stryker

Vocera Assignment Manager Adapter Configuration Guide

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Notice

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Contents

Understanding a Vocera Assignment Manager Adapter Configuration

Configure a Vocera Assignment Manager Adapter to allow communication between the staff scheduling system, and the Vocera Platform.

Adapters send 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.
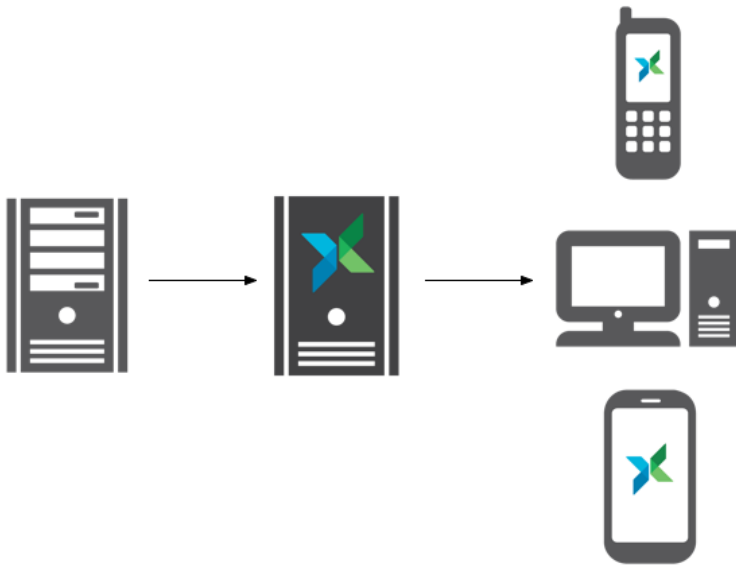
The Vocera Assignment Manager Adapter enables staff assignment and staff scheduling systems that require additional types of management to have accurate assignment information. These systems may use a different model for their assignment data, or they may provide the assignment data with start and end dates (including future data) and therefore need Vocera Platform to manage the state transitions.

For assignment systems that do not notify Vocera Platform with the state changes, the Vocera Assignment Manager Adapter provides automated updating of assignment state by using defined conditions for marking assignments as started and ended when the assignment system provides the future start and end dates. Assignments that are patient-centric (as opposed to Vocera Platform's location-centric model) are managed by updating assignment data as key patient data changes (bed and status). A link attribute allows assignment data updates between the Assignments and Patients datasets.

The Vocera Assignment Manager Adapter performs the following functions:

- Sets initial state of new managed assignments, if not set on creation.
- Allows transitioning managed assignments to the "active", "deleted", and "expired" states when they match certain conditions.
- Ensures that managed assignments associated with a patient remain associated to the patient's bed as well, even if patient's bed changes.

In the figure below, installers can see how information and data is communicated between systems.

Viewing the Vocera Assignment Manager Adapter Requirements

The minimum requirements for a Vocera Assignment Manager Adapter are described here.

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 ASSIGNMENTS Dataset stores all assignments for staff. These are used to determine who to send alerts to.
- The BEDS Dataset stores all information for beds that are registered.
- The FACILITIES Dataset stores all facility information for a site. Represents a physical building location or campus.
- The FUNCTIONAL_ROLES Dataset stores all roles for assignments. These are used to determine the activities users can perform.
- The LOCATIONS Dataset stores all locations. These represent a bed or group of beds to which assignments are made.
- The PATIENTS Dataset stores all patient information.
- The PATIENT_ASSIGNMENTS Dataset stores all patient assignment information.
- The PLACES Dataset stores all places.
- The ROOMS Dataset stores all information for rooms that are registered.
- The UNITS Dataset stores all unit information for a site. Represents a unique care unit in a facility.
- The USERS Dataset stores all Engage users.

ASSIGNMENTS Dataset

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	assignment_id	N/A	True	N/A	N/A	String	Attribute that stores the unique identifier for the assignment.
Attribute	interface_id	N/A	True	N/A	N/A	String	Attribute that stores the identifier for the interface owning this assignment.
Attribute	level	N/A	True	N/A	N/A	String	Attribute that stores the level of the assignment.
Attribute	accepted_at	N/A	False	N/A	False	Date/Time	Attribute that stores the timestamp at which the assignment was accepted by the user.
Attribute	assigned_at	N/A	False	N/A	False	Date/Time	Attribute that stores the timestamp at which the assignment was assigned to the user.
Attribute	ended_at	N/A	False	N/A	False	Date/Time	Attribute that stores the timestamp at which the assignment actually ended.
Attribute	ends_at	N/A	False	N/A	False	Date/Time	Attribute that stores the timestamp at which the assignment is scheduled to end.

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	external	N/A	False	N/A	False	String	Attribute that stores whether or not the assignment came from an external system.
Attribute	starts_at	N/A	False	N/A	False	Date/Time	Attribute that stores the timestamp at which the assignment is scheduled to start.
Attribute	state	N/A	False	N/A	False	String	Attribute that stores the state of the assignment. Possible values are active, next, expired, and deleted.
Attribute	timestamp	N/A	False	N/A	False	Date/Time	Attribute that stores the timestamp at which the assignment was received.
Link	location	assignments	False	False	N/A	Many-to-one	The ASSIGNMENTS Dataset is linked to the LOCATIONS Dataset, and the link order is n:1 (many assignments associated to one location).

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Link	patient	assignments	False	False	N/A	Many-to-one	The ASSIGNMENTS Dataset is linked to the PATIENTS Dataset, and the link order is n:1 (many assignments associated to one patient).
Link	role	assignments	False	False	N/A	Many-to-one	The ASSIGNMENTS Dataset is linked to the FUNCTIONAL_ROLES Dataset, and the link order is n:1 (many assignments associated to one functional_role).
Link	usr	assignments	False	False	N/A	Many-to-one	The ASSIGNMENTS Dataset is linked to the USERS Dataset, and the link order is n:1 (many assignments associated to one user).

BEDS Dataset

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	bed_number	N/A	True	N/A	N/A	String	Attribute that stores the number of the bed.
Link	room	beds	True	False	N/A	Many-to-one	The BEDS Dataset is linked to the ROOMS Dataset, and the link order is n:1 (many beds associated to one room).

FACILITIES 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 unique name of the facility.
Link	functional_rol	facility	False	True	N/A	One-to-many	The FACILITIES Dataset is linked to the FUNCTIONAL_ROLES Dataset, and the link order is 1:n (one facility associated to many functional_roles).
Link	locations	facility	False	True	N/A	One-to-many	The FACILITIES Dataset is linked to the LOCATIONS Dataset, and the link order is 1:n (one facility associated to many locations).
Link	rooms	facility	False	True	N/A	One-to-many	The FACILITIES Dataset is linked to the ROOMS Dataset, and the link order is 1:n (one facility associated to many rooms).
Link	units	facility	False	True	N/A	One-to-many	The FACILITIES Dataset is linked to the UNITS Dataset, and the link order is 1:n (one facility associated to many units).

FUNCTIONAL_ROLES 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 of the role.
Link	facility	functional_rol	True	False	N/A	Many-to-one	The FUNCTIONAL_ROLES Dataset is linked to the FACILITIES Dataset, and the link order is n:1 (many functional_roles associated to one facility).
Link	assignments	role	False	False	N/A	One-to-many	The FUNCTIONAL_ROLES Dataset is linked to the ASSIGNMENTS Dataset, and the link order is 1:n (one functional_role associated to many assignments).

LOCATIONS Dataset

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	location_id	N/A	True	N/A	N/A	String	Attribute that stores the unique identifier for the location.
Attribute	name	N/A	False	N/A	False	String	Attribute that stores the name of the location.
Link	facility	locations	True	False	N/A	Many-to-one	The LOCATIONS Dataset is linked to the FACILITIES Dataset, and the link order is n:1 (many locations associated to one facility).

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Link	assignments	location	False	False	N/A	One-to-many	The LOCATIONS Dataset is linked to the ASSIGNMENTS Dataset, and the link order is 1:n (one location associated to many assignments).
Link	places	locs	False	False	N/A	Many-to-many	The LOCATIONS Dataset is linked to the PLACES Dataset, and the link order is m:n (many locations associated to many places).
Link	units	locations	False	False	N/A	Many-to-many	The LOCATIONS Dataset is linked to the UNITS Dataset, and the link order is m:n (many locations associated to many units).

PATIENTS Dataset

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	mrn	N/A	True	N/A	N/A	String	Attribute that stores the Medical Record Number of the patient.
Attribute	status	N/A	False	N/A	False	String	Attribute that stores the admission status of the patient.

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Link	assignments	patient	False	False	N/A	One-to-many	The PATIENTS Dataset is linked to the ASSIGNMENTS Dataset, and the link order is 1:n (one patient associated to many assignments).
Link	current_place	patient	False	False	N/A	One-to-one	The PATIENTS Dataset is linked to the PLACES Dataset, and the link order is 1:1 (one patient associated to one place).
Link	patient_assign	patient	False	False	N/A	One-to-many	The PATIENTS Dataset is linked to the PATIENT_ASSIGNMEI Dataset, and the link order is 1:n (one patient associated to many patient_assignments).

PATIENT_ASSIGNMENTS Dataset

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	interface_ref_	N/A	True	N/A	N/A	String	Attribute that stores the identifier for the interface owning this patient assignment.
Attribute	patient_assign	N/A	True	N/A	N/A	String	Attribute that stores the unique identifier for the patient assignment.

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	assigned_at	N/A	False	N/A	False	Date/Time	Attribute that stores the timestamp at which the patient assignment was assigned.
Attribute	created_at	N/A	False	N/A	False	Date/Time	Attribute that stores the timestamp at which the patient assignment was created.
Attribute	ended_at	N/A	False	N/A	False	Date/Time	Attribute that stores the timestamp at which the patient assignment actually ended.
Attribute	ends_at	N/A	False	N/A	False	Date/Time	Attribute that stores the timestamp at which the patient assignment is scheduled to end.
Attribute	external	N/A	False	N/A	False	Boolean	Attribute that stores whether or not the assignment came from an external system.
Attribute	started_at	N/A	False	N/A	False	Date/Time	Attribute that stores the timestamp at which the patient assignment actually started.

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	starts_at	N/A	False	N/A	False	Date/Time	Attribute that stores the timestamp at which the patient assignment is scheduled to start.
Attribute	state	N/A	False	N/A	False	String	Attribute that stores the state of the assignment. Possible values are active, next, expired, and deleted.
Attribute	timestamp	N/A	False	N/A	False	Date/Time	Attribute that stores the timestamp at which the patient assignment was received.
Link	patient	patient_assign	False	True	N/A	Many-to-one	The PATIENT_ASSIGNME Dataset is linked to the PATIENTS Dataset, and the link order is n:1 (many patient_assignments associated to one patient).
Link	role	patient_assign	False	False	N/A	Many-to-one	The PATIENT_ASSIGNME Dataset is linked to the FUNCTIONAL_ROLES Dataset, and the link order is n:1 (many patient_assignments associated to one functional_role).

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Link	usr	patient_assign	False	True	N/A	Many-to-one	The PATIENT_ASSIGNMEN Dataset is linked to the USERS Dataset, and the link order is n:1 (many patient_assignments associated to one user).

PLACES Dataset

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Link	locs	places	False	False	N/A	Many-to-many	The PLACES Dataset is linked to the LOCATIONS Dataset, and the link order is m:n (many places associated to many locations).
Link	patient	current_place	False	False	N/A	One-to-one	The PLACES Dataset is linked to the PATIENTS Dataset, and the link order is 1:1 (one place associated to one patient).

ROOMS Dataset

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	room_number	N/A	True	N/A	N/A	String	Attribute that stores the room number.
Link	facility	rooms	True	False	N/A	Many-to-one	The ROOMS Dataset is linked to the FACILITIES Dataset, and the link order is n:1 (many rooms associated to one facility).

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Link	beds	room	False	True	N/A	One-to-many	The ROOMS Dataset is linked to the BEDS Dataset, and the link order is 1:n (one room associated to many beds).
Link	unit	rooms	False	False	N/A	Many-to-one	The ROOMS Dataset is linked to the UNITS Dataset, and the link order is n:1 (many rooms associated to one unit).

UNITS 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 unique name for a unit in a facility.
Link	facility	units	True	False	N/A	Many-to-one	The UNITS Dataset is linked to the FACILITIES Dataset, and the link order is n:1 (many units associated to one facility).
Link	locations	units	False	False	N/A	Many-to-many	The UNITS Dataset is linked to the LOCATIONS Dataset, and the link order is m:n (many units associated to many locations).

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Link	rooms	unit	False	False	N/A	One-to-many	The UNITS Dataset is linked to the ROOMS Dataset, and the link order is 1:n (one unit associated to many rooms).

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.
Link	assignments	usr	False	False	N/A	One-to-many	The USERS Dataset is linked to the ASSIGNMENTS Dataset, and the link order is 1:n (one user associated to many assignments).

Configuring a Vocera Assignment Manager Adapter

These settings enable direct communication between the Vocera Assignment Manager 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 31 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 34 and Editing an Adapter on page 33 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.

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 check box 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.

5. Complete the **Main Settings**, **Assignments To Activate**, and **Assignments To Expire** sections using the information in the table below.

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

Configuration Field	Description
Managed Assignment Interfaces	The Managed Assignment Interfaces field is located in the Main Settings section. Enter the adapter identifier (the assignment's interface_id value) used by the interface creating the assignments to be managed by the Vocera Assignment Manager Adapter. Each adapter identifier is generally associated with a single assignment source system. If this field is empty, all assignments will be managed by this Vocera Assignment Manager Adapter.

Configuration Field	Description
Active Condition	The Active Condition field is located in the Assignments to Activate section. Select a condition configured on the Assignments dataset which represents assignments that should be moved to the "active" state. Select Add to configure additional conditions for starting assignments. Select a condition for which all matching assignments will be marked as started. This field is required if a condition is added; otherwise, select Remove. Select Remove if you wish to delete the condition from this adapter's configuration.
Deleted or Expired Condition	The Deleted or Expired Condition field is located in the Assignments to Expire section. Select a condition configured on the Assignments dataset which represents assignments that should be moved to the "deleted" or "expired" states. Select Add to configure additional conditions for expiring or deleting assignments. Select a condition for which all matching assignments will be marked as ended. Future assignments will be marked "deleted", while active assignments will be marked "expired". This field is required if a condition is added; otherwise, select Remove. Select Remove if you wish to delete the condition from this adapter's configuration.

7. Complete the Manage Patient Assignment section.

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

Configuration Field	Description
Map Staff Assignments to Patient Assignments	Select this check box if patients assignments should be created and linked for staff assignments with a patient.

Configuration Field	Description
Facilities	Enter the facility name(s) whose assignments will create and link patient assignments. If this is blank, and the Map Staff Assignments to Patient Assignments box is checked, all assignments will create and link patient assignments.
Units	Enter the unit names whose assignments will create and link patient assignments. If this is blank, and the Map Staff Assignments to Patient Assignments box is checked, all assignments will create and link patient assignments.
Roles	Enter the role names whose assignments will create and link patient assignments. If this is blank, and the Map Staff Assignments to Patient Assignments box is checked, all assignments will create and link patient assignments.
Map Patient Assignments to Staff Assignments	Select this check box if staff assignments should be created and linked for patient assignments with staff.
Facilities	Enter the facility name(s) whose staff assignments will be created for patient assignments. If this is blank, and the Map Patient Assignments to Staff Assignments box is checked, a staff assignment will be created for all patient assignments.
Units	Enter the unit name(s) whose staff assignments will be created for patient assignments. If this is blank, and the Map Patient Assignments to Staff Assignments box is checked, a staff assignment will be created for all patient assignments.
Roles	Enter the roles name(s) whose staff assignments will be created for patient assignments. If this is blank, and the Map Patient Assignments to Staff Assignments box is checked, a staff assignment will be created for all patent assignments.

9. Select one of the available options to exit the adapter configuration page. See Saving an Adapter on page 35 for details.

Viewing Assignment Statistics

The Vocera Assignment Manager Adapter sidebar in the Vocera Platform Web Console displays statistics for the current adapter instance.

These statistics are display only; click the **Refresh** button to retrieve and display the most current statistics.

Whenever the state of an existing assignment is updated to "active" or "expired", it is counted for display in this sidebar. An update includes both the changes due to the "state transition" process and expiring active assignments when a patient is discharged.

The **Active Assignments** section displays the number of active assignments and the start time of the oldest one. The **Future Assignments** section displays the number of known future assignments and the range of expected start times for them.

The **Adapter Activity** section displays the date and time the adapter was started and the number of assignment transitions (activated and expired) the adapter has initiated since starting. This section also displays the last time the adapter checked for needed state changes and the number of state changes from that check that are pending.

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.

Assignment Statistics

Active Assignments

Count:	0
Oldest assignment:	N/A

Future Assignments

Count:	0
Start dates:	N/A - N/A

Adapter Activity

Adapter started:	12/13/2016 15:39
Last processing:	12/13/2016 15:57
Pending state changes:	0
Assignments activated:	0
Assignments expired:	0

Refresh

Understanding the Vocera Assignment Manager Adapter Rules

This adapter does not require dataset rule configuration.

Understanding Vocera Assignment Manager Adapter Operations for Integrations

The adapter handles assignment state transitions, patient-based assignment management, and location changes.

The Vocera Assignment Manager Adapter performs the following functions, as described in this page:

- Sets initial state of new managed assignments, if not set on creation.
- Allows transitioning managed assignments to the "active", "deleted", and "expired" states when they match certain conditions.
- Ensures that managed assignments associated with a patient remain associated to the patient's bed as well, even if the patient's bed changes.

See the Vocera Assignment Manager Adapter configuration documentation to create and manage the adapter in the Vocera system.

Initial Assignment State

The Vocera Assignment Manager Adapter receives subscription messages for newly created assignments and checks if they have a state. If not, their state is set to "next" and their assigned_at timestamp is set to the current time (unless already set). To catch new assignments created while the adapter is not running, at startup it also checks for all assignments without a state and updates them using the same rules.

State Transitions

Once a minute, the Vocera Assignment Manager Adapter queries for assignments which need to have their state changed. In particular it looks for:

- Assignments that match one of the start views and which currently have a state of "next".
- Assignments that match one of the end views and which currently have a state of "next".
- Assignments that match one of the end views and which currently have a state of "active".

Assignments found will have their state changed (to "active" for the first group, to "deleted" for the second group, and to "expired" for the third group) and the current time recorded in the appropriate field for the state change ("accepted_at" for the first group and "ended_at" for the second and third groups).

The adapter confirms that there are no queued requests for state change before trying to check for any more state changes to send. This keeps the adapter from queuing the same requests multiple times. When there are still queued events, the adapter audits that it is pausing processing until processing can catch up. When the queued events have cleared, it then audits that processing is resuming.

Patient Based Assignment Management

Patient-based assignments are based on a link to the PATIENTS dataset ("patient"). If the link exists, the assignment is considered patient-based. It is assumed to be set at assignment creation and never updated.

When a patient-based assignment is created (and its state has been initially transitioned to "next"), its location will be checked to see if it matches the patient's current bed (or lack thereof). If it does not:

- If the assignment's state is "active" and has an assigned location, the assignment will be copied as described in **Copying Assignments on Location Change** in this page.
- Otherwise, the assignment's location will be updated to one mapped to the patient's bed (or no location if the patient does not have a bed).

When a patient's status changes to a non-admitted state, all "active" assignments for that patient will be transitioned to "expired" and all "next" assignments for that patient will be transitioned to "deleted".

When a patient's assigned bed is changed, a location is found or created matching the new bed (if there is one) and their patient-based assignments are updated as follows:

- If the assignment has a state of "next", the assignment record will have its location updated to the identified location (or cleared if the patient is not in a bed).
- If the assignment has a state of "active", the assignment will be copied as described in **Copying Assignments on Location Change** in this page.

To catch changes that occur while the adapter is not running, at startup the adapter checks all patient-based assignments with "next" or "active" states and:

- If the patient has a non-admitted status, the assignment's state is updated to be "deleted" or "expired" using the same process as if a transition to that patient's admit status was received.
- Otherwise, if the assignment's location is not associated with patient's current bed (including having a location when the patient is not assigned to a bed), the location is changed as if a change in the patient's bed had been received.

Copying Assignments on Location Change

For active assignments (unless the assignment is new and has no current location), the location is changed by expiring the current record and creating a copy of the record with the new location. This process has the following characteristics:

- The original record's key (assignment_id) is changed so new updates from the assignment system will not affect it.
- The original record's state is set to "expired" and its ended at time is set to the current time.
- The new record has the same data as the original record (before updates): key values (assignment_id, level, and interface_id), the external flag, the state (which will be "active"), the start and end dates, and the patient, role, location, and user. **No other data will be copied.**
- The new record's "assigned_at" and "accepted_at" values will be set to the current time.

Locations to Use for Changes

The locations used for patient-based assignments will be created by the Vocera Assignment Manager Adapter on an as-needed basis based on a patient's bed (and its linked room). The location id will be based on the bed's record id, with a prefix unique to the assignment manager. The location will be linked to the facility for the room, the bed, and the unit for the room. Its name will be derived from the room and bed numbers.

Rate Limiting Assignment Updates

To keep from overwhelming Vocera Platform by flooding it with updates (such as at shift change), the Vocera Assignment Manager Adapter limits the number of updates it will process at a time. The limit is set to 4000 / minute (actually 66 / second). Updates are queued up (with a maximum depth number of 10000) and the queue is checked every second, processing at most the per-second limit on each check. The per-minute limit and queue limits are configurable as interface properties.

Understanding Epic Treatment Team Configuration

The Epic Treatment Team solution stores assignments from an Epic system, and then allows the Assignment Manager to manage the activity of those assignments.

The Vocera Platform EMDAN solution contains an optional package for an Epic Treatment Team. This supplemental XML package includes conditions related to managing assignments on the Assignments dataset, the Vocera Assignment Manager Adapter, and the HL7 Epic ADT adapter. See the documentation for additional details.

After installing the core Vocera Platform EMDAN solution package, install the optional Epic Treatment Team package and follow the instructions and prompts provided in the package. Replace the HL7 ADT adapter with the HL7 Epic ADT adapter instance; do not use both adapter instances.

This optional Epic Treatment Team solution package is supported on Vocera Platform 6.0.0 or later, and requires the Vocera Platform EMDAN 1.10 solution core package.

Operation

The Epic Treatment Team data flow occurs in a two step process. The first step is to create the assignments in the Vocera Platform. Epic sends ROL segments from the ADT feed in HL7 to the Vocera Platform. The HL7 Epic adapter instance stores these segments as individual assignments, assuming they have matched the segment definition in the message type. These assignments are linked to a patient. The adapter stores other values including the role of the caregiver, and the assignment start and end dates, if provided. Finally, it is possible to receive updates for assignments from Epic. When data is altered, as compared to the initial assignment, such as a caregiver adds an end date to an assignment, then the assignment will be updated in the Vocera Platform.

In the second step, after the assignment has been stored in the Vocera Platform, the Vocera Assignment Manager Adapter instance manages the assignment. The adapter will make the assignment active, inactive, or move it when a patient is transferred. Every three minutes the adapter queries the Vocera Platform core based on the conditions configured in the Vocera Assignment Manager Adapter instance for both active and expired assignments. Any assignments that meet these conditions will have their activity updated accordingly. In addition, the adapter subscribes to the Patients dataset; when a patient moves to a new bed, all previous assignments will be expired and new assignments will be created for the new bed.

ROL Message Handling

The HL7 Epic ADT adapter contains two message definitions; the first is designed to catch A08 HL7 messages with role information, and the second is defined to catch all HL7 messages (including A08).

When an HL7 message comes through that fails to match the "ROL" segment definition in the Epic ADT-A08 message definition, it will be caught in the ADT Messages message definition. The result is that an audit event error will NOT be fired.

Because no audit event error is fired, it is possible that Vocera Platform will not be notified of misconfigured HL7 messages. The HL7 adapter perceives the HL7 message as valid because the PID and PV1 segments are accepted, but it will not actually store the ROL information which prevents the Vocera Assignment Manager Adapter from managing those assignments.

To test that the HL7 Epic ADT adapter is configured correctly, it is recommended that the catch all HL7 message definition should not be active during testing to ensure that all messages with ROL segments are stored with assignments as desired.

Determining Conditions for the Vocera Assignment Manager Adapter

Conditions will need to be created and configured for the Vocera Assignment Manager Adapter to ensure it activates and expires assignments as desired. Here are a few recommended questions to ask to determine some edge cases (this is NOT a complete list):

- Does the site have provider assignments?
  - If there are provider assignments, should they be made active?
- Do some units, roles, or providers want a different default expiration condition?

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
                                              | 3.6 kB  00:00:00

(1/2): Quartz/group_gz
                                              |  483 B  00:00:00

(2/2): Quartz/primary_db
                                              |  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-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:
 extension-navicare-interface                 x86_64
 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.
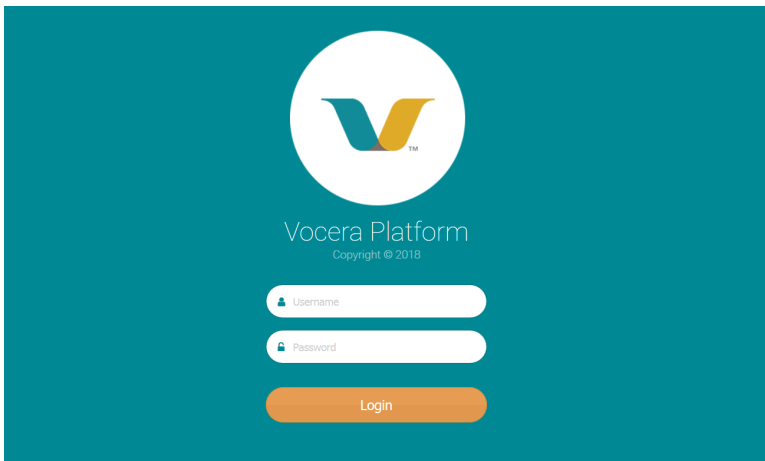
2. Select **Settings > Adapters** in the navigation menu.
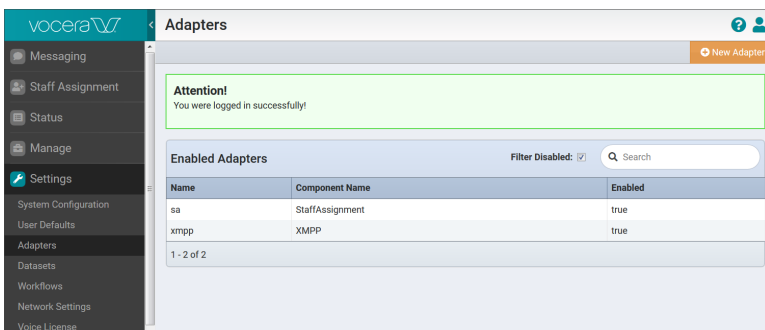

   The **Adapters** page displays.

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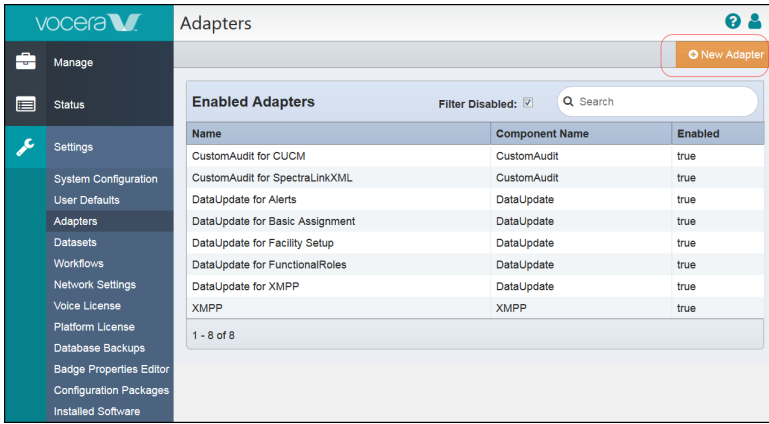
4. Uncheck the **Filter Disabled** box to display all the adapters that have been installed, including those that are not currently enabled. The column title now displays **All Adapters**.

The Filter Disabled box is checked by default.
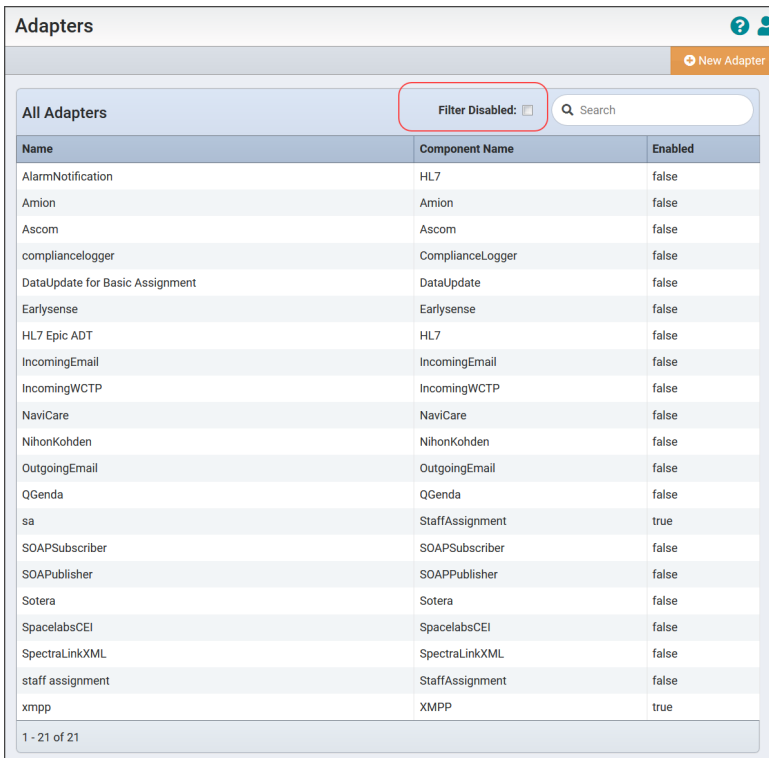
5. Enter a term in the **Search** field to locate a needed adapter on the system.

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 **x** icon allows you to clear the search field.
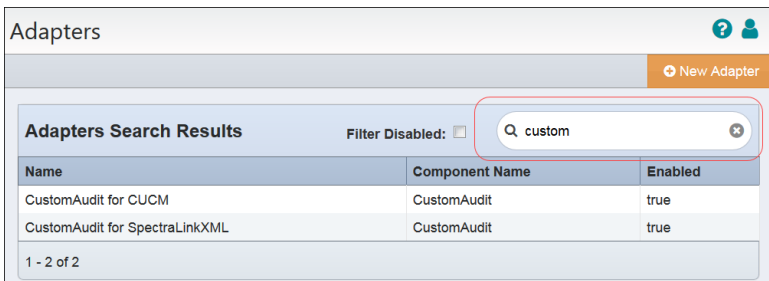
Editing an Adapter

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 31 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 35 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 31 for instructions.
2. Select **New Adapter** in the Action menu on the Adapters page.
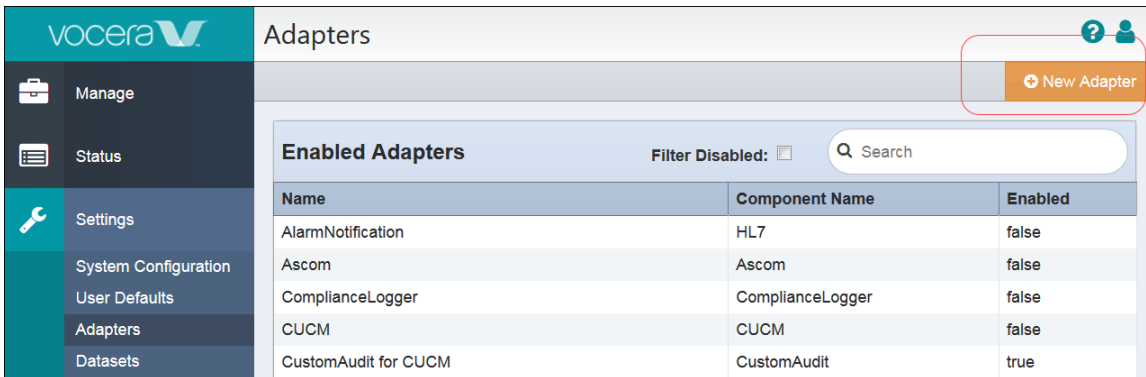
The **Create a New Adapter** dialog displays.
3. Complete the configuration fields.
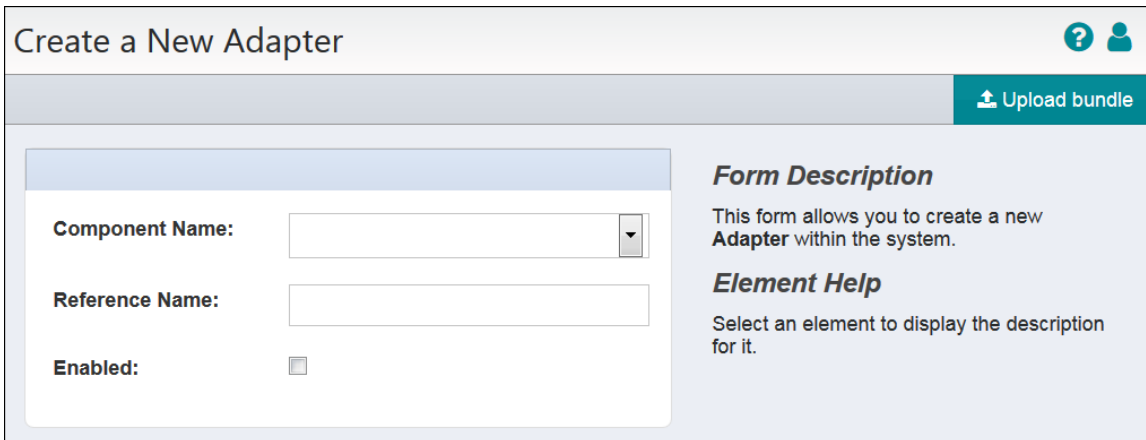
Name	Description
Component Name *	Select the Component Name field dropdown arrow to display a list of the systems and devices that Vocera currently supports. Select the name of the adapter to create.
Reference Name	Enter a short descriptive name in the Reference Name field to uniquely identify an adapter 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.
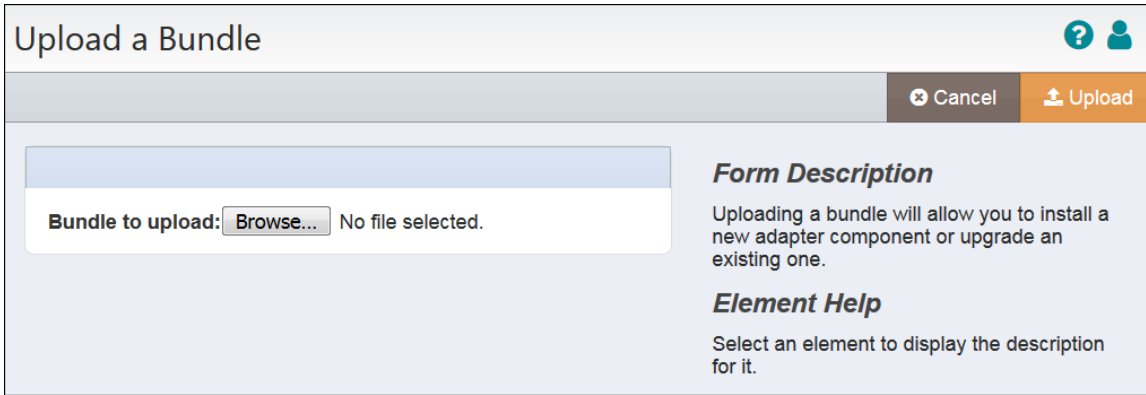
6. Select one of the Action options to exit from the Upload a Bundle dialog.
   - **Upload**: Upload the selected bundle to the appliance.
   - **Cancel**: Close the Upload a Bundle dialog without making a change to the system.

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:
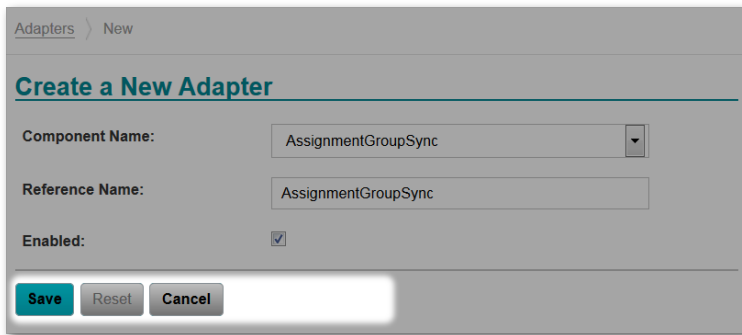
Option	Description
Save	Select Save to store the adapter configuration in the system, when the fields are set to desired specifications.
Cancel	Select Cancel to close the configuration window without saving your changes to the system.
Reset	Select Reset to clear all fields without closing the window, 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 31 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 35 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 31 for instructions.

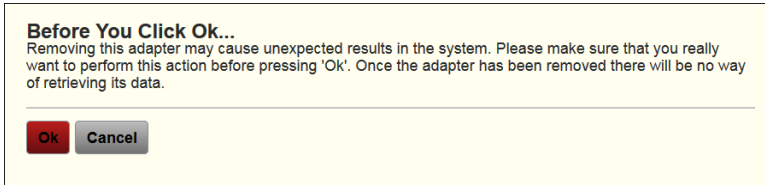2. Select **Remove** in the Actions menu to permanently delete the adapter.

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

Before You Click Ok...
Removing this adapter may cause unexpected results in the system. Please make sure that you really want to perform this action before pressing 'Ok'. Once the adapter has been removed there will be no way of retrieving its data.

[Ok] [Cancel]

- **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.

Adapters

⊕ New Adapter

Attention!
The adapter was removed from the system successfully.