

Vocera Incoming VMI Adapter Configuration Guide

Version 1.2.0

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Understanding a Vocera Incoming VMI Adapter Configuration

The Vocera Incoming VMI Adapter acts as a server for third party integrators using the VMI protocol.

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.

The Vocera Incoming VMI Adapter implements the VMI protocol as a server with the intent of receiving inbound messages and providing responses to the senders. This adapter provides the ability to receive messages and send responses to both alpha-numeric and multiple choice response (MCR) messages. (See [Multiple Choice Response \(MCR\) Matching](#) on page 28 for additional information.)

The adapter is configured in one of two modes; database mode or direct forwarding mode.

When in database mode, the Vocera Incoming VMI Adapter receives and stores messages according to the message types configured, and Vocera Platform EMDAN handles the delivery of the alerts.

When in direct forwarding mode, the Vocera Incoming VMI Adapter receives messages and directly sends it to the Voice Server for delivery to Vocera badges only. When using direct forwarding, delete message requests are supported.

Viewing the Vocera Incoming VMI Adapter Requirements

The Vocera Platform version and datasets required for a Vocera Incoming VMI 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 [ACCESS_POINTS Dataset](#) stores all the voice server access points.
- The [ACCESS_POINT_LOCATIONS Dataset](#) stores all access point locations. These represent an abstract location with which access points can be associated.
- The [ALERT_META_DATA Dataset](#) stores the Metadata for persisting additional Alert information.
- The [DEVICES Dataset](#) stores all details of every device registered with the Vocera Platform. Each device to which Vocera can send a message must be listed in this dataset.
- The [FACILITIES Dataset](#) stores all facility information. Represents a physical building location or campus.

- The **GROUPS Dataset** stores all user groups.
- The **RESPONSE_OPTIONS Dataset** stores a response option for sending and replying with custom responses.
- The **USERS Dataset** stores all Vocera users.

ACCESS_POINTS Dataset

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	mac_address	N/A	True	N/A	N/A	String	Attribute that stores the MAC address of the access point.
Link	access_point_]	access_points	False	False	N/A	Many-to-one	The ACCESS_POINTS Dataset is linked to the ACCESS_POINT_LOCATIONS Dataset, and the link order is n:1 (many access_points associated to one access_point_location).

ACCESS_POINT_LOCATIONS 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 access point location.
Link	facility	access_point_]	True	False	N/A	Many-to-one	The ACCESS_POINT_LOCATIONS Dataset is linked to the FACILITIES Dataset, and the link order is n:1 (many access_point_locations associated to one facility).

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Link	access_points	access_point_]	False	False	N/A	One-to-many	The ACCESS_POINT_LOCATION Dataset is linked to the ACCESS_POINTS Dataset, and the link order is 1:n (one access_point_location associated to many access_points)

ALERT_META_DATA Dataset

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	message_key	N/A	True	N/A	N/A	String	Attribute that stores the locally unique message key for the message.
Attribute	interface	N/A	False	N/A	False	String	Attribute that stores the reference name of the processing interface.
Attribute	message_iden	N/A	False	N/A	False	String	Attribute that stores the external identifier for the message.
Attribute	sender_id	N/A	False	N/A	False	String	Attribute that stores the external identifier for the client.

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.

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
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.
Attribute	access_point_1	N/A	False	N/A	False	String	Attribute that stores the mac address of the access point that the device is currently connected to.
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)

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 for the facility.

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Link	access_point_]	facility	False	True	N/A	One-to-many	The FACILITIES Dataset is linked to the ACCESS_POINT_LOCATION Dataset, and the link order is 1:n (one facility associated to many access_point_location)
Link	groups	facility	False	True	N/A	One-to-many	The FACILITIES Dataset is linked to the GROUPS Dataset, and the link order is 1:n (one facility associated to many groups)
Link	users	facility	False	False	N/A	One-to-many	The FACILITIES Dataset is linked to the USERS Dataset, and the link order is 1:n (one facility associated to many users)

GROUPS 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 group.
Link	facility	groups	True	False	N/A	Many-to-one	The GROUPS Dataset is linked to the FACILITIES Dataset, and the link order is n:1 (many groups associated to one facility)

RESPONSE_OPTIONS Dataset

Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	display_value	N/A	True	N/A	N/A	String	Attribute that stores a response value which may be used to display to the recipient.
Attribute	response_index	N/A	True	N/A	N/A	String	Attribute that stores the index of the response in the list of responses.
Attribute	response_value	N/A	True	N/A	N/A	String	Attribute that stores the response value to be sent back to the originating system.

USERS Dataset

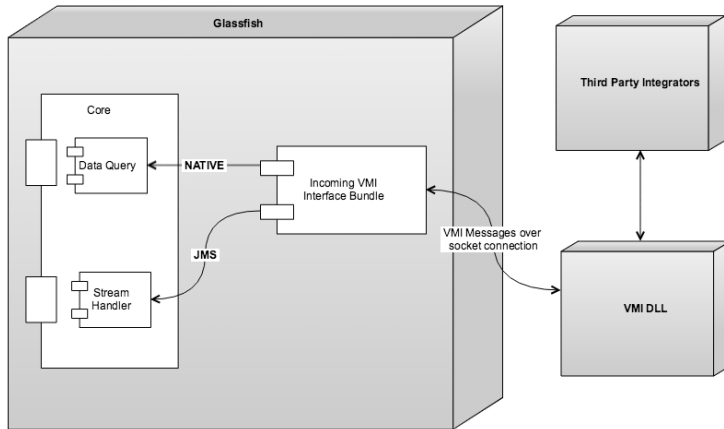
Element	Name	Reverse Name	Key	Reverse Key	Required	Type	Description
Attribute	login	N/A	True	N/A	N/A	String	Attribute that stores the login name of the user.
Attribute	presence_show	N/A	False	N/A	False	String	Attribute that stores the current presence show value for the user.
Link	devices	usr	False	False	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	facility	users	False	False	N/A	Many-to-one	The USERS Dataset is linked to the FACILITIES Dataset, and the link order is n:1 (many users associated to one facility)

Integrating the Vocera Incoming VMI Adapter

View a deployment diagram, and a list of supported/unsupported request operations.

This deployment diagram shows how the Vocera Incoming VMI Adapter fits within the Vocera appliance and a hospital environment.

Deployment Diagram



Unsupported Requests

Unsupported operations will result in a failure confirmation message using the response code rcFailure. Current implementations that use the VMI protocol may find the following list of request operations useful for troubleshooting.

View this table to confirm whether a particular request operation is supported in database mode or direct forwarding mode.

Request	Database Mode	Direct Forwarding Mode
Open	Supported	Supported
ClientIdentification	Supported	Supported
Message	Supported	Supported
DeleteMessage	Not Supported	Supported
AddToGroup	Not Supported	Not Supported
LogEvent	Not Supported	Not Supported
QueryGroup	Supported	Supported
QueryUser	Supported	Supported
RemoveFromGroup	Not Supported	Not Supported

Configuring a Vocera Incoming VMI Adapter

Description of the settings that enable direct communication between the Vocera Incoming VMI 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 37 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 40 and [Editing an Adapter](#) on page 39 for instruction as needed.
The configuration fields are the same for new and existing adapters.

Create a New Adapter

Component Name:

IncomingVMI

Reference Name:

IncomingVMI

Enabled:

☒

Required Datasets

Alert meta data:

AlertMetaData

Groups:

Groups

Response options:

ResponseOptions

Sites:

Sites

Users:

Users

Main Settings

Client Identifiers:

enter text here

Direct Forwarding:

☒

Override DND:

Block non-urgent messages for users

Save

Reset

Cancel

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.

Configuration Field	Description
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.

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

Main Settings

Client Identifiers:

Direct Forwarding:

☐

Report Non-Matching Messages as Audit Events:

☒

Message Types

[Add]

▼ New Message Type, Regex Not Defined

Not Active

Reference Name:

New Message Type

Active:

☐

Discard Message:

☐

Starting Dataset:

Message Regex:

Message Mapping:

Message Key Path:

Recipient Path:

Priority Path:

Callback Number Path:

Ringtone Path:

Link for Responses :

mj

Response Type Matching

Report Non-Matching Responses as Audit Events :

☒

Response Regex :

Response Link :

[Add]

[Remove]

[Clone]

[Remove]

► New Message Type (Co..., Regex Not Defined

Not Active

Save

Reset

Cancel

Main Settings Configuration Field	Description
Client Identifiers	<p>Enter a list of client identifiers to be matched for incoming messages. If none are specified, then this configuration will handle any message not handled by another active configuration.</p> <p>A configuration can have a maximum of 10 client identifiers. Only one configuration can have no client identifier specified.</p> <p>Client identifiers may contain only the following characters: letter, digit, space, apostrophe, underscore, period, backslash, dash.</p>
Direct Forwarding	<p>Select this checkbox to specify that the adapter will forward all messages directly to the Vocera Voice Server.</p> <p>When selected, the Override DND field displays.</p>
Override DND	<p>Select an option in the dropdown list to determine how the adapter will handle messages to users in DND status. Options are:</p> <ul style="list-style-type: none"> • Do not block messages for users in DND • Block non-urgent messages for users in DND • Block all messages for users in DND <p>This field displays when the Direct Forwarding checkbox is selected.</p>
Report Non-Matching Messages as Audit Events	<p>Select this checkbox to specify that an audit event should be recorded for received messages that do not match a message definition.</p> <p>This field is not available when the adapter is configured for direct forwarding (the above Direct Forwarding checkbox is selected).</p>

There must be at least one Message Type configured. Message Types can be added and cloned. When the configuration contains multiple Message Types, they can be deleted and reordered via drag and drop. The Message Types are part of the exported settings. Message Types are not available when the adapter is configured for direct forwarding.

Message Types Configuration Field	Description
Reference Name	Enter a name to use for the new Message Type, e.g., in audit messages.
Active	Select this checkbox to use the configured Message Type. Message Types are ignored by the adapter if not active.
Discard Message	<p>Select this checkbox to discard the message without processing it.</p> <p>Matched messages are treated (except for auditing) as if they did not match any message type. Discarding Message Types may be created for the purpose of filtering them from the audit log.</p>
Starting Dataset	Select the dataset from which all paths/expressions are calculated and into which the message's data should be stored. Not available for discarding message types; otherwise, this field is required.
Message Regex	<p>Enter a regular expression to capture values from the Message Data of a message received from a VMI endpoint, after any decoding.</p> <p>See Understanding Regular Expressions (Regex) on page 16 for details.</p> <p>This is used to determine which Message Type matches the message. Not available for discarding message types; otherwise, this field is required.</p>

Message Types Configuration Field	Description
Message Mapping	Enter one or more attributes or attribute paths to be filled with data from the Message Regex field configuration, specifying how to store its information relative to the starting dataset. One entry per line. Not available for discarding message types; otherwise, this field is required.
Message Key Path	Enter the location into which to store the "global identifier" for the message so that responses and status updates can be sent. Not available for discarding message types; otherwise, this field is required.
Recipient Path	Enter the location into which to store the recipient ID specified in the message.
Priority Path	Enter the location into which to store the priority specified in the message.
Callback Number Path	Enter the location into which to store the callback number specified in the message.
Ringtone Path	Enter the location into which to store the ringtone path specified in the message.
Link for Responses	Enter the link to the Responses dataset where the matching responses will be stored. This field is optional. If configured, the following fields will display.
Report Non-Matching Responses as Audit Events	Check this box to create an audit log entry when a message contains responses but fails to successfully match one or more of the specified response types. This field is only available if Link for Responses is specified. Optional.
Response Regex	Enter the regex to match a response type. This field is only available if Link for Responses is specified. Optional.
Response Link	Enter the name of the link on the Responses dataset where the response value will be stored. This field is only available if Link for Responses is specified. Optional.

6. Select one of the available options to exit the adapter configuration page. See [Saving an Adapter](#) on page 41 for details.

Understanding Regular Expressions (Regex)

Adapters uses regular expressions (Regex) when parsing incoming messages for storage in a designated dataset in the Data Manager. This page contains an explanation of Regex, describes methods to specify Regex mappings, and provides a quick reference table of operators.

Incoming message data is processed in order to store information from a nurse call system and may later be used by the Workflow Engine to display a message on the end user's device. For example, the Vocera NaviCare Adapter uses Regex mappings configured in the Message Type settings to capture alert data sent by the NaviCare nurse call system.

This document will discuss [Literal Expressions](#), [Statements of Equality](#), and [Global Variables](#).

General Guideline for Regular Expressions

When building a Regex for a facility, be sure to keep the expression as simple as possible while still meeting the needs of the facility. Performance issues, including delays in Alerts, can occur when overly complex Regex strings are written.

The system enforces a maximum processing time limit of five seconds to ensure that CPU loads are not significantly increased by overcomplicated Regex strings. A string that exceeds the threshold will generate an audit event and will not match any results.



Warning: Avoid building extremely complex Regex functions, as performance issues may result.

For example, preprocessing rules might contain inefficient Regex with nested ungreedy matchers such as `(.*)` that result in excess load on the system.

Below is an example of inefficient Regex for a preprocessor rule:

```
(OBR(\|.*?){7}.?)(\d){4}(\d){2}(\d){2}(\d){2}(\d){2}
```

This example could be expressed more efficiently as the following:

```
"OBR(\|.*){7}.*(\d){4}(\d){2}(\d){2}(\d){2}(\d){2}(\d){2}"
```

Literal Expressions

Regex describes a search pattern, similar to the way `*.txt` is used to find text files in a file management system. An adapter that uses Message Types to parse incoming message data will define Regex fields to describe the data pattern to match, and a corresponding mapping which describes the attribute expressions to store the data. Each segment in the Regex field corresponds to one line in the Regex Mapping field.

The adapter expects to find data in the defined pattern for processing; if no match is made, the message is not processed. A number of Message Types, with Regex mappings, have to be created to address each and every format or combination of data that the implementation will need to handle.

In this example, the Regex `(\d++(\d+)\+(1|2))s+(.+)s+(.)` maps to the following attribute expressions:

- `bed.pillow_number`
- `bed.room.room_number`
- `bed.bed_number`
- `alert_type`

Regex:	<code>(\d++(\d+)\+(1 2))s+(.+)s+(.)</code>
Regex Mapping:	<code>bed.pillow_number</code> <code>bed.room.room_number</code> <code>bed.bed_number</code> <code>alert_type</code>

This Regex mapping results in stored data, which may be used to display on the user device. The Regex `(\d++(\d+)\+(1|2))s+(.+)s+(.)` may result in a user's device displaying "100:103:1 Code Blue" due to the stored data captured by the following segments.

- "100" is stored by the first segment and mapping, and is the pillow number.
- "103" is stored by the second segment and mapping, and is the room number.

- "1" is stored by the third segment and mapping, and is the bed number. Bed numbers depend on how many beds are in the room.
- "Code Blue" is stored by the fourth segment and mapping, and is the alert type triggered. Alerts are preconfigured to cover conditions ranging from "Code Blue" to "Patient needs water" in a clinical setting.

Literal Expressions Explanation

Regex provides a method of pattern matching where the system expects to find the designated characters in a particular position in the incoming message data. Regex is written in a formal language that can be interpreted by a regular expression processor, which is a program that either serves as a parser generator or examines text and identifies parts that match the provided specification.

Regular expressions have a syntax in which a few characters are special constructs, called metacharacters, and the rest are ordinary. An ordinary character matches that same character and nothing else. The metacharacters are reserved for special search terms and to use one of them as a literal in a Regex, it must be escaped with a backslash (\) character.

There are 11 special or metacharacters: the opening square bracket [, the backslash \, the caret ^, the dollar sign \$, the period or dot ., the vertical bar or pipe symbol |, the question mark ?, the asterisk or star *, the plus sign +, the opening round bracket (and the closing round bracket). Any two regular expressions can be concatenated.

The Regex example `(\d+\+(\d+)\+(1|2))s+(.+)` is described by its concatenated segments:

- The `(\d+\)` segment matches the `bed.pillow_number` mapping, which stores digits in the message data that pertain to the pillow number of the patient.
- The `(\d+)\+` segment matches the `bed.room.room_number` mapping, which stores digits in the message data that pertain to the room number of the patient.
- The `(1|2))` segment matches the `bed.bed_number` mapping, which stores digits 1 or 2 in the message data to associate the alert to bed one or two in that room.
- The `s+` tells Vocera Platform to expect any number of spaces after the group, but there must be at least one space.
- The `(.+)` segment matches the `alert_type` mapping. This segment catches any other information that is not recognized by the rest of the string.

Statements of Equality

Statements of equality are an alternative way to specify Regex mappings. In a statement of equality mapping, the left-hand side of the equality statement is the attribute path, while the right-hand side is the value of the attribute path. The right-hand side should use numbered captured groups (e.g., \$1) to reference elements matched, but may also include literal strings. When any item contains an equals sign, then every item is expected to be a statement of equality. If the item is not formatted as a statement of equality (i.e., no equals sign or more than one attribute path or value), then an error message will be written to the audit log indicating that the processing failed for this message type.

In this example, the Regex `((\w+):(\w+))s+(.+)` maps to the following attribute expressions:

- `bed.room.facility.name`
- `bed.pillow_number`
- `bed.room.room_number`
- `bed.bed_number`
- `alert_type`

Regex:	<code>((\w+):(\w+))\s+(. +)</code>
Regex Mapping:	<pre> bed.room.facility.name=General bed.pillow_number=\$1 bed.room.room_number=\$2 bed.bed_number=\$3 alert_type=\$4 </pre>

This Regex mapping represents how the information is sent to Vocera Platform by NaviCare. Using the mapping of `((\w+):(\w+))\s+(. +)` the information comes to Vocera Platform as General301:1 Code Blue.

A diagram of the expression is: `((\w+):(\w+))\s+(. +)`

Pillow Number is equal to `bed.pillow_number=$1`

Room Number is equal to `bed.room.room_number=$2`

Bed Number is equal to `bed.bed_number=$3`

Alert Type is equal to `alert_type=$4`

- "General" is the name of the facility. In the example above General has been hardcoded into the mapping. The string from NaviCare must include General or the message will not be parsed correctly by Vocera Platform.
- The first section of the mapping is the group `((\w+):(\w+))` and represents the Pillow Number. The Pillow Number is derived by taking the Room Number and the Bed Number and separating them with a colon ":". Using the example above, the Pillow number is 301:1
- Contained within the group of `((\w+):(\w+))`, the first segment is `(\w+)` which is the Room Number. The example above tells Vocera Platform that the room number is 301.
- The colon ":" is used to separate the Room Number from the Bed Number.
- The second part of the group is located after the colon ":" and is `(\w+)` which is the Bed Number. The example above tells Vocera Platform that the bed number is 1. Bed numbers depend on how many beds are in the room.
- The `\s+` tells Vocera Platform to expect any number of spaces after the group, but there must be at least one space.
- The final segment of the mapping is `(. +)`. This tells Vocera Platform to expect any number of characters, but there must be at least one character. This is the alert type that is triggered. In our example, the alert type is Code Blue. Alerts are preconfigured to cover the clinical conditions needed by the facility.

Statements of Equality Explanation

Regex provides a method of pattern matching where the system expects to find the designated characters in a particular position in the incoming message data. Regex is written in a formal language that can be interpreted by a regular expression processor, which is a program that either serves as a parser generator or examines text and identifies parts that match the provided specification.

Regular expressions have a syntax in which a few characters are special constructs, called metacharacters, and the rest are ordinary. An ordinary character matches that same character and nothing else. The metacharacters are reserved for special search terms and to use one of them as a literal in a Regex, it must be escaped with a backslash (`\`) character.

There are 11 special or metacharacters: the opening square bracket `[`, the backslash `\`, the caret `^`, the dollar sign `$`, the period or dot `.`, the vertical bar or pipe symbol `|`, the question mark `?`, the asterisk or star `*`, the plus sign `+`, the opening round bracket (and the closing round bracket). Any two regular expressions can be concatenated.

The Regex example `((\w+):(\w+))\s+(. +)` is described by its concatenated segments:

- The `((\w+):(\w+))` segment matches the `bed.pillow_number=$1` mapping, which stores the Room Number:Bed Number.

- The (\w+) segment matches the bed.room.room_number=\$2 mapping, which stores digits in the message data that pertain to the room number of the patient.
- The (\w+) segment matches the bed.bed_number=\$3 mapping, which stores digits in the message data to associate the alert to bed number one or two in that room.
- The (.) segment matches the alert_type=\$4 mapping. This segment stores the alert type information. In our example, the alert type is Code Blue. Alerts are preconfigured to cover the clinical conditions needed by the facility.

Global Variables

A Global Variable represents a capture group that has a fixed set of modifiers. These variables define ways to transform and format data that is stored in the Vocera Platform appliance.

Vocera Platform has created two global variables; **now** which evaluates to the current time of the systems time zone, and **today** which evaluates to the current date. To utilize these variables, select a modifier from the list below.

To format these variables, the modifier must be to the right side of the global variable. For example, selecting the global variable of **now** will add the current time of the system time zone. To format that time as HH:mm, use the modifier of `as_mil_time`. The full global variable is: `#{now.as_mil_time}`.

The modifiers below are also defined and may be used to format or augment the base value of the date/time group, now by adding ".modifier", for example `#{now.as_mil_time}`.

Modifier	Definition
<code>as_date</code>	The date portion of a date/time returned in the format MM/DD/YYYY.
<code>as_iso</code>	A time formatted using ISO8601. The format is YYYY-MM-DD'T'hh:mm:ss.sssTZD
<code>as_iso_date</code>	The date portion of a date/time using ISO8601. The format is YYYY-MM-DD.
<code>as_mil_time</code>	The time portion of a date/time in the form 'HH:mm' (where HH is 0-23).
<code>as_mil_time_sec</code>	The time portion of a date/time in the form 'HH:mm:ss' (where HH is 0-23).
<code>as_time</code>	The time portion of a date/time in the form 'hh:mm AM/PM'
<code>as_time_sec</code>	The time portion of a date/time in the form 'hh:mm:ss AM/PM'.
<code>as_weekday</code>	Returns the name of the week part of a date.
<code>with_increment</code>	Returns the succeeding day of the value being modified; may be used multiple times.
<code>with_decrement</code>	Returns the preceding day of the value being modified; may be used multiple times.

Only a subset of the above modifiers may be used to format or augment the base value of the date group, {today} by adding ".modifier", for example `#{today.as_date}`.

Modifier	Definition
<code>as_date</code>	The date portion of a date/time returned in the format MM/DD/YYYY.
<code>as_iso_date</code>	The date portion of a date/time using ISO8601. The format is YYYY-MM-DD.
<code>as_weekday</code>	Returns the name of the week part of a date.

Modifier	Definition
with_increment	Returns the succeeding day of the value being modified; may be used multiple times.
with_decrement	Returns the preceding day of the value being modified; may be used multiple times.

Global Variables Example

The global variables and modifiers that are defined above are used to store a date, time, or date and time stamp on any alert. The following example shows how to use the literal expression, the statement of equality, and the global variables.

The Regex example `((\w+):(\w+))\s+(.+)` maps to the following attributes:

- bed.room.facility.name
- bed.pillow_number
- bed.room.room_number
- bed.bed_number
- alert_type
- clinical.alarm_time
- clinical_id

Regex:	<code>((\w+):(\w+))\s+(.+) </code>
Regex Mapping:	<pre> bed.room.facility.name=General bed.pillow_number=\$1 bed.room.room_number=\$2 bed.bed_number=\$3 alert_type=\$4\$ clinical.alarm_time=#{now} clinical_id=MR:General\$1\$2\$3\$4#{now.as_iso} </pre>

This Regex mapping represents how the information is sent to Vocera Platform by the vendor. Using the mapping of `((\w+):(\w+))\s+(.+)` , the information comes to Vocera Platform as General301:1 Code Blue.

- "General" is the name of the facility. In the example above General has been hardcoded into the mapping. The string from the vendor must include General or the message will not be parsed correctly by Vocera Platform.
- The first section of the mapping is the group `((\w+):(\w+))` and represents the Pillow Number. The Pillow Number is derived by taking the Room Number and the Bed Number and separating them with a colon. Using the example above, the Pillow number is 301:1.
- Contained within the group of `((\w+):(\w+))`, the first section is `(\w+)` which is the Room Number. The example above tells Vocera Platform that the room number is 301.
- The ":" is used to separate the Room Number from the Bed Number.
- The second part of the group is located after the ":" and is `(\w+)` which is the Bed Number. The example above tells Vocera Platform that the bed number is 1. Bed numbers depend on how many beds are in the room.
- The `\s+` tells Vocera Platform to expect any number of spaces after the group, but there must be at least one space.
- The next piece to the mapping is `(.+)` . This tells Vocera Platform to expect any number of characters, but there must be at least one character. This is the alert type that is triggered. In our example the alert type is Code Blue. Alerts are preconfigured to cover conditions ranging from "Code Blue" to "Patient needs water" in a clinical setting.
- The `\s+` tells Vocera Platform to expect any number of spaces after the alert, but there must be at least one space.
- The `clinical.alarm_time` will store the time the alert was received by Vocera Platform, according to the time zone set in the appliance.

- The `clinical.id` will store the type of device from which the alert was received, (MR), the name of the facility, (General), all of the alert information, (\$1\$2\$3\$4), and transform the time to a date/time formatted using ISO8601, (`# {now.as_iso}`).

Regular Expression Quick Reference

Use the following list of Regular Expression operators to help create useful mappings in a Vocera Platform implementation.

Regular Expressions Anchors

<code>^</code>	Start of string, or start of line in multi-line pattern
<code>\A</code>	Start of string
<code>\$</code>	End of string, or end of line in multi-line pattern
<code>\Z</code>	End of string
<code>\b</code>	Word boundary
<code>\B</code>	Not word boundary
<code>\<</code>	Start of word
<code>\></code>	End of word

Regular Expressions Character Classes

<code>\c</code>	Control character
<code>\s</code>	White space
<code>\S</code>	Not white space
<code>\d</code>	Digit
<code>\D</code>	Not digit
<code>\w</code>	Word
<code>\W</code>	Not word
<code>\x</code>	Hexadecimal digit
<code>\O</code>	Octal digit

Regular Expressions POSIX

<code>[[:upper:]]</code>	Upper case letters
<code>[[:lower:]]</code>	Lower case letters
<code>[[:alpha:]]</code>	All letters
<code>[[:alnum:]]</code>	Digits and letters
<code>[[:digit:]]</code>	Digits
<code>[[:xdigit:]]</code>	Hexadecimal digits

[:punct:]	Punctuation
[:blank:]	Space and tab
[:space:]	Blank characters
[:cntrl:]	Control characters
[:graph:]	Printed characters
[:print:]	Printed characters and spaces
[:word:]	Digits, letters and underscore

Regular Expressions Assertions

?=	Lookahead assertion
?!	Negative lookahead
?<=	Lookbehind assertion
?!= or ?<!	Negative lookbehind
?>	Once-only Subexpression
?()	Condition [if then]
?()	Condition [if then else]
?#	Comment

Regular Expressions Quantifiers

Add a ? to a quantifier to make it ungreedy.

*	0 or more
+	1 or more
?	0 or 1
{3}	Exactly 3
{3,}	3 or more
{3,5}	3, 4 or 5

Regular Expressions Escape Sequences

"Escaping" is a way of treating characters which have a special meaning in regular expressions literally, rather than as special characters.

\	Escape following character
\Q	Begin literal sequence
\E	End literal sequence

Regular Expression Common Metacharacters

The escape character is usually the backslash - \.

^	[.
\$	{	*
(\	+
)		?
<	>	

Regular Expressions Special Characters

\n	New line
\r	Carriage return
\t	Tab
\v	Vertical tab
\f	Form feed
\xxx	Octal character xxx
\xhh	Hex character hh

Regular Expressions Groups and Ranges

Ranges are inclusive.

.	Any character except new line (\n)
(a b)	a or b
(...)	Group
(?:...)	Passive (non-capturing) group
[abc]	Range (a or b or c)
[^abc]	Not a or b or c
[a-q]	Letter from a to q
[A-Q]	Upper case letter from A to Q
[0-7]	Digit from 0 to 7
\n	nth group/subpattern

Regular Expressions Pattern Modifiers

g	Global match
i	Case-insensitive

m	Multiple lines
s	Treat string as single line
x	Allow comments and white space in pattern
e	Evaluate replacement
U	Ungreedy pattern

Regular Expressions String Replacement

Some Regex implementations use \ instead of \$.

\$n	nth non-passive group
\$2	"xyz-" in / ^ (abc(xyz))\$ /
\$1	"xyz-" in / ^ (? : abc)(xyz)\$ /
\$`	Before matched string
\$'	After matched string
\$+	Last matched string
\$&	Entire matched string

Ruby Editor Reference

Use the Ruby Regular Expression Editor for troubleshooting: <http://rubular.com/>

Conclusion

This concludes the discussion of Regular Expressions that may be used in a Vocera Platform implementation.

Working with the Vocera Incoming VMI Adapter Rules

This page describes the fields available to configure dataset rules for the Vocera Incoming VMI Adapter.

Rules can be configured on a dataset to send a message back to the third party integrator, based on the parameters and rule action provided in the Adapter Settings. When triggered, the Vocera Incoming VMI Adapter rules allow for sending status updates and handling responses.

See the [Vocera Platform Administration Guide](#) for information about working with rules. See [Configuring a Vocera Incoming VMI Adapter](#) on page 11 for information about the adapter settings.

In the Adapter Settings, configure the Rule Settings fields to manage the selected Rule Action. This adapter defines two rule actions, each with its own parameters, plus two parameters common to both rule actions. The configuration fields are described in the table that follows each displayed rule action below.

Send Response Rule Action

Select the Send Response rule action to indicate a response to send to the original message. This rule action will be triggered on the Responses dataset when a condition configured to accept or decline the alert is matched.

Adapter Settings

The information provided is either invalid or incomplete.

Rule Settings

Rule Action:

Send Response

Message Key:

Responding User:

Response:

Save

Reset

Cancel

Adapter Setting	Description
Rule Action	Send Response
Message Key	This field specifies the global message ID of the original message. This field is required.
Responding User	This field specifies the user for the message response. This field is required.
Response	Specify the response content in the provided text field. This field is required. There is no attempt to enforce the use of an MCR choice.

Send Status Update Rule Action

Select this rule action to indicate a delivery status change for the original message. This rule action will be triggered by an event that describes the state of a delivery which matches a configured rule on the DeliveryHistory dataset.

Adapter Settings

The information provided is either invalid or incomplete.

Rule Settings

Rule Action: Send Status Update

Message Key:

Affected User:

Status: Delivered

Save
Reset
Cancel

Adapter Setting	Description
Rule Action	Send Status Update
Message Key	This field specifies the global message ID of the original message. This field is required.
Affected User	This field specifies the user for the message update. This field is required.
Status	Specify the changed delivery status to return for the original message. This field is required. Status options provided in the dropdown list are Read, Delivered, Callback started, Callback ended.

Multiple Choice Response (MCR) Matching

This page describes the MCR functionality at a high level for your understanding, and highlights the necessary configurations.

In some integrations, some adapters, such as Vocera Incoming WCTP Adapter or Vocera Incoming VMI Adapter, can be configured to handle an external system's multiple and arbitrary possible responses to an alert. These adapters, which use protocols that support multiple choice response (MCR) messages, may also be configured to allow the end user to select among multiple possible responses to an alert on their device. This functionality requires manual integration in the standard Vocera solution.

This page describes the MCR functionality at a high level for your understanding, and highlights the necessary configurations. It shows how the adapters for those protocols define the message types and rules to support responding to messages processed as events. It also shows how display values for responses received from a remote system can be displayed in events. Finally, it shows storing responses to support message forwarding where the remote message and all specified options can be forwarded to the user's device.

The standard Vocera Platform EMDAN alerting process provides Accept and Decline responses to an alert. An external system may require a different response option (such as Yes and No) or even a dynamically generated response. Furthermore, a Vocera Platform EMDAN integration may be required to provide the end user with the responses specified by the external sending system. This may occur when an existing Vocera Platform Voice Service integration is upgraded to Vocera Platform EMDAN and that customer's VMI-based user experience must be maintained, which includes responses other than Accept and Decline.

The MCR functionality in this page includes description of:

- AlertMetaData and ResponseOptions datasets which are used to store, send, and reply, using the responses provided by the originating external system.
- Message forwarding where the Vocera Platform simply forwards the message, including the pre-defined responses, to the user's device, and then forwards the response back to the originating system, in order to provide a more message-oriented solution.
- Workflows which present to the end user the response options that were originally provided by the external source system.

Design Overview

The following features must be created on the Vocera system if they do not exist in the customer's implementation.

A ResponseOptions dataset on the Vocera system contains each option for each message received by the MCR-capable adapters. The dataset contains the value to send for that response (stored in the response_value attribute), the display text for that value (stored in the display_value attribute), and an index for the response within the list of responses for the message (stored in the response_index attribute).

Message types are configured on the MCR-capable adapters. The message type configuration requires a path relative to the starting dataset which stores a "message key" that uniquely identifies the message. The message key is used to identify the message so that data for the response can be retrieved.

The message type configuration also allows matching responses to a regular expression. The match process takes a path to a to-one link attribute for the ResponseOptions dataset which is used to link the matching response to the record created by the message type mapping.

The standard Vocera Platform EMDAN solution design requires some additional configuration for the MCR-capable adapters to function. You will have to create a one-to-one link attribute from the Alerts dataset to the AlertMetaData dataset, and name the link meta_data. The message type will store the message key value in the meta_data.message_key path, so the alert record is linked to the adapter's message data. You will also need to create two many-to-one link attributes from the Alerts dataset to the ResponseOptions dataset, and name these links accept_response and decline_response. These link attributes are used by message types in the matching process to identify the response to use for Accept and the response to use for Decline. You can follow this pattern to create additional link attributes for other responses.

Rules are configured on a dataset to deliver event responses back to the originating external system. These rules should be conditioned on the user's response and the existence of the link for that response. When the response is Accept, the rule should send the accepted_response.response_value for the linked alert back to the external system. When the response is Decline, the rule should send the declined_response.response_value for the linked alert back to the external system.

In order to allow end user devices to use the display value specified by the external originating system for event responses, follow the same paths on the rule or workflow that sends the alert to the device to find the correct display value.

In order to support the "message forwarding" scenario functionality:

- Create a many-to-many link attribute named response_options from the Alerts dataset to the ResponseOptions datasets. This link stores all responses received by the MCR-capable adapter. This is useful for sending a group of responses to an adapter that can accept a list of responses, such as the outbound Vocera VMI adapter, as well as useful for displaying received responses in a workflow page.
- Vocera adapters used for message forwarding must be configured to display one value and store another value, so that the actual response_value attribute can be stored in the response.
- The originating system will be sent a response containing the value that was stored in the ResponseOptions dataset.
- An MCR-capable adapter will have a configurable link to store all of the responses for a message type, and that link can be re-used by any adapter which allows for the sending of a list of response options to an endpoint.

Event Handling Design

The MCR-capable functionality is based on the existing Vocera Platform EMDAN solution. It uses the standard alert processing design, including the existing rules, adapter configurations, and workflows for escalating alerts, sending alerts, and receiving responses.

The primary changes are in the processes that interface with the new MCR-capable adapters:

- Initial message processing (message type definition in the adapters)
- Sending the response back to the originator (rule definition on the datasets)

An exception to these primary changes occurs when the actual values requested by the originating source system are to be sent as responses to the endpoint device. See **Using Requested Display Values** below for details.

The examples in this event handling design assume the following scenario:

- The originating system is sending messages via the Vocera Incoming WCTP Adapter.
- The incoming message represents a "nurse call event".
- The escalation is controlled by the originating system.
- The event recipient is controlled by the originating system.
- The recipient has a Cisco workflow phone.

Other scenarios should work in a similar manner. However, there are a couple of special cases that need further mention:

- If Vocera Platform EMDAN is escalating the alert rather than the originating system, a decision needs to be made at which point(s) to send response(s) to the originating system. Following are the most likely decision points:
 - Sending an accept response immediately after the request is received. This is likely triggered by the creation (or escalation to primary) of the alert record, but the rule configuration is much the same as described below. See **Returning a Response** below for details.
 - Sending an accept response for each accept response received from an end user device. This can be implemented using the same rule(s) as the accept response for an alert escalated by the originating system. (Decline responses on declines and escalations could also be sent, but this seems less likely to be useful.)
 - Sending a decline response when the last escalation level declines or times out. This would trigger as if it were a final escalation, using the same rule configuration as below. See **Returning a Response** below for details.
- If there is a desire to use the "display" responses specified by the originating system, this can be done using the accept_response and decline_response link attributes. See **Dataset Support** below for details.

Dataset Support

In order to support sending responses after a failover, each adapter will utilize a table in which to store critical information about received messages needed to send responses and status updates. The AlertMetaData and ResponseOptions datasets are required by the MCR-capable adapters and must be created if they do not exist in the customer implementation. The Alerts links must be manually added to the AlertMetaData and ResponseOptions datasets.

The **AlertMetaData** dataset is used by all MCR-capable adapters to store additional alerting options that should be persisted across a failover. The AlertMetaData dataset must have a locally unique key, a single string "message key", which is required to begin with the interface reference name followed by a ":".

The **ResponseOptions** dataset is used by the adapters to store response options. The ResponseOptions dataset provides the following attributes:

- response_value attribute: contains the value to be sent back to the originating system.
- display_value attribute: contains the value that the originating system requested be displayed to users.
- response_index attribute: contains the index of the response within the list of responses as specified by the originating system. The first response is assigned 1, the second 2, etc.

The **Alerts** dataset requires the following additional link attributes be created:

- meta_data link attribute: a one-to-one link with the AlertMetaData dataset indicating the message that triggered the alert.
- accept_response link attribute: a many-to-one link with the ResponseOptions dataset indicating the response to be used if the alert is accepted.
- decline_response link attribute: a many-to-one link with the ResponseOptions dataset indicating the response to be used if the alert is declined.
- response_options link attribute: a many-to-many link with the ResponseOptions dataset indicating all the responses provided with the message.

Adapter Message Type Definition

Message type definition is similar to the configurations defined on other adapters receiving alerts, with the following significant differences:

- In order to link to the AlertMetaData record for the triggering message, the "message key" for the message should be stored in the meta_data.message_key field of the alert. In the example here, it is stored in the NurseCallMessages dataset for the particular alert, even though NurseCalls is the starting dataset, since the NurseCallMessages dataset is the triggering record for the alert.
- "Response type" matches must be configured for the accept_response attribute, and, if needed, the decline_response attribute for the record. Again, this example actually links to the created NurseCalls record.

Message Types
[Add]

▶ clinicals, (\w+)
 Not Active

▼ Alert Match, (.+)
 Active

Reference Name:

Active:
☒

Discard Message:
☐

Starting Dataset:

Message Regex:

Message Mapping:

Message Key Path:

Sender ID Path:

Recipient ID Path:

Priority Path:

Link for Responses :

Response Type Matching

Report Non-Matching Responses as Audit Events :
☒

Response Regex :	Response Link :	[Add]
<input type="text" value=".*ACCEPT.* ..*OKAY.*"/>	<input type="text" value="accept_response"/>	[Remove]
<input type="text" value=".*DECLINE.* ..*NO.*"/>	<input type="text" value="decline_response"/>	[Remove]

[Clone] [Remove]

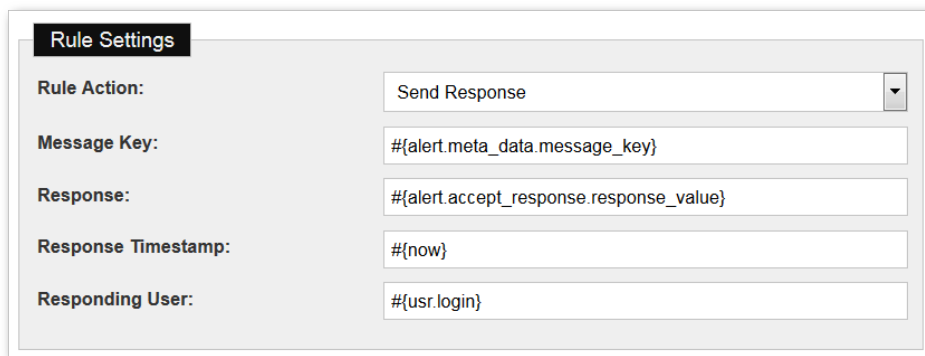
This example is effectively a copy of the standard TAP externally escalated Nurse Call message, with the additional support for the multi-response messages. Note the presence of the "Link for Responses" configuration option. In a "message forwarding" scenario, this is used to specify all of the Alert record's "responses".

Returning a Response

To return a response to the originating system, a dataset rule configured for the MCR-capable adapter is used that fires when:

- The correct condition for sending the given response exists. If the response is being triggered by an end user response, this may be a "Response Is Accept" or "Response Is Decline" condition on the Responses dataset.
- The appropriate response link (alert.accept_response or alert.decline_response) is non-null.
- The appropriate meta_data link (alert.meta_data.message_key) is non-null.
- Optionally, for instance if there are multiple multi-response adapter instances, there might need to be a condition to check the interface reference name stored in the metadata (alert.meta_data.interface), or some other mechanism to fire the rule for the correct adapter instance.

The following shows an example configuration for a rule on the Responses dataset. The important values are the Message Key and Response fields; the other values shown are more specific to the adapter, in this example the Vocera Incoming WCTP Adapter.



Using Requested Display Values

The accepted_response and declined_response links (or similarly defined links) can also be used to display the values requested by the originating system, instead of the standard values (e.g., Accept and Decline) currently used in the Vocera Platform EMDAN solution. The implementation details depend on whether the display is controlled by the rule (e.g., Badges with XMPP) or by a workflow page (e.g., Cisco devices). In either case, the value to be stored if the response is selected cannot be changed (to prevent breaking other parts of the Vocera Platform EMDAN workflow for event escalations), so the rules to send the responses do not change.

Note that the current outbound Vocera VMI integration cannot display the values requested by the originating system; VMI cannot specify a value to store that is separate from the value to display. Also, using the Vocera XMPP Adapter, this will not work in the Mobile App which does not allow the display value to be overridden.

Workflow

In the standard Vocera Platform EMDAN solution, the display value for the "Accept" button is embedded in the code, in part to prevent breaking the Vocera Platform EMDAN workflow for event escalations. However, the accept response's display value can be used instead.

In this example, a link in the workflow is updated to use a display value for the "Accept" button that is specified by the originating system:

Enter a label for this link:

`#(NurseCallMessages.accept_response.display_value)`

Enter the url for this link (e.g. <http://www.google.com>):

`/ei/wu/AlertsNCM/accept?Alerts.id=#{NurseCallMessages.id}&Alerts.responses.action=Accepted&Alerts.responses.line=#{line_ap`

[Save changes](#) or [Cancel](#)

Note that there is a potential issue because the workflow does not allow much conditional display (e.g., use the `display_value` if set, otherwise use "Accept"). This is generally an issue if alerts of a particular type are coming from multiple systems, in which case, this is not recommended.

Rules

The following example shows how to do this, in this case using the Vocera XMPP Adapter and passing the requested value to the badges:

Accept Badge Phrases:

`#(accept_response.display_value)`

For rules, if there are cases where the `display_value` would not be available, then separate rules would be needed for the default value, probably differentiated by conditions where the value is available and where the value is not available.

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-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                               Size
Version                               Repository
=====
Installing:
extension-navicare-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-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!

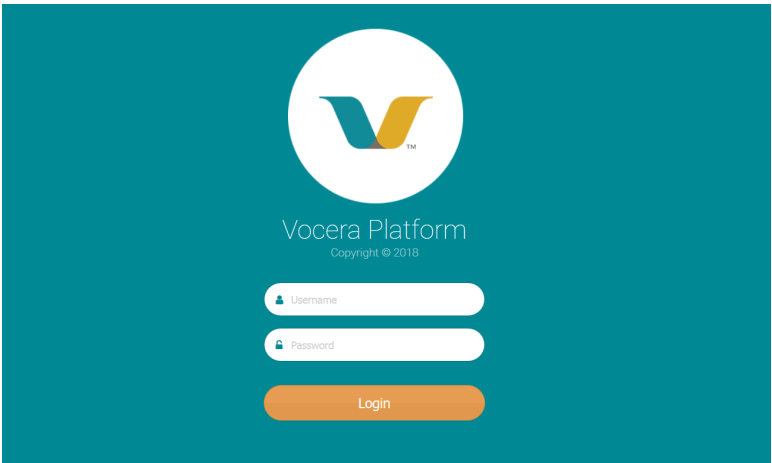
5. This completes the steps to install an adapter.

Navigating the Vocera Platform Adapters

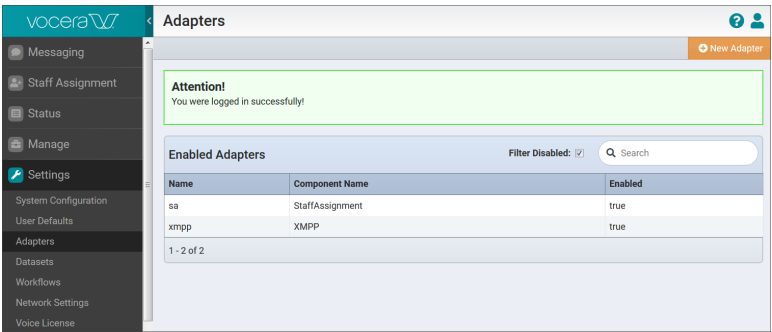
Access the Adapters tab and use the filter or search tools to display a specific adapter.

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.



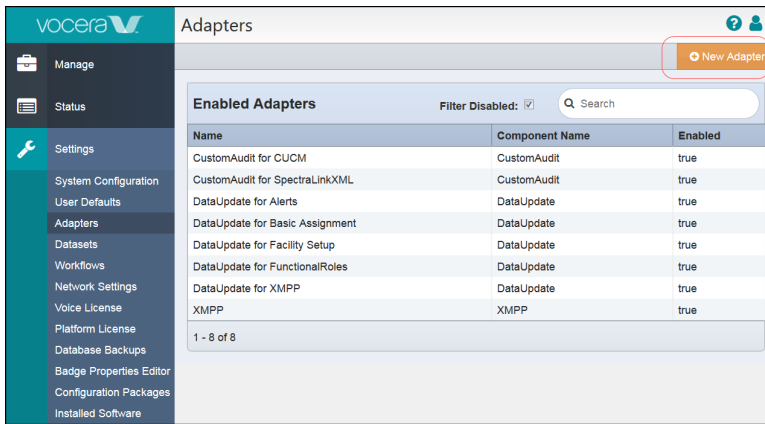
2. Select **Settings > Adapters** in the navigation menu.



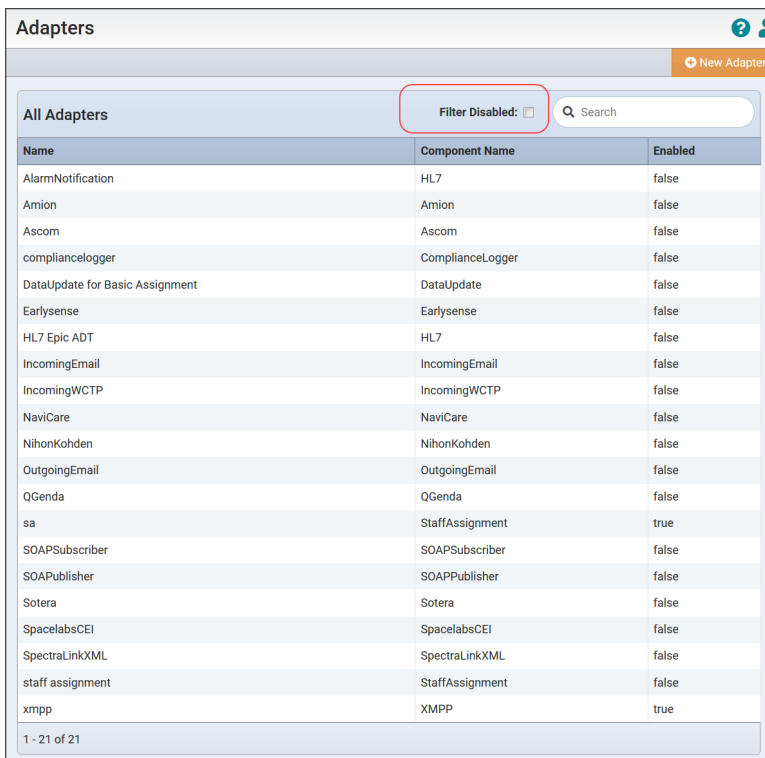
- The **Adapters** page displays.
3. Select an adapter to work with from the list displayed in the grid, or select the **New Adapter** Action option to create a new adapter.

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.

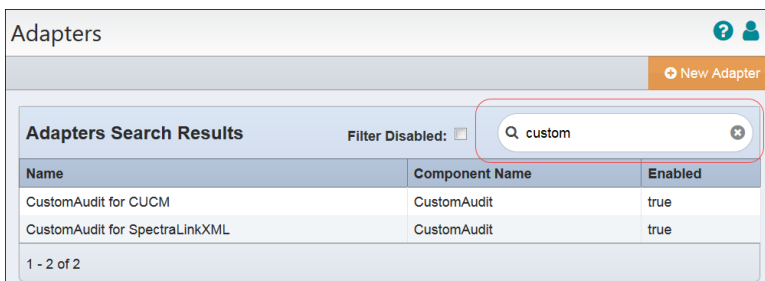
The bottom row of the grid reports the number of adapters displayed, of the available adapters. The Filter Disabled box is checked by default, and displays only the enabled adapters that are configured on the Vocera Platform.



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.

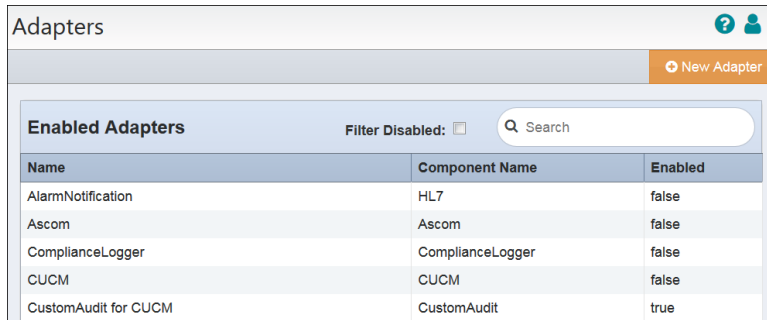


Editing an Adapter

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

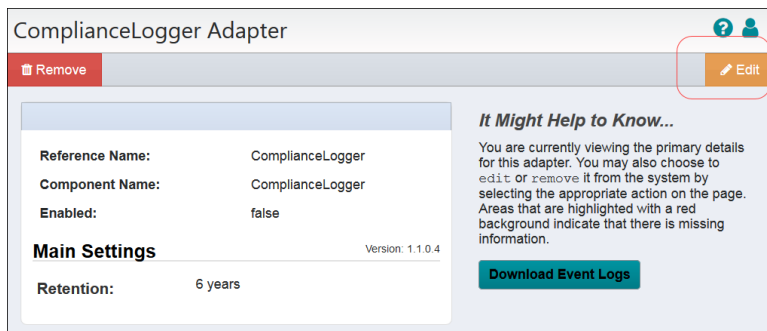
This page is used by all the adapter guides, and therefore, the adapter used as an example here may not be the adapter that you are working with currently.

1. Access the Vocera Platform Web Console and navigate to the adapters.
See [Navigating the Vocera Platform Adapters](#) on page 37 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

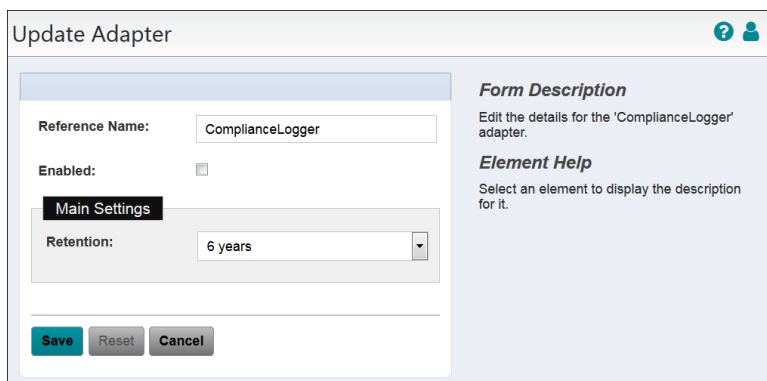
Main Settings Version: 1.1.0.4
Retention: 6 years

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](#)

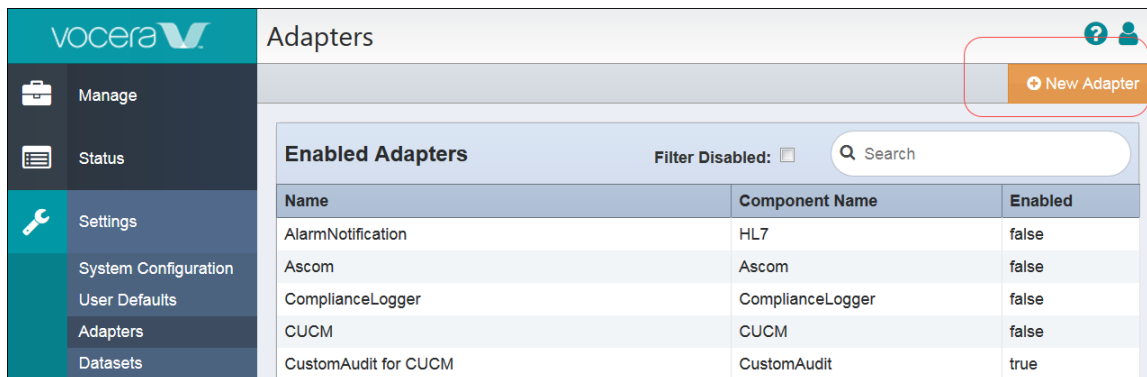
5. Select one of the options to exit the **Update Adapter** page. See [Saving an Adapter](#) on page 41 for details.

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 37 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 37 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

[?](#) [User](#)

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

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

Reference Name:

Enabled: ☐

Required Datasets

Actors:

Assignments:

4. Select one of the options to exit the **Update Adapter** page. See [Saving an Adapter](#) on page 41 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 37 for instructions.
2. Select **Remove** in the Actions menu to permanently delete the adapter.

XMPP Adapter

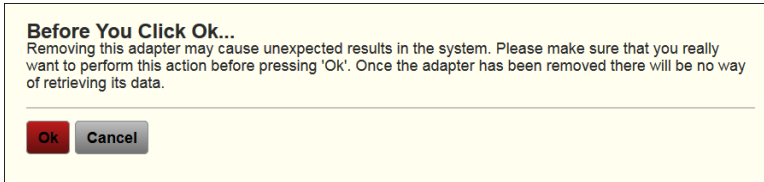
[Remove](#) [Edit](#)

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.

