

Vocera SIP Adapter Configuration Guide

Version 1.4.0

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Contents

Understanding a Vocera SIP Adapter Configuration	4
Viewing the Vocera SIP Adapter Requirements	4
Configuring a Vocera SIP Adapter	5
Working with Recorded Messages for Vocera SIP Adapter	
Understanding the Vocera SIP Adapter Rules	13
Viewing a Brekeke SIP Server Configuration	14
Understanding Adapter Installation	16
Recreating a Repository	16
Installing an Adapter	17
Practicing an Adapter Installation	
Navigating the Vocera Platform Adapters	19
Editing an Adapter	21
Creating a New Adapter	22
Saving an Adapter	23
Creating a New Adapter Saving an Adapter Deactivating an Adapter Removing an Adapter	23
Removing an Adapter	24

Understanding a Vocera SIP Adapter Configuration

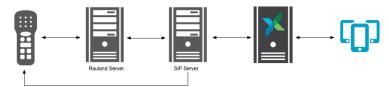
The Vocera SIP Adapter recieves data from a nurse call system, which can be utilized for Vocera Platform communication.

Adapters send information to and receive information from 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.

The Vocera SIP Adapter (Session Initiation Protocol) is used to receive messages and data from various Nurse Call systems, such as Rauland Responder 5. This data is then used to communicate necessary information, such as the patient's room or bed number in a facility, as well as sending an alert type for that message.

By combining the information received through the Vocera SIP Adapter with information received through a device adapter, such as CUCM or Smartphone adapter, then an assigned device can receive a message when a patient alert is triggered.

As seen in the figure below, when an alert is initiated by a patient or a clinician, a message is created and relayed to the Vocera SIP Adapter. It is then sent to the Vocera Platform, where that message is logged and stored in the Data Manager.



Viewing the Vocera SIP Adapter Requirements

The minimum Vocera SIP Adapter requirements for a Vocera Platform installation are described here. Installation of a Brekeke SIP Proxy Server (see Viewing a Brekeke SIP Server Configuration on page 14)

See Best Practice for Rauland-Brekeke SIP Integration with Engage SIP Adapter on the **Prof Services** wiki See this public website for additional information: http://www.brekeke.com/sip/

Configuring a Vocera SIP Adapter

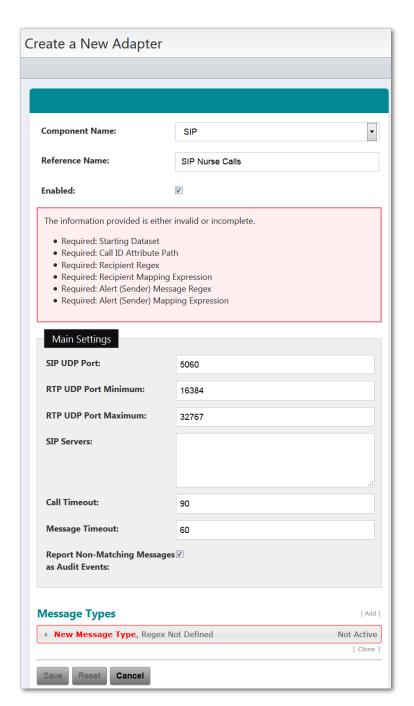
Description of the settings that enable direct communication between the Vocera SIP Adapter and the Vocera Platform.

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 19 for instructions.
- 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 22 and Editing an Adapter on page 21 for instruction as needed.

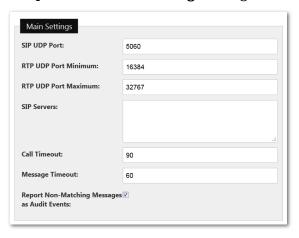
 The configuration fields are the same for new and existing adapters.



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.
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.

5. Complete the **Main Settings** configuration fields as described in the table.



Main Settings Configuration Field	Description
SIP UDP Port	Enter the UDP port on which the SIP process listens for incoming SIP requests. Any client applications that connect to the adapter must be configured to use this port. Note that multiple Vocera SIP Adapter can be configured, but they need to be configured to listen on different ports.
RTP UDP Port Minimum	Enter the minimum number defining the range of UDP ports used to listen for incoming RTP messages. Each conversation will use a separate port. The range in this example is 16384 through 32767.
RTP UDP Port Maximum	Enter the maximum number defining the range of UDP ports used to listen for incoming RTP messages. Each conversation will use a separate port. The range in this example is 16384 through 32767.
SIP Servers	Enter the IP addresses from which incoming SIP messages will be accepted. These addresses should correspond to the SIP servers that are sending invite messages. This field is optional, however, if this field is left empty, then all incoming messages are accepted.
Call Timeout	Enter the time in seconds before a call will be automatically canceled, if the call is still waiting for a rule to fire to indicate the call response. After this period, a call is automatically disconnected if a response has not been received.
Message Timeout	Enter the time in minutes (1 to 10,000) that is expected to elapse between valid SIP requests. The adapter is considered idle if no messages are received within the number of minutes shown here; in this example, 60 minutes.
Report Non-Matching Messages as Audit Events	Check this box if all Invite messages that do not match a message type should cause an audit message to be sent. An audit event will be recorded for received messages that do not match a message definition.

6. Complete the **Message Type** configuration fields as described in the table.



Message Types are used to store message data within the Data Manager. Stored message data may trigger a Rule or be used at a later time for a display on a Workflow page, for filtering a View, be referenced in another Rule, or any other use of data permitted by Vocera Platform.

This section describes how to configure the Regex strings and mappings that are used to decode the message data. The system matches message types in the order which they are defined. After the first message type has been successfully matched and processed, no further attempt is made to match any subsequent message type. If a message type is successfully matched, but there is an error in processing the data, the system will continue to the next message type. See **Understading Regular Expressions** for an overview explanation and examples of Regex code and mappings.

Select **New Message Type** in the Message Types section at the bottom of the configuration page, and complete the fields described below.

Message Type Configuration Field	Description
Reference Name	Enter a descriptive name for the collection of settings specified in the new Message Type being created, such as Alerts, or Cancelled Alerts. Replace the default entry (New Message Type) in the Reference Name field.
Active	Select the Active checkbox to allow the Vocera Platform to use the new Message Type. The Vocera Platform will ignore the Message Type if this option is disabled.
Discard	Select the Discard checkbox to discard messages matching the regular expression in this message type. When checked, all remaining fields are hidden except the Recipient Regex field, and the Alert (Sender) Message Regex field.
Immediately Respond to Calls	Check this box to have calls immediately answered when they are received. If not checked, calls will ring until a response is received, as specified by a rule. Selecting this option displays the Response to Send setting.

Message Type Configuration Field	Description
Response to Send	Select the response to implement for calls. This option is only available if Immediately Respond to Calls is checked. Response options displayed in the dropdown menu are: • Accept without Message: Send an immediate "OK" response, and then hang up. • Connection Not Made (Not Found): Send a "recipient not found" error. • For each available recording, there is an option to accept the call (send "OK"), play back the message, and then hang up. See Working with Recorded Messages for Vocera SIP Adapter on page 10 for instruction on managing message recordings in the adapter.
Starting Dataset	Select the Starting Dataset from the drop-down list that will serve as a starting point for the attributes or attribute expressions included in the Regex mapping. See Understanding Regular Expressions for an overview explanation and examples of Regex code and mappings. This field is required, if Discard is not selected.
Call ID Attribute Path	Enter an attribute path relative to the Starting Dataset that will be used to store the unique identifier for the SIP request. The SIP identifier may be used to send responses upon receipt of an action from a user. This field is required, if Discard is not selected.
Recipient Regex	Specify a regular expression that matches the recipient of the incoming SIP call. This field is required.
Recipient Mapping Expression	Specify one or more attributes or attribute paths in the Recipient Mapping Expression field to store values from the SIP call recipient identified in the Recipient field. Regex mapping values are displayed one per line. See Understanding Regular Expressions for an overview explanation and examples of Regex code and mappings. This field is required, if Discard is not selected.
Alert (Sender) Message Regex	Specify a regular expression that matches the alert type of the incoming SIP call. The alert type is assumed to be the "from" address of the SIP call. This field is required.
Alert (Sender) Mapping Expression	Specify one or more attributes or attribute paths in the Alert Mapping Expression field to store values from the alert field. Regex mapping values are displayed one per line. See Understanding Regular Expressions for an overview explanation and examples of Regex code and mappings. This field is required, if Discard is not selected.
Canceled Mapping Expression	Specify one or more attributes or attribute paths in the Canceled Mapping Expression field to update data if a call is canceled before it is completed.
Clone Message Type	Select Clone to create a duplicate of the selected message type. The reference name of the cloned message type will automatically be unique, and will be set as inactive by default.
Remove Message Type	If one or more message type is created, the ability to remove a message type becomes active. Select Remove to delete the message type from the adapter configuration.

7. Select one of the available options to exit the adapter configuration page. See Saving an Adapter on page 23 for details.

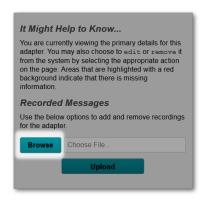
Working with Recorded Messages for Vocera SIP Adapter

The Vocera SIP Adapter provides the ability to upload a pre-recorded message file for play back to the caller when the call is answered.

Once uploaded to the Vocera Platform, the audio files are available in Message Type configurations (see **Recorded Message** in Configuring a Vocera SIP Adapter on page 5) and in a dataset's configuration options, in the Understanding the Vocera SIP Adapter Rules on page 13 for the Vocera SIP Adapter.

An uploaded file can be deleted if it is not used by any message type or rule for the adapter instance. Most current audio file types are supported. File names are case sensitive; uploading a second file with the name in the same case will overwrite the first file. You can upload files with the same name if they use different case (i.e., DND and dnd).

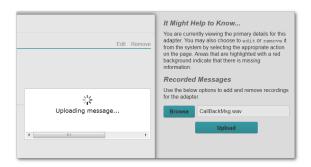
Click **Browse** in the adapter's sidebar configuration under Recorded Messages, and navigate to select the recorded message file to upload.



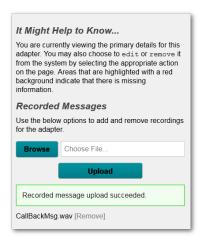
Click **Upload** to add the file to the system when the file name of the recorded message you want to upload displays in the **Choose File** field.



A spinning wheel indicates that the message is uploading.



A confirmation message displays reporting the successful upload of the recorded message file to the system, as shown below.



Uploaded message files display in an alphanumeric ordered list in the Recorded Messages section, as shown below.

Select **Remove** next to the file name, to remove a recorded message from the system. A file can be removed if it is not used by any message type or rule.



A confirmation message displays, and the file name is immediately removed from the list.

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. Recorded Messages Use the below options to add and remove recordings for the adapter. Browse Choose File... Upload Recorded message deleted. CallBackMsg.wav [Remove]

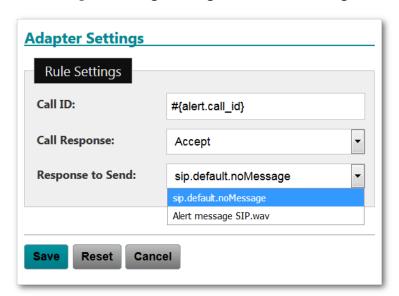
Understanding the Vocera SIP Adapter Rules

Vocera SIP Adapter rules specify how a response received from a device should be communicated back to the SIP caller.

See the Vocera Platform Dataset Guide for information about working with rules. See Configuring a Vocera SIP Adapter on page 5 for information about adapter settings.

A Vocera SIP Adapter (Session Initiation Protocol) is used to receive messages and data from various Nurse Call systems, such as Rauland Responder 5. By combining the information received through the Vocera SIP Adapter with information received through a device adapter, such as Vocera CUCM Adapter or Vocera XMPP Adapter, then an assigned device can receive a message when a patient alert is triggered.

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



Setting	Description
Call ID	Field that stores the ID used to identify the call when forwarding the response to the caller, typically an attribute expression relative to the triggering dataset. This is a required field.
Call Response	Field that determines the type of response to send (either Accept or Decline). This is a required field .
Response to Send	Optionally specifies a message to play back to the caller after accepting the call; this field displays only if the Call Response field specifies Accept . A recorded message displayed in this field is provided by a file upload on the Vocera Platform. See Working with Recorded Messages for Vocera SIP Adapter on page 10.

Viewing a Brekeke SIP Server Configuration

The Brekeke SIP server configuration should be the hospital's responsibility. The information on this page is provided for reference.

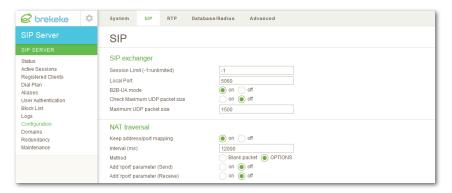
Contact the hospital's System Administrator for access and login information if needed.

Refer to Brekeke SIP Server documentation (http://www.brekeke.com/sip/) for additional administration information.

Viewing the Brekeke SIP Server Configuration Fields

Once logged into the Brekeke SIP server, locate these settings in the left navigation in the user interface.

- Active Sessions: Displays any calls that are actively being processed.
- Status: Allows you to start / stop the SIP server.
- **Dial Plan**: Allows the configuration of rules for one or more SIP source / destination combinations.
- **Configuration**: Allows the configuration of the Local Port (see the SIP Exchanger tab below.) In this example, Local Port is set to 5060.



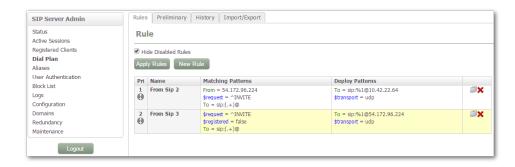
Viewing Dial Plan Configuration Fields

Select **Dial Plan** in the navigation tree, and view the **Rule** tab as shown below.

The following table specifies the configuration details shown in the Rule tab. Note that $To = \sin(.+)$ @' can be configured to match the dial pattern on the phone to send to different Vocera SIP Adapter. In addition, Rule 2 can be modified to add a 'From' field with the IP address of the phone, in order to allow multiple phones to connect to different Vocera SIP Adapter.

Priority	Rule Name	Matching Patterns	Deploy Patterns
1	ADP to Brekeke	From = <appliance ip<br="">address> \$request = ^ INVITETo = sip:(.+)@</appliance>	To = sip:%1@ <brekeke ip<br="">address> \$transport = udp</brekeke>

]	Priority	Rule Name	Matching Patterns	Deploy Patterns
:	2	Any to ADP	<pre>\$request = ^INVITE \$registered = falseTo = sip: (.+)@</pre>	To = sip:%l@ <appliance address="" ip=""> \$transport = udp</appliance>



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.

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.

2. Execute the following commands:

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

```
[tpx-admin@engage log] $ sudo yum list available | grep extension extension-navicare-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-navicare-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-navicare-interface.x86 64 0:1.3.6-0 will be installed
--> Finished Dependency Resolution
Dependencies Resolved
Package
                                                 Arch
Version
                                Repository
                                                             Size
Installing:
                                                 x86 64
 extension-navicare-interface
 1.3.3-0
                                Quartz
                                                             59 k
Transaction Summary
Install 1 Package
Total download size: 59 k
Installed size: 62 k
Is this ok [y/d/N]: y
Downloading packages:
extension-navicare-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-navicare-interface-1.3.6-0.x86_64
                                                            1/1
 Verifying : extension-navicare-interface-1.3.6-0.x86_64
                                                            1/1
Installed:
  extension-navicare-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.

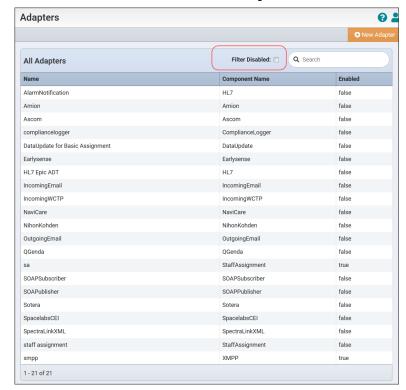
3. Select an adapter to work with from the list displayed in the grid, or select the New Adapter Action option to create a new adapter.

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.



4. 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.



5. 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 \mathbf{x} icon allows you to clear the search field.



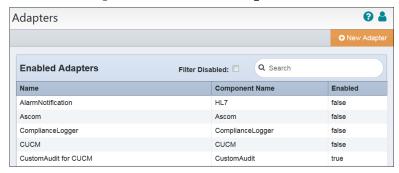
Editing an Adapter

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 19 for instructions.
- 2. Select the adapter to edit in the **Adapters** list.



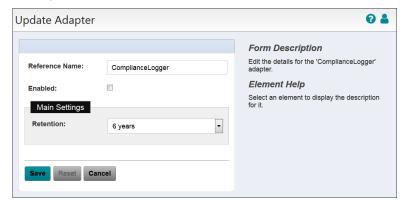
3. Select **Edit** in the adapter's menu.



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.



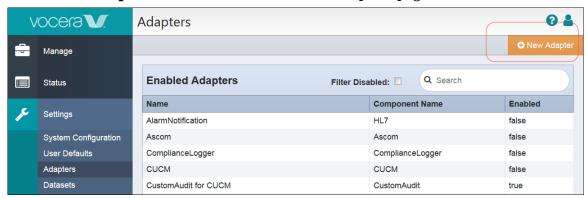
5. Select one of the options to exit the **Update Adapter** page. See Saving an Adapter on page 23 for details.

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.

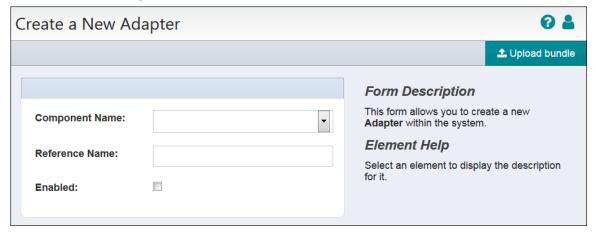
This page is used by all the adapter guides, and therefore, the adapter used as an example here may not be the adapter that you are working with currently.

- 1. Access the Vocera Platform Web Console and navigate to the adapters. See Navigating the Vocera Platform Adapters on page 19 for instructions.
- 2. Select **New Adapter** in the Action menu on the Adapters page.



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

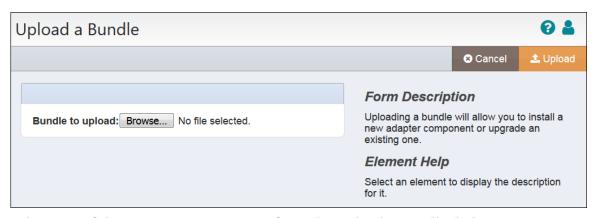
3. Complete the configuration fields.



Name	Description	
Component Name *	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.	
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 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

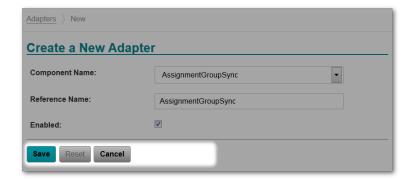
Close an adapter configuration dialog using the Save, Reset, or Cancel options.

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
Save	Select Save to store the adapter configuration in the system, when the fields are set to desired specifications.
Cancel	Select Cancel to close the configuration window without saving your changes to the system.
Reset	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.

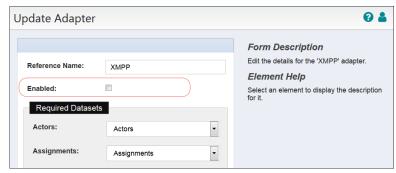
This page is used by all the adapter guides, and therefore, the adapter used as an example here may not be the adapter that you are working with currently.

- 1. Access the Vocera Platform Web Console and navigate to the adapter to deactivate. See Navigating the Vocera Platform Adapters on page 19 for instructions.
- 2. Select **Edit** in the Actions menu to access the Update page for the adapter.



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.



4. Select one of the options to exit the **Update Adapter** page. See Saving an Adapter on page 23 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.

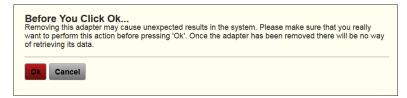


Warning: Remove cannot be undone. If any system features use this adapter, removing the adapter prevents the features from functioning.

- 1. Access the Vocera Platform Web Console and navigate to the adapter to remove. See Navigating the Vocera Platform Adapters on page 19 for instructions.
- 2. Select **Remove** in the Actions menu to permanently delete the adapter.



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.

