **PIN Authentication Bypass for Cisco Phones** enabled. This is accomplished by associating the security policy item to a role, and adding the user to a group that has that role assigned. For more information, see **Security** in the [Vocera Platform Administration Guide](#).

## Understanding Adapter Installation

---

Adapters are installed on the Vocera Platform in a solution package, or individually as needed by the customer.

The Vocera Platform uses adapters to integrate with external systems and devices. Each adapter is configured by the user to include information that will allow the Vocera Platform to communicate and interact with a specific type of resource and, depending on the adapter, devices that resource may control. Adapters can allow the Vocera Platform to monitor and collect data, as well as send data out, when triggered manually or automatically.

When implementing Vocera Platform at a customer site, use this document to install an adapter that is not supplied in the Gold Image. Otherwise, you will install a needed adapter when instructed in the solution package installation process described in the [Vocera Platform Installation Guide](#).

---

### Recreating a Repository

In the event that the repository reference file has been compromised, you can re-create the platform repository.

This information should be specified on the related adapter's Release Information page in the wiki. See **Releases** and navigate to the needed adapter.

1. Verify that the adapter resides in a repository which is in `/etc/yum.repos.d/`.
2. If the **repolist** or **yum** commands fail, verify that the file exists and try again. For example, use the following code to verify the repository exists on the Vocera Platform appliance:

```
[tpx-admin@engage log]$ cat /etc/yum.repos.d/vocera.repo
```

3. Verify the output appears as shown.

```
#-----  
# NOTICE: Only use the General Availability (platform-6.X-ga) repository for customer  
# deployments.  
# Use of Controlled Release (platform-6.X-cr) or Software Quality Assurance  
# (platform-6.X-sqa) in  
# accordance to process QOP-75-01 Production Work Order and History Record, contact  
# your  
# manager for questions.  
#-----  
[Platform-6.0]  
name=Platform-6.0  
baseurl=https://box.voceracommunications.com/Platform-6.0-GA  
enabled=1  
gpgcheck=0
```

## Installing an Adapter

Install or uninstall a Vocera Platform adapter at a customer site on a Vocera system for a customer.

Execute the following steps using the system's command prompt.

1. Verify that the adapter resides in a repository which is in `/etc/yum.repos.d/`.
2. Run the following commands:

```
sudo yum clean all
sudo yum check-updates
```

3. Verify that the rpm package to be installed is available using the following command:

```
sudo yum list available | grep extension
```

4. Install the adapter by specifying its rpm package name in place of `<package-name>` in the code below. (This information should be specified on the related Release Information page in the wiki; see **Release Notes**.)

```
sudo yum install <package-name>
```

5. Uninstall an adapter by specifying its rpm package name in place of `<package-name>` in the code below. (This information should be specified on the related Release Notes page; see **Release Notes**.)

```
sudo yum remove <package name>
```

## Practicing an Adapter Installation

Replicate these steps using the needed adapter package, in order to install adapters other than the example given here.

1. Verify the repo file contains the repos up to and including the release of interest.

```
[tpx-admin@engage log]$ cat /etc/yum.repos.d/vocera.repo
#-----
# NOTICE: Only use the General Availability (platform-6.X-ga) repository for customer
# deployments.
# Use of Controlled Release (platform-6.X-cr) or Software Quality Assurance
# (platform-6.X-sqa) in
# accordance to process QOP-75-01 Production Work Order and History Record, contact
# your
# manager for questions.
#-----
[Platform-6.0]
name=Platform-6.0
baseurl=https://box.voceracommunications.com/Platform-6.0-GA
enabled=1
gpgcheck=0
```

2. Execute the following commands:

```
[tpx-admin@engage log] $ sudo yum check-updates
Loaded plugins: langpacks, product-id, subscription-manager
This system is not registered to Red Hat Subscription Management. You can use
subscription-manager to register.
Quartz
(1/2): Quartz/group_gz | 3.6 kB 00:00:00
(2/2): Quartz/primary_db | 483 B 00:00:00
| 29 kB 00:00:00
```

3. Verify the package is available, using the following command:

```
[tpx-admin@engage log] $ sudo yum list available | grep extension
extension-навicare-interface.x86_64          1.3.6-0          Platform 5.0
```

4. Install the needed adapter; in this example, install the Navicare adapter:

```
[tpx-admin@engage log] $ sudo yum install extension-навicare-interface
Loaded plugins: langpacks, product-id, subscription-manager
This system is not registered to Red Hat Subscription Management. You can use
subscription-manager to register.
Resolving Dependencies
--> Running transaction check
---> Package extension-навicare-interface.x86_64 0:1.3.6-0 will be installed
--> Finished Dependency Resolution
```

Dependencies Resolved

```
=====
Package                               Arch                               Size
Version                               Repository                         Size
=====
Installing:
extension-навicare-interface          x86_64                             59 k
1.3.3-0                                Quartz
```

Transaction Summary

Install 1 Package

Total download size: 59 k

Installed size: 62 k

Is this ok [y/d/N]: y

Downloading packages:

```
extension-навicare-interface-1.3.6-0.x86_64.rpm
| 59 kB 00:00:00
```

Running transaction check

Running transaction test

Transaction test succeeded

Running transaction

```
Installing : extension-навicare-interface-1.3.6-0.x86_64          1/1
Verifying  : extension-навicare-interface-1.3.6-0.x86_64          1/1
```

Installed:

```
extension-навicare-interface.x86_64 0:1.3.6-0
```

Complete!

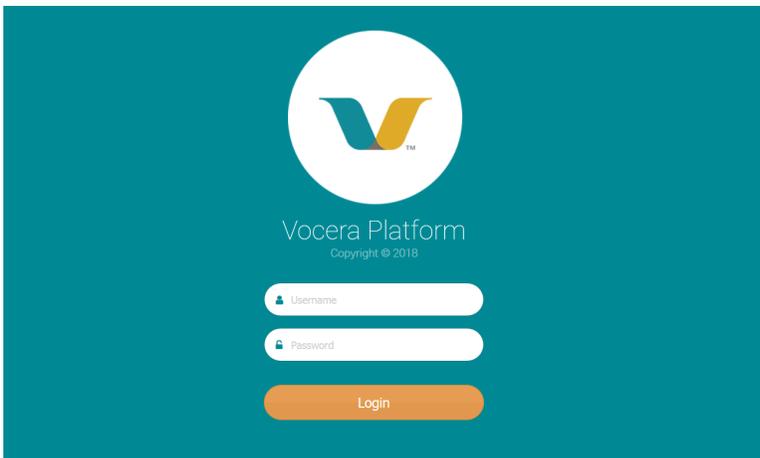
5. This completes the steps to install an adapter.

## Navigating the Vocera Platform Adapters

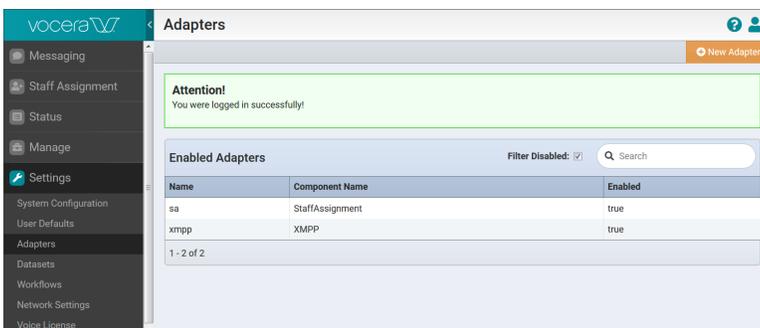
Access the Adapters tab and use the filter or search tools to display a specific adapter.

This page is used by all the adapter guides, and therefore, the adapter used as an example here may not be the adapter that you are working with currently.

1. Access the Vocera Platform Web Console and sign in with your system credentials.



2. Select **Settings > Adapters** in the navigation menu.

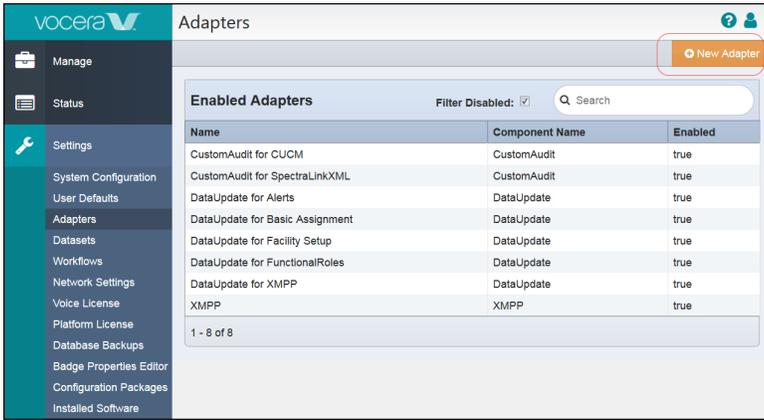


The **Adapters** page displays.

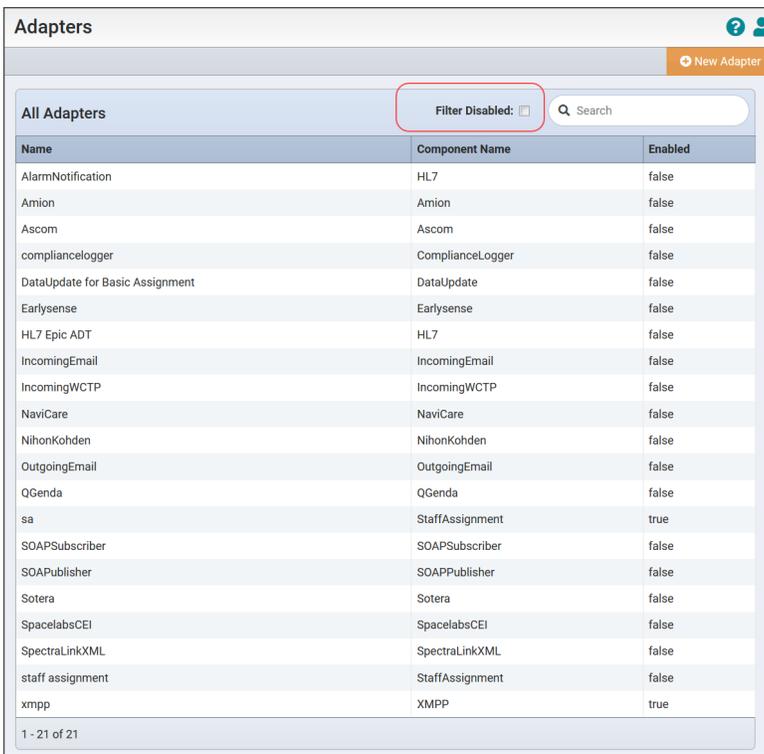
3. Select an adapter to work with from the list displayed in the grid, or select the **New Adapter** Action option to create a new adapter.

On the **Adapters** page you can identify adapters by their name or component name. The Enabled column (displaying a true or false status) indicates whether the adapter is active on the system, or disabled.

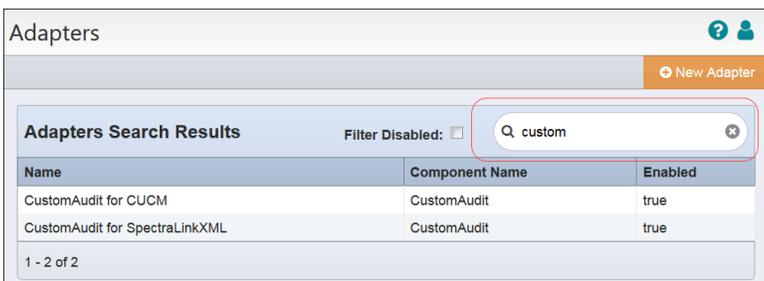
The bottom row of the grid reports the number of adapters displayed, of the available adapters. The Filter Disabled box is checked by default, and displays only the enabled adapters that are configured on the Vocera Platform.



- Uncheck the **Filter Disabled** box to display all the adapters that have been installed, including those that are not currently enabled. The column title now displays **All Adapters**. The Filter Disabled box is checked by default.



- Enter a term in the **Search** field to locate a needed adapter on the system. The search field is identified by a text field with a magnifying glass icon. The search is performed on the Name and Component Name columns. When results are returned, the column header displays **Adapters Search Results** and an **x** icon allows you to clear the search field.

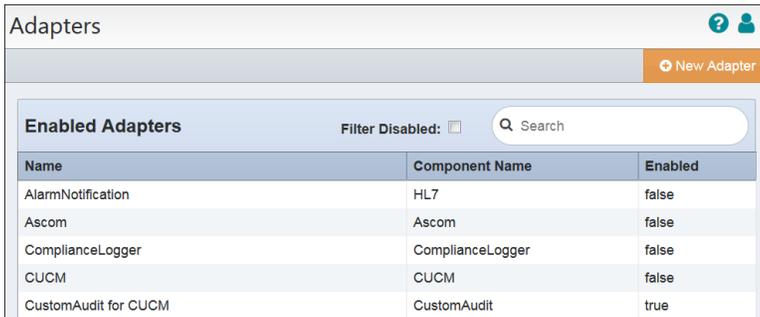


## Editing an Adapter

Edit an adapter that has been installed on the Vocera Platform.

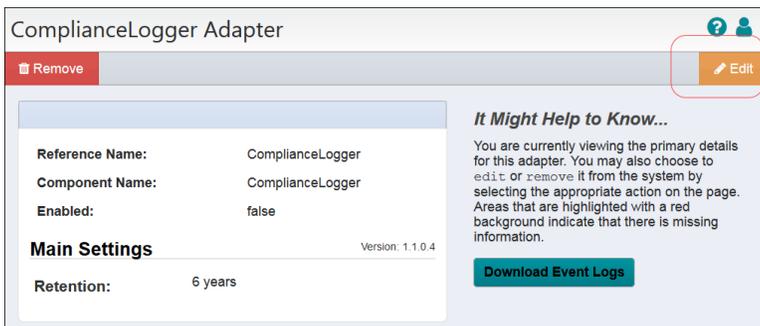
This page is used by all the adapter guides, and therefore, the adapter used as an example here may not be the adapter that you are working with currently.

1. Access the Vocera Platform Web Console and navigate to the adapters.  
See [Navigating the Vocera Platform Adapters](#) on page 38 for instructions.
2. Select the adapter to edit in the **Adapters** list.



Name	Component Name	Enabled
AlarmNotification	HL7	false
Ascom	Ascom	false
ComplianceLogger	ComplianceLogger	false
CUCM	CUCM	false
CustomAudit for CUCM	CustomAudit	true

3. Select **Edit** in the adapter's menu.



**ComplianceLogger Adapter**

Remove Edit

Reference Name: ComplianceLogger  
Component Name: ComplianceLogger  
Enabled: false

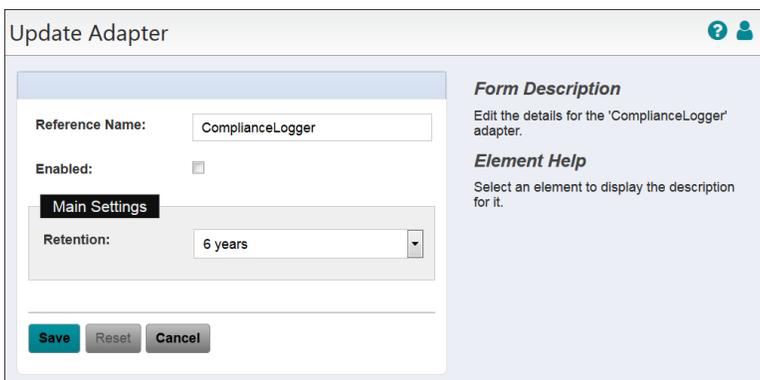
**Main Settings** Version: 1.1.0.4  
Retention: 6 years

**It Might Help to Know...**  
You are currently viewing the primary details for this adapter. You may also choose to edit or remove it from the system by selecting the appropriate action on the page. Areas that are highlighted with a red background indicate that there is missing information.

Download Event Logs

The **Update Adapter** page for the adapter displays.

4. Edit the adapter's settings to revise the configuration as needed. See the adapter-specific configuration page for details on working with settings for this adapter.  
Select an empty field and begin typing, or select an existing value and type over it. To keep an existing value, do not edit that field.



**Update Adapter**

Reference Name: ComplianceLogger  
Enabled:

**Main Settings**  
Retention: 6 years

**Form Description**  
Edit the details for the 'ComplianceLogger' adapter.

**Element Help**  
Select an element to display the description for it.

Save Reset Cancel

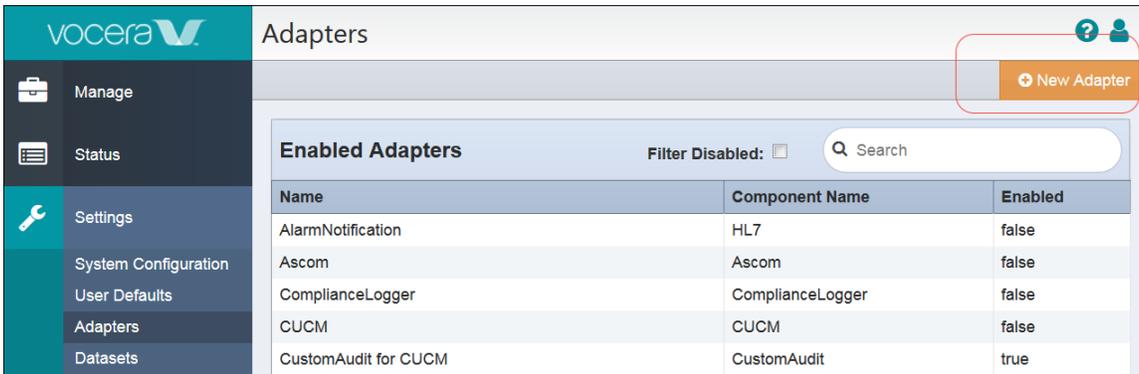
5. Select one of the options to exit the **Update Adapter** page. See [Saving an Adapter](#) on page 42 for details.

## Creating a New Adapter

Access the Vocera Platform Web Console to work with adapters, or create a new adapter when prompted in the package import process.

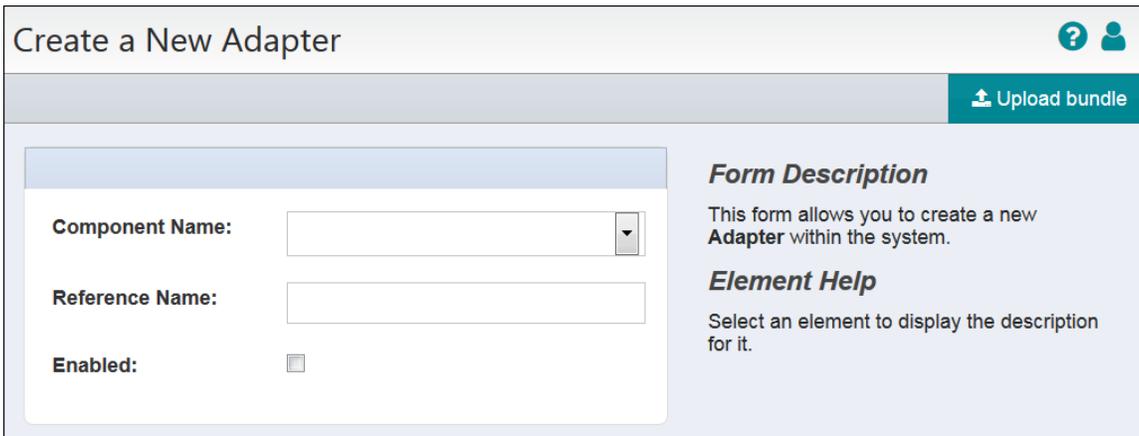
This page is used by all the adapter guides, and therefore, the adapter used as an example here may not be the adapter that you are working with currently.

1. Access the Vocera Platform Web Console and navigate to the adapters.  
See [Navigating the Vocera Platform Adapters](#) on page 38 for instructions.
2. Select **New Adapter** in the Action menu on the Adapters page.



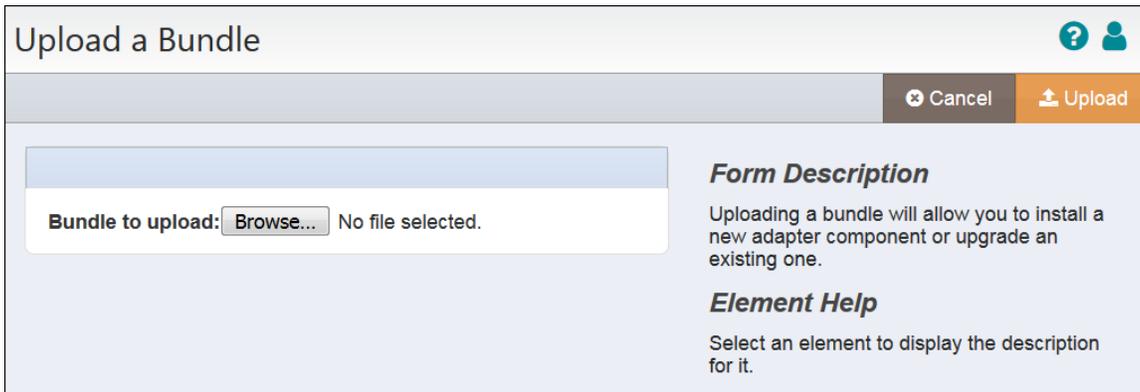
The **Create a New Adapter** dialog displays.

3. Complete the configuration fields.



Name	Description
<b>Component Name *</b>	Select the Component Name field dropdown arrow to display a list of the systems and devices that Vocera currently supports. Select the name of the adapter to create.
<b>Reference Name</b>	Enter a short descriptive name in the Reference Name field to uniquely identify an adapter instance. It may demonstrate the adapter function or other information; for example, Production adapter may differentiate a live adapter from a development or "sandbox" adapter.
<b>Enabled</b>	Select the Enabled check box to allow Vocera Platform to use the new adapter. Vocera ignores the adapter if this option is disabled.

4. Select **Upload Bundle** in the Action menu to install a package on a Vocera Platform.  
Use the Upload Bundle feature to install when the adapter is not available in the Component Name dropdown list, and you have downloaded the needed adapter bundle to a storage location.
5. Click on **Browse** to navigate to the bundle to install.



6. Select one of the Action options to exit from the Upload a Bundle dialog.

- **Upload:** Upload the selected bundle to the appliance.
- **Cancel:** Close the Upload a Bundle dialog without making a change to the system.

## Saving an Adapter

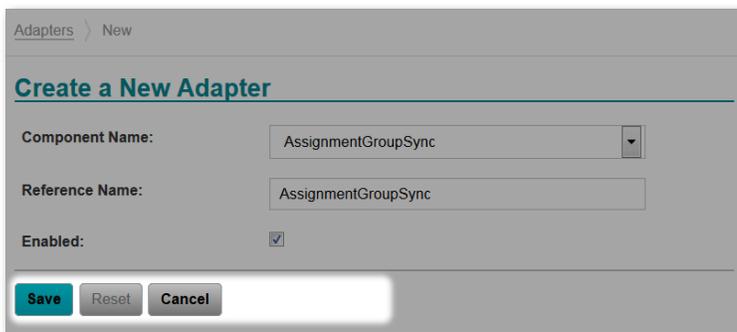
Close an adapter configuration dialog using the Save, Reset, or Cancel options.

This page is used by all the adapter guides, and therefore, the adapter used as an example here may not be the adapter that you are working with currently.

When creating a new adapter, the options at the bottom of the adapter configuration page are Save, and Cancel.

When editing an existing adapter, the options are Save, Reset, and Cancel.

Choose an option to close the dialog:



Option	Description
<b>Save</b>	Select Save to store the adapter configuration in the system, when the fields are set to desired specifications.
<b>Cancel</b>	Select Cancel to close the configuration window without saving your changes to the system.
<b>Reset</b>	Select Reset to clear all fields without closing the window, in order to select other specifications for the adapter's settings.

## Deactivating an Adapter

Temporarily deactivate an adapter to avoid unintentional use of it in an implementation.

This page is used by all the adapter guides, and therefore, the adapter used as an example here may not be the adapter that you are working with currently.

1. Access the Vocera Platform Web Console and navigate to the adapter to deactivate.  
See [Navigating the Vocera Platform Adapters](#) on page 38 for instructions.
2. Select **Edit** in the Actions menu to access the Update page for the adapter.

**XMPP Adapter**

Remove Edit

Reference Name:	XMPP
Component Name:	XMPP
Enabled:	true

**Main Adapter Settings** Version: 4.0.0.175

**It Might Help to Know...**  
You are currently viewing the primary details for this adapter. You may also choose to edit or remove it from the system by selecting the appropriate action on the page. Areas that are highlighted with a red background indicate that there is missing information.

3. Un-check the **Enabled** box to temporarily deactivate the adapter.  
When deactivated, the Vocera system will ignore the adapter. You can easily enable or disable the adapter at any time.

**Update Adapter**

Reference Name: XMPP

Enabled:

**Required Datasets**

Actors: Actors

Assignments: Assignments

**Form Description**  
Edit the details for the 'XMPP' adapter.

**Element Help**  
Select an element to display the description for it.

4. Select one of the options to exit the **Update Adapter** page. See [Saving an Adapter](#) on page 42 for details.

## Removing an Adapter

Permanently remove an adapter from the Vocera system.

This page is used by all the adapter guides, and therefore, the adapter used as an example here may not be the adapter that you are working with currently.

Use the remove function to permanently delete the adapter from the system. Alternatively, you can [disable](#) an adapter and the Vocera system will ignore it.



**Warning:** Remove cannot be undone. If any system features use this adapter, removing the adapter prevents the features from functioning.

1. Access the Vocera Platform Web Console and navigate to the adapter to remove.  
See [Navigating the Vocera Platform Adapters](#) on page 38 for instructions.
2. Select **Remove** in the Actions menu to permanently delete the adapter.

**XMPP Adapter**

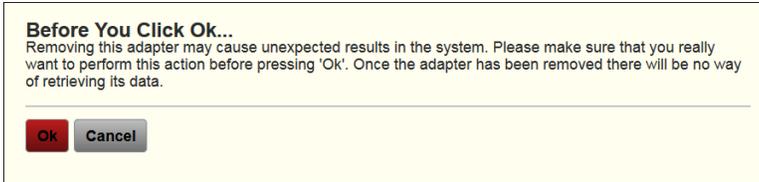
Remove Edit

Reference Name:	XMPP
Component Name:	XMPP
Enabled:	true

**Main Adapter Settings** Version: 4.0.0.175

**It Might Help to Know...**  
You are currently viewing the primary details for this adapter. You may also choose to edit or remove it from the system by selecting the appropriate action on the page. Areas that are highlighted with a red background indicate that there is missing information.

3. Click **Ok** in the confirmation window.



- **Ok:** Confirm the choice to remove the adapter from the system.
  - **Cancel:** Return to the adapter page without making a change.
4. Confirm that the adapter no longer displays in the Adapters list view, when a success message displays.

