

xMatters On-Demand

FOR HP BSM OPERATIONS MANAGER | SOFTWARE



(x) matters

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Join the xMatters Community: <http://support.xmatters.com>

This integration was designed and tested on an unmodified version of HP BSM Operations Manager i software, and this document describes how to configure xMatters to integrate with the default installation. If you have customized or altered your instance of HP OMi, this integration may need to be modified for your deployment. Please note that these integration changes are not part of the services offered by xMatters Client Assistance, but can be performed through xMatters's Client Success department. For more information, contact your xMatters Sales representative.

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Chapter 1: Introduction to integrations

xMatters On-Demand reduces incident response time by finding the right person to solve the problem when system outages require you to manage on-call schedules and escalations.

- **Reduce downtime:** create and automate critical incident processes to get the right people on the job.
- **Aggregate and consolidate alert views:** closed loop integration between xMatters and HP OMi provides a single view of all alerts, no matter how diverse and distributed your environment may be.
- **Engage resolution teams:** determine message recipients based on on-call schedules, including substitutions and holidays, specific skill sets, escalation priority, and more.
- **Avoid alert fatigue:** reduce the noise with targeted notifications; alerts go only to the people that need them.
- **Manage issues from anywhere:** full-featured mobile apps allow you to stay in control wherever you are.

Through communication plans, xMatters can become the voice and interface of an automation engine or intelligent application. When a management system detects something that requires attention, xMatters places phone calls, sends messages, or emails the appropriate personnel, vendors, or customers.

xMatters is also persistent, escalating through multiple devices and personnel until someone accepts responsibility or resolves the problem. Once contacted, xMatters gives the notified person instant two-way communication with the management system. Responses are executed immediately on the original management system event, enabling remote updates and resolution.

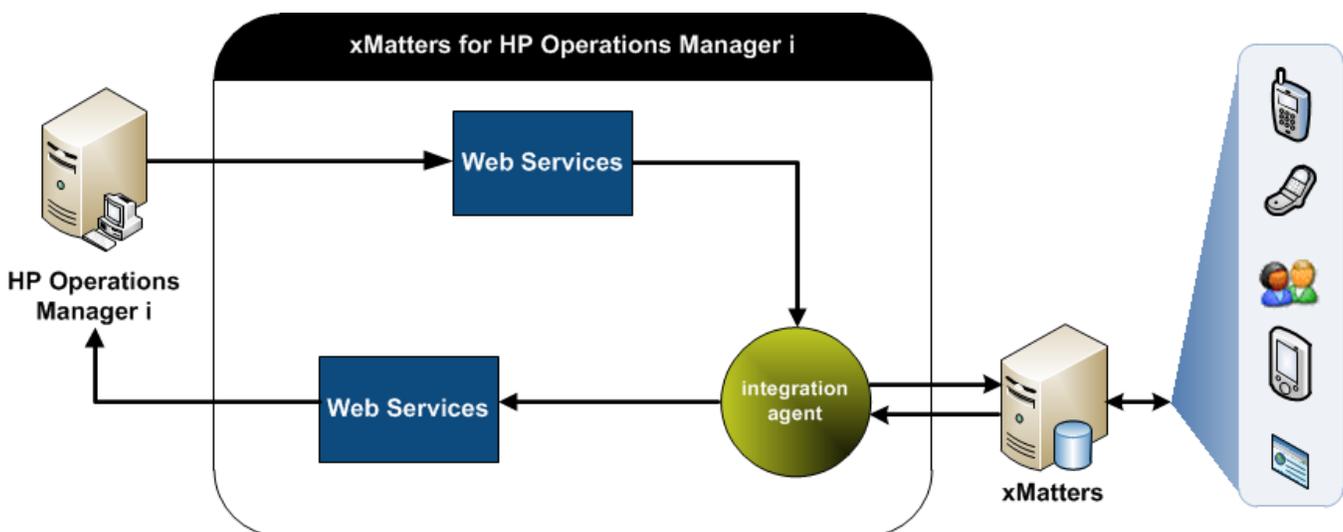
During the process, every notification, response, and action is logged in xMatters. In addition, xMatters automatically annotates the original event with status information.

1.0.1 Integration Architecture

The software components in this integration include:

- xMatters On-Demand
- HP BSM Operations Manager i software
- xMatters Integration Agent

The following diagram illustrates the software processes used by this integration:



1.1 System Requirements

The following component versions are supported by this integration, and must be installed and operating correctly prior to integration.

Integration Component	Version
xMatters On-Demand	5.5.87 or later
xMatters Integration Agent	5.1 patch 4
HP BSM Operations Manager i software	10

1.2 Conventions and Terminology

This section describes how styles are used in the document, and provides a list of definitions.

1.2.1 Conventions

Some instructions appear in the following format: **MENU** > **OPTION**; for example, **File** > **Open** means click the **File** menu, and then click the **Open** menu option.

Words in **bold** typically reference text that appears on the screen. Words in `monospace` font represent the following:

- text that must be typed into the computer
- directory and file names
- code samples

Directory paths

Except where explicitly stated, the directory paths in this document are listed in Windows format. Unix users must substitute the given paths with the Unix equivalents.

The xMatters Integration Agent installation folder is referred to throughout the documentation as `<IAHOME>`.

- On Windows systems, the default is `C:\Program Files\xmatters\integrationagent\`
- On Unix systems, the default is `/opt/xmatters/integrationagent`

1.2.2 Terminology

The following terms are used through the xMatters documentation.

Documentation terminology

Term	Meaning
Event	<p>An <i>event</i> refers to any situation or item of interest detected by the management system, and which requires attention. Event is also used to refer to the incident or situation as it progresses through the xMatters system, from injection to notification to resolution. Each event must generate at least one alert or notification.</p> <p>Event can also be a generic term used to refer to an incident, change request, message, or other specific item within the management system. Whenever possible, these situations are referred to using the management system's preferred terminology, but can also collectively be called events.</p>

Term	Meaning
Management system	A management system is any sort of monitoring or managing software that watches for events, and with which xMatters can combine; i.e., a synonym for HP OMi.
Device	The medium through which a recipient is contacted by xMatters; i.e., email, pager, phone, BlackBerry, etc.
User	In xMatters, people who can receive notifications are called "users". Each person in the xMatters system is defined by a set of user details, including ID number, user name, login password, and so on.
Group	Groups are used to collect and organize users and devices into notification schedules. For a complete explanation of groups in xMatters, see the online help, accessible from anywhere within xMatters On-Demand.

Chapter 2: Installation and Configuration

This chapter provides information about installing the xMatters On-Demand for HP BSM Operations Manager i software integration. This chapter also contains complete instructions on how to configure xMatters, HP OMi, and the integration components.

2.1 Installing the integration

This section describes how to install the components required by the xMatters On-Demand for HP BSM Operations Manager i software integration.

2.1.1 Integration components

The following table describes some of the notable components in the integration archive file:

Integration components	
Component Name	Description
configuration.js, hpomi.xml	The JavaScript and XML service configuration files that defines the integration services on the Integration Agent.
HPOMi.zip	Contains an exported communication plan and forms.
conf/deduplicator-filter.xml	The filtering mechanism used to suppress duplicate messages. The filter checks the values of certain parameters within injected events; if they are all the same within a specified time frame, only the first message will be sent through to xMatters. You can customize these settings by adding or removing predicates in the filter, changing the suppression period or the number of messages that are compared by the Integration Agent. For more information about this feature, see "Filtering and suppression" on page 17.

2.1.2 Installing voice files

These files must be installed into any xMatters deployment running a voice device engine.

This integration provides a number of English voice files (.vox) customized for this integration and HP OMi. The files are located in the `/components/xmatters/vox` folder in the extracted integration archive.

To install the voice files:

1. Log in to xMatters as a company administrator.
2. Click the **Developer** tab.
3. In the Phone Recordings menu, click **Add Phone Recording**.
4. On the Add a Phone Recording page, specify the following settings:
 - **Recording Phrase:** A HP OMi Event
 - **Event Domain:** applications
5. Click **Save**.
6. On the Edit Phone Recording Details page, click **Add New**.
7. On the Add Phone Recordings page, click **Choose File**.
8. Navigate to `\components\xmatters\vox`, and select `A HP OMi Event.vox`.

Note: *The names of the recordings you type into the web user interface MUST match the names of the files; file names are case-sensitive, and spacing must be respected.*

9. Click **Open**.
10. Click **Save**.
11. Repeat steps 3-10 for each of the remaining .vox files in \components\xmatters\vox.
 - Ensure that all files are added to the applications event domain.

2.1.3 Adding the web service and REST API users

Adding the web service user

This integration requires an xMatters web service user with permission to receive APXML in xMatters to receive user responses and notifications about event status changes. The following steps describe how to configure the default web service user, IA_User, for this integration.

To set up a web service user:

1. In xMatters, click the **Users** tab, and then click **Find Web Service Users**.
2. On the Find Web Service Users page, click **All**.
3. In the returned search results, click **IA_User**.
4. On the Details for IA_User page, confirm that the list of **Allowed Web Services** includes the following web services. If any are missing, select them in the **Denied Web Services** list, and then click **Add**:
 - Receive APXML
 - Register Integration Agent
5. Click **Save**.

Adding the REST API user

To send, delete, and query events, the integration requires a separate xMatters user with permissions to access the integration's forms. By default, users with the Full Access User role have these permissions. To change this (for example, to limit the access to a specific user), you can modify form permissions.

To set up a REST API user:

1. In the xMatters web user interface, click the **Users** tab.
2. Click **Add User**.
3. On the Add a User page, specify the following settings:
 - **User ID:** Type the value you configured as INITIATOR_USER_ID in the configuration.js file. The default is "hpomi".
 - **First Name:** HP
 - **Last Name:** OMi
4. Select **Full Access User** from the Available Roles list, and then click **Add**.
 - The role you select must match the role configured under Permissions in the integration's forms.
5. Click **Save**.
6. On the Change Web Login page, specify the following settings:
 - **Web Login ID:** Type the value you configured as INITIATOR in configuration.js file. The default is "hpomi".
 - **New Password** and **Verify New Password:** Type the password you encoded in INITIATOR_PASSWORD_FILE.
7. Click **Save**.

2.1.4 Importing the communication plan

The integration package includes a .zip file that was created using the xMatters "Export Plan" feature; this greatly simplifies the xMatters configuration process by enabling you to create the integration communication plan, forms, event properties, and responses in a single step.

To import the communication plan:

1. Log in to xMatters as a company administrator, and click the **Developer** tab.
2. In the Manage Communication Plans menu, click **Import Plan**.
3. In the Import Communication Plan File dialog box, click **Choose File**, and then locate the `\components\xmatters\plans\HPOMi.zip` file extracted from the integration archive.
4. Click **Open**, and then click **Import Plan**.
5. Click **Plan Disabled** to enable the plan.
6. In the **Edit** drop-down list, select **Forms**.
7. In the **New Incident Alerts** form, in the **Not Deployed** drop-down list, click **Create Event Web Service**.
 - After you create the web service, the drop-down list label will change to **Web Service Only**.
8. In the **Web Service Only** drop-down list, click **Permissions**.
9. Enter the REST API user you created in "Adding the web service and REST API users" on page 5.
10. Click **Save Changes**.

Accessing web service URLs

To get the web service URL for a form, in the **Web Service Only** drop-down list, click **Access Web Service URL**. Copy the highlighted URL at the top of the dialog box.

2.1.5 Installing the integration service and updating the Integration Agent

To configure the Integration Agent for the HP OMi integration, you must copy the integration components into the Integration Agent; this process is similar to patching the application, where instead of copying files and folders one by one, you copy the contents of a single folder directly into the Integration Agent folder (<IAHOME>). The folder structure is identical to the existing Integration Agent installation, so copying the folder's contents automatically installs the required files to their appropriate locations. Copying these files will not overwrite any existing integrations.

If you have more than one Integration Agent providing the "hpomi-3-0" service, repeat the following steps for each one. If you are not certain of the settings required in this section, consult your HP OMi administrator.

Note: *If you have already installed an existing integration, ensure that you backup the `deduplicator-filter.xml` file (if one exists) in the <IAHOME>\conf folder before you install this integration.*

To install the integration service:

1. Copy all of the contents, including subfolders, of the `\components\integration-agent\` folder from the extracted integration archive to the <IAHOME> folder.
2. If you backed up an existing deduplicator file as indicated in the note above, merge the contents of your back up with the newly installed `<IAHOME>\conf\deduplicator-filter.xml` file: open both files in a text editor, and then copy the <filter> node from the backup file into the new deduplicator file after the last </filter> node. Save and close the file.
3. Open the `<IAHOME>\conf\IAConfig.xml` file and add the following line to the "service-configs" section:


```
<path>hpomi-3-0/hpomi.xml</path>
```
4. Open the `<IAHOME>\integrationservices\hpomi-3-0\configuration.js` file and modify the following variables:

Setting	Description
OMI_SERVER	To configure this setting, replace the default value of "localhost" with the fully qualified DNS name of the HP OMi Gateway server. The default value is: localhost
OMI_PROTOCOL	The protocol used for HP OMi connectivity; the default value is "http". To enable SSL communication, replace the default value with "https".
OMI_PORT	To configure this setting, replace the default value of "80" with the port number of your HP OMi server.
OMI_USER	Specifies the username of the web services client account to use when connecting to the HP OMi web services; the default value is "xMatters". Note that this user name is case-sensitive, and must match the name of the defined connected server. For more information, see "Creating a connected server" on page 9.
OMI_PASSWORD_FILE	Specifies the location of the password file containing the web services user's password; for instructions on how to set the password for this user, see "Installing the integration service and updating the Integration Agent" on page 6, below.
OMI_REST_SYNC_EVENT_ROOTPATH	Specifies the endpoint used to obtain more event details when an Opr Event Change object is received; the default value is: <code>/opr-gateway/rest/synchronization/event/</code>
OMI_REST_SYNC_EVENT_CHANGE_ROOTPATH	Specifies the endpoint used to send Opr Event Change objects to HP OMi, which reflect response choices made by xMatters Users and are intended to update events accordingly; the default value is: <code>/opr-gateway/rest/synchronization/event_change/</code>
DEDUPLICATOR_FILTER	Specifies the name of the filter used by the Integration Agent's deduplicator module, which prevents duplicate events from being injected into xMatters; the default value is "hpomi-3-0". Note that the deduplication filter is cleared whenever the Integration Agent is restarted; this means that after a restart, events that would otherwise be filtered may be injected into xMatters.
ANNOTATE_DELIVERY	Specifies whether xMatters should update the originating event with delivery annotations; the default value is "true".
XMATTERS_FORM	The web service URL of the "HPOMi" form imported as part of the communication plan; for instructions on how to retrieve this URL, see "Accessing web service URLs" on page 6.
XMATTERS_FYI_FORM	The web service URL of the "HPOMi-fyi" form imported as part of the communication plan; for instructions on how to retrieve this URL, see "Accessing web service URLs" on page 6.

Setting	Description
INITIATOR	Specifies the web login ID of a separate xMatters user for authenticating REST API requests. The user (or its role) must have permission to access the integration's forms via the REST API. For more information, see "Adding the web service and REST API users" on page 5.
INITIATOR_PASSWORD_FILE	Specifies the location of the file containing the password of the xMatters initiator user. Note: This password file must be created using the IAPassword utility, as explained in "Setting web services user password", below.
INITIATOR_USER_ID	Specifies the user ID of xMatters initiator user that authenticates REST API calls.

5. Restart the Integration Agent.

- On Windows, the Integration Agent runs as a Windows Service; on Unix, it runs as a Unix daemon.

2.1.6 Setting web services user password

This integration includes an encrypted file, located in the <IAHOME>\conf folder, that stores the password for the web services user required for the management system. You will need to update the file with the correct password for the SERVICE_DESK_USER variable specified in the hpomi-3-0\configuration.js file.

Password file name:

- hpomi30.pwd stores the password for the SERVICE_DESK_USER user used by the hpomi-3-0 integration service. If you change the name of this file, you must also update the configuration.js files to point to the correct password file.

To specify a web service user password:

1. Open a command prompt, and then navigate to <IAHOME>\bin.
2. Run the following command, where <new_password> is the password for the web services user specified in the configuration.js file, <old_password> is the existing password (the default value for a newly installed integration is "password"), and <filename> is the name of the password file (default is hpomi30.pwd).

```
iapassword.bat --new <new_password> --old <old_password> --file conf/<filename>.pwd
```

To configure the xMatters REST API user password:

1. Open a command prompt, and then navigate to <IAHOME>\bin.
2. Run the following command, where <new_password> is the password for the INITIATOR user specified in the configuration.js file, and <old_password> is the existing password (the default value for a newly installed integration is "password"):

```
iapassword.bat --new <new_password> --old <old_password> --file conf/.initiatorpasswd
```

2.2 Configuring HP OMi

The following sections describe how to configure HP OMi to combine with xMatters.

2.2.1 Creating a connected server

Configuring a connected server allows notification responses to update events appropriately.

To create a connected server:

1. In the HP OMi interface, on the Administration tab, in the Setup and Maintenance area, click **Connected Servers**.
2. Click the **New Item** icon, and then select the **External Event Processing** server type.
 - HP OMi displays the Create New Server Connection dialog box.
3. On the General page, in the **Display Name** field, type `xMatters`, and then click **Next**.
4. On the Server Properties page, type the fully qualified DNS name of the server on which the xMatters Integration Agent is installed, select **Management System** as the CI Type, and then click **Next**.
5. On the Integration Type page, select **Call External Event Web Service**.
6. In the **Root URL Path** field, type `/http/applications_hpomi-3-0`, and then click **Next**.
7. On the Outgoing Connection page, ensure that the value in the **Port** field (default for the integration is 8081) matches the service-gateway port defined in the **IAConfig.xml** file.
8. If the Integration Agent and xMatters have not been configured for SSL, clear the **Use Secure HTTP** check box.
 - For more information about secure HTTP, see "Configuring SSL" on page 17.
9. Select the **Supports Synchronize and Transfer Control** check box, and then click **Next**.
10. On the Event Drill-down page, click **Next**.
11. On the Incoming Connection page, enter the password specified in the `configuration.js` (see "Installing the integration service and updating the Integration Agent" on page 6).
12. Click **Finish**.

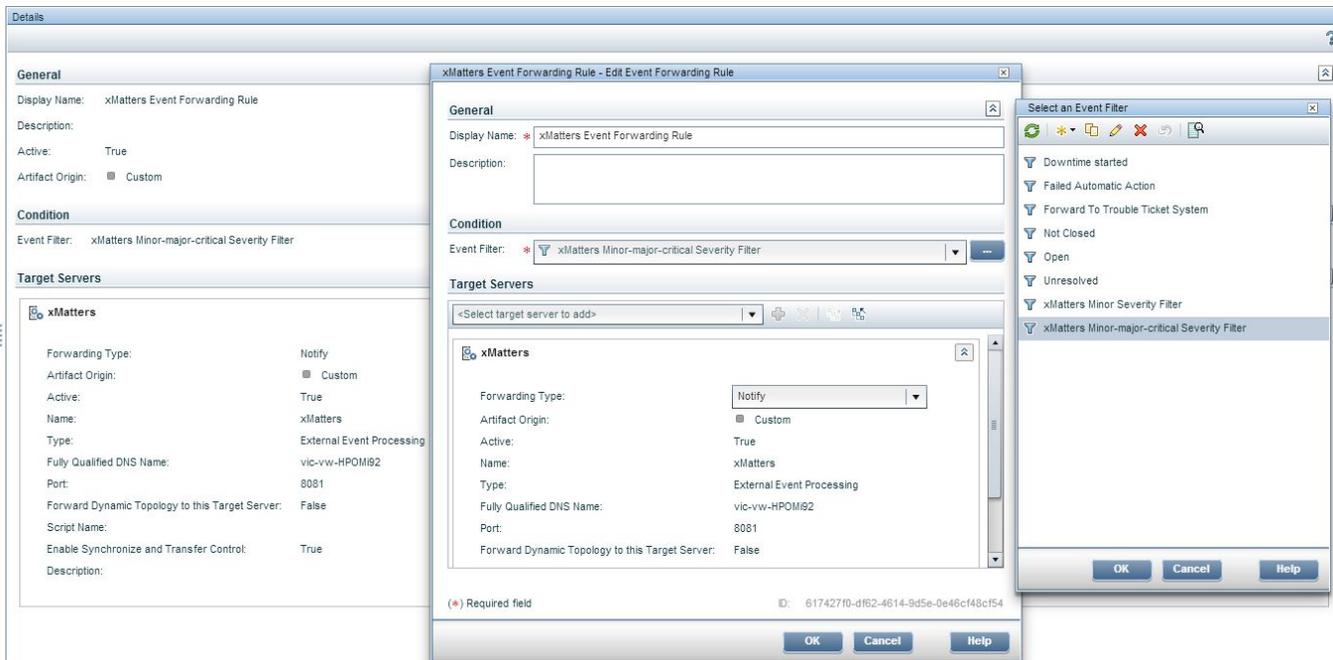
2.2.2 Creating an event forwarding rule

Each deployment of the integration requires a unique event forwarding rule, specific to each deployment, based on the organization's assessment of which events are appropriate to be sent to xMatters. An organization can choose to have more than one event forwarding rule, but for the integration to function correctly, an Event Forwarding rule must exist and be associated with the xMatters connected server..

The following steps provide an example of how to create a forwarding rule; the rule required for your integration will not be precisely the same.

To create an event forwarding rule:

1. In the HP OMi interface, click the **Administration** tab drop-down list, and then click **Event Forwarding** in the Automation section.
2. On the Event Forwarding page, click the **New Item** icon.
 - HP OMi displays the Create New Event Forwarding Rule dialog box.
3. In the General section, in the **Display Name** field, type `xMatters Event Forwarding Rule`.
4. In the Condition section, click the **Browse** button beside the Event Filter drop-down list.



5. In the Select an Event Filter dialog box, click **New**, and then select **New Simple Filter**.
6. In the Filter Configuration dialog box, in the Filter Display Name field, type `xMatters Minor Severity Filter`.
7. Select the **Minor Severity** check box, and then clear the check box for all other severities.
8. In the Correlation area, select **All top level events**, and then click **OK**.

xMatters Minor-major-critical Severity Filter - Edit Event Filter

Filter Display Name: * xMatters Minor-major-critical Severity Filter

Filter Description:

General | Dates | **Additional Event Properties**

Severity:

- Critical
- Major
- Minor
- Warning
- Normal
- Unknown

Lifecycle State:

- Open
- In Progress
- Resolved
- Closed

Priority:

- Highest
- High
- Medium
- Low
- Lowest
- None

Correlation: All events All top level events All cause events

Title: equals

Description: equals

Category: equals

Subcategory: equals

Type: equals

[Convert to Advanced](#)

(*) Required field ID: f2f128b-b-780e-4db0-b428-d4e82ef3d4e2

OK Cancel Help

9. Once HP OMi returns you to the Select an Event Filter dialog box, with the xMatters Minor Severity Filter selected, click **OK**.
10. In the **Target Servers** drop-down list, select **xMatters**, and then click **Add target server** (the plus symbol beside the drop-down list).
11. In the **Forwarding Type** drop-down list, select **Synchronize**.
12. Click **OK**.

Chapter 3: Integration Validation

After configuring xMatters and HP OMi, you can validate that communication is properly configured. It is recommended that you start the components in the following order:

- HP BSM Operations Manager i software
- xMatters Integration Agent

Consult the respective user manuals for details on starting these applications.

The following sections will test the combination of xMatters and HP OMi for notification delivery and response.

3.1 Triggering a notification

The following example illustrates how moving an event to "In Progress" will trigger a notification in xMatters.

3.1.1 Inject a sample event

You can use the packaged `sendEvent.bat` script to inject a test event into HP OMi.

On Windows, this script is located at:

```
C:\HPBSM\opr\support
```

For information on how to use the `sendEvent.bat` script, please refer to the HP OMi documentation.

3.2 Responding to a notification

This section describes how to respond to a notification from xMatters. In the following example, the notification is received via email, but the process is similar for all devices.

To respond to a notification:

1. When a notification arrives, open it to view its details:

cs1 to me ↕



Priority medium
 Related CI OMi Gateway Server on vic-vw-hpomi10
 Node vic-vw-dc4.invoqsystems.com|10.2.0.9|9a5c5712-0eaa-7581-0b1b-f8522316eef6
 Monitored By OMi
 Assigned To Sample Group
 Time Received 2015-09-14T15:59:24.797-07:00
 View Event in BSM <http://vic-vw-hpomi10:80/opr-web/opr-evt-details.jsp?eventId=3e5da660-5b34-71e5-09aa-0a0200de0000>
 Event Description

...

PLEASE RESPOND WITH ONE OF THE FOLLOWING OPTIONS:

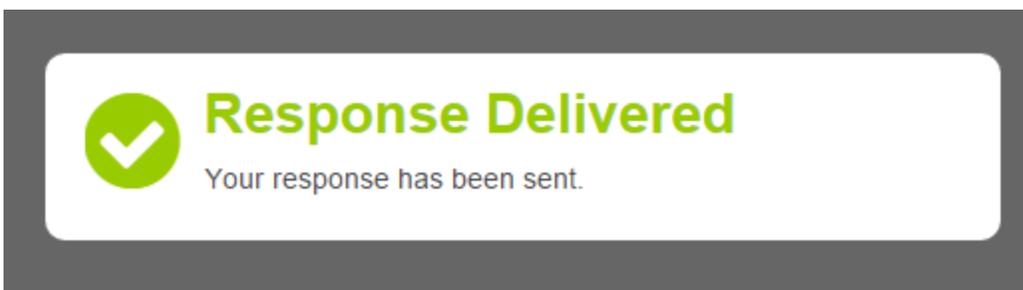
1. [Work On](#) - to work on this event and to stop escalation
2. [Ignore](#) - to escalate this event to the next person in the group
3. [Resolve](#) - to mark this event as resolved and stop escalation

If you are NOT able to connect to the web, use the following method to record your response:

Reply to this email and replace the subject line with the word RESPONSE followed by your response choice: Work On, Ignore, Resolve

NOTE: Include the original message in your reply, and do NOT delete this note, as it identifies this message (1715457).

2. To respond to the notification, click a response choice, and xMatters will update the event in HP OMi.



For more information about response choices, and changing the options available to users, see "Response choices" on page 15.

3.3 Viewing response results

When the response is received, the Lifecycle state is changed to In Progress and a message is logged in the Annotations tab of the event.

To view the notification results:

1. Open the HP OMi Web Console.
2. On the Event Perspective tab, under Event Browser, locate the event used for testing notifications.
 - The Life Cycle State has changed to In Progress, indicating that the event was acknowledged from xMatters:

3. To display the messages annotated to the event, click the Annotations tab.
 - An annotation indicates that the event was changed to "In Progress" by bsmith. For In Progress, Resolved, and Closed responses, the Assigned User is set to the person who responded.

Chapter 4: Optimizing and Extending the Integration

This section describes some of the available methods you can use to optimize or extend the xMatters On-Demand for HP BSM Operations Manager i software integration.

4.1 Adding new parameters

Additional data elements (or tokens) can be forwarded to xMatters by adding them in HP OMi. The following steps explain how to add a new event token to the event injected to xMatters.

Note: *For more information about which parameters may be available, refer to the HP OMi documentation.*

To add an event parameter:

1. Open the <IAHOME>\integrationservices\hpomi-3-0\hpomi-request.js file.
2. To add a new child node to the generated APXML data, locate the function `convertOprEventToAPXML: function(event).`
3. Locate the following comments:


```
// add custom tokens
// apxml.setToken("custom_token", event.custom_token);
```
4. Uncomment the `apxml.SetToken` line.
5. Save and close the file.

Note that the above token, `event.custom_token`, is an example. This value must be changed to a valid Opr Event type which represents a field for an HP OMi event. A description of an Opr Event object can be found in the HP Business Service Management Operations Manager i Extensibility Guide.

You can now add the new parameter as a property to the communication plan form and add content to notifications.

4.2 Response choices

This integration allows recipients to respond to notifications with several default choices configured on the communication plan form: Work On, Ignore, and Resolved. Responses are injected back to the HP OMi server, updating the original event. Users notified on email Devices also have the ability to respond with an extra annotation message which will be logged in the original event, as described in "Adding annotation messages", below.

The following is a list of the available response choices and their associated actions on the event in xMatters and the HP OMi event.

Response	HP OMi Update	xMatters Job Control
Work On	Moves the Lifecycle State of the event to "In Progress", and annotates the event with the name of the responder and the device used.	Delink all except responder
Ignore	Annotates the event with the name of the responder who ignored the notification and the name of the device used.	Notify next, delink responder.

Response	HP OMi Update	xMatters Job Control
Resolve	Moves the Lifecycle State of the event to "Resolved", and annotates the event with the name of the responder and the device used.	Delink all except responder

Job control definitions

The xMatters job controls in the above table are defined as follows:

- **Delivered:** marks the notification as delivered.
- **Notify next:** notifies the next recipient in the Group according to the defined escalation in xMatters.
- **Delink responder:** marks the notification as delivered, and stops the responder from performing any further action on the notification.
- **Delink all except responder:** marks the notification as delivered, and stops any recipients other than the responder from performing any further action on the notification.
- **Delink all:** marks the notification as delivered, stops any further action on the notification for all recipients, and terminates the event in xMatters.

The job control defined for each response choice is the default configuration for this integration; for more information about job control, and how to modify these actions in the scripts, see the *xMatters Online Developer's Guide*.

4.2.1 Adding annotation messages

Two-way email device notifications (not FYI) can add extra annotations that will be added to the HP OMi event as a message on the Annotations tab. To add an extra annotation, respond to an email notification with the following format in the subject line:

```
RESPONSE <Choice> <Message>
```

<Choice> can be any of the response choices listed in the table above, and <Message> can be any content you want to add as the annotation.

4.2.2 Responses for FYI notifications

FYI notifications do not have any response choices available, except for FYI notifications sent to voice Devices. Voice FYI notifications offer the following response choices so that Users can navigate between multiple notifications. (This navigation is not required on other Devices.)

Voice Device responses for FYI notifications

Response	Description
Delete	Removes the notification from the User's list. This option is most likely to be selected.
Save	Saves the notification and stops attempting to deliver it to the User's other Devices. Users may select this option to delay listening to the notification when it is delivered, and access the details by calling in, or via the xMatters web user interface, at a later time.
Repeat	Replays the notification content.

4.3 Annotations

This integration extensively annotates the originating HP OMi event with messages regarding the delivery status of notifications from xMatters, but this may not be desirable in all environments. To prevent annotations, change the value of the ANNOTATE_DELIVERY variable in `configuration.js` to *false*.

4.4 Filtering and suppression

The xMatters Integration Agent's Portable Filtering and Suppression Module is a built-in module that maintains a rolling record of previously injected events, and allows for the suppression of duplicates (also referred to as "deduplication"). This helps avoid disruption of traffic due to inadvertent loads that can result when, for example, improperly configured management systems inject duplicated events.

The `deduplicator-filter.xml` file is installed in the `<IAHOME>\conf` folder and is configured to suppress duplicate events for 12 hours (up to a maximum of 100 events in that period).

This filter can be modified to extend the time period over which an event is considered to be a duplicate, the number of events in that period and the tokens that are used to determine what makes the event unique.

For example, to add category to the tokens, open the `deduplicator-filter.xml` file in a text editor and add the following line to the `<predicates>` collection:

```
<predicate>category</predicate>
```

Save the file and restart the Integration Agent for the changes to take effect.

Note: *To see a complete list of predicates available in the integration, reviewing the Event Data in the Event Summary Report in the xMatters web user interface.*

4.5 Configuring SSL

This integration supports SSL communication between the Integration Agent and HP OMi and between the Integration Agent and xMatters.

4.5.1 Using self-signed certificates

The SSL support has been configured out of the box to support self-signed certificates. This is not recommended for production systems due to security reasons, unless you are aware and accepting of the security implications of self-signed certificates.

To modify the SSL configuration:

1. Open the `<IAHOME>\integrationservices\hpomi-3-0\lib\javascript\webservices\wsutil.js` file and modify the `ACCEPT_ANY_CERTIFICATE` variable as follows:
 - Set to *true* to use SSL but trust any certificate (including self-signed ones).
 - Set to *false* to accept only Certificate Authority (CA) certified certificates (recommended in production environments).

4.5.2 Importing certificates

The next step required to enable SSL support is to import the certificate used by the HP OMi web server to the cacerts keystore of the Java Virtual Machine (JVM) bundled with the Integration Agent.

Using the keytool executable located at <IAHOME>\jre\bin, execute the following command on the Integration Agent to import the certificate, replacing the variables with the appropriate values as described in the list below:

```
keytool -import -alias <your.alias> -file <path>/<certificate>.cer -keystore
<dir>/jre/lib/security/cacerts -storepass <password>
```

- **<your.alias>**: an identifier for the certificate within the keystore; for example, you can use the string "hpomi-3-0".
- **<path>**: path to the certificate
- **<certificate>**: the certificate's file name
- **<dir>**: the directory in which the Integration Agent is installed.
- **<password>**: the password for the cacerts keystore; the default password is "changeit".

If you want to configure SSL support between the Integration Agent and xMatters, use the above command to import the trusted certificate for xMatters into the Integration Agent keystore (for information on setting up SSL in xMatters, consult the xMatters Community site at <http://support.xmatters.com>)

4.5.3 Updating HTTP to HTTPS

The next step is to update the OMI_PROTOCOL in the <IAHOME>\integrationservices\hpomi-3-0\configuration.js file to use the HTTPS protocol instead of HTTP.

The modified value should resemble the following:

```
var OMI_PROTOCOL = "https";
```

Note: For trusted certificates, "localhost" should be replaced with the COMMON NAME (CN) specified in the certificate and the port should be set to the port specified in the SSL configuration for HP OMi.

To configure the Integration Agent to use HTTPS when communicating with xMatters:

1. In a text editor, open the <IAHOME>\conf\IAConfig.xml file.
2. Modify the URL for the <primary-servers> and <secondary-servers> elements to use the HTTPS protocol instead of HTTP; the section should resemble the following:

```
<primary-servers>
<!--
| 0 or more URL elements that specify the primary location of each xMatters server's
| RegisterIntegrationAgent Web Service. The URLs must begin with either http:// or https://
| and cannot have a query or fragment component. The URLs must be resolvable from this IA.
+-->
<url>https://localhost:8443/api/services/AlarmPointWebService</url>
</primary-servers>

<!--
| These servers are assumed to be connected to the same xMatters database,
| which can be different than the primary servers' database.
+-->
<secondary-servers>
<!--
| 0 or more URL elements that specify the secondary location of each xMatters server's
| RegisterIntegrationAgent Web Service. The URLs must begin with either http:// or https://
| and cannot have a query or fragment component. The URLs must be resolvable from this IA.
+-->
<url>https://localhost:8443/api/services/AlarmPointWebService</url>
</secondary-servers>
```

Note: For trusted certificates, "localhost" should be replaced with the COMMON NAME (CN) specified in the certificate and the port should be set to the port specified in the SSL configuration for the xMatters server.

3. Modify the value for the <service-gateway> element to use SSL; note that the service-gateway host IP must be resolvable from the xMatters servers:

```
<service-gateway ssl="true" host="localhost" port="8081"/>
```

4. Restart the Integration Agent.

4.5.4 Optional Configuration

The following scenarios illustrate the common configuration options available when using SSL.

Scenario 1

- HP OMi certificate: CA-certified
- xMatters certificate: CA-certified

In `wsutil.js`, set the variable `ACCEPT_ANY_CERTIFICATE` to *false*.

This will ensure ALL communication between the Integration Agent and HP OMi and the Integration Agent and xMatters uses the appropriate CA certified certificates

Scenario 2

- HP OMi certificate: CA-certified
- xMatters certificate: self-signed

In `wsutil.js`, set the variable `ACCEPT_ANY_CERTIFICATE` to *false*.

In `xmatterws.js`, add the following line at the end of the `init()` method:

```
this.ACCEPT_ANY_CERTIFICATE = true;
```

This will allow communication between the Integration Agent and xMatters to use self-signed certificates while maintaining more complete security between the Integration Agent and HP OMi.

Scenario 3

- HP OMi certificate: self-signed
- xMatters certificate: CA-certified

In `wsutil.js`, set the variable `ACCEPT_ANY_CERTIFICATE` to *true*.

In `xmatterws.js`, add the following line at the end of the `init()` method:

```
this.ACCEPT_ANY_CERTIFICATE = false;
```

This will allow communication between the Integration Agent and HP OMi to use self-signed certificates while maintaining more complete security between the Integration Agent and xMatters.

Scenario 4

- HP OMi certificate: self-signed
- xMatters certificate: self-signed

In `wsutil.js`, set the variable `ACCEPT_ANY_CERTIFICATE` to *true*.

This will allow ALL communication between the Integration Agent and HP OMi and between the Integration Agent and xMatters to use self-signed certificates.



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xMatters enables any business process or application to trigger two-way communications (voice, email, SMS, etc.) throughout the extended enterprise. The company's cloud-based solution allows for enterprise-grade scaling and delivery during time-sensitive events. More than 1,000 leading global firms use xMatters to ensure business operations run smoothly and effectively during incidents such as IT failures, product recalls, natural disasters, dynamic staffing, service outages, medical emergencies and supply-chain disruptions.