xMatters *(alarmpoint)* for HP

Service Manager Change Management

(x) matters®
The relevance engine company.

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AlarmPoint Systems, Inc. is now xMatters, inc. This change extends to how we name our products: the AlarmPoint Integration Agent is now the xMatters integration agent; AlarmPoint Enterprise is now xMatters enterprise; and so on. You can learn more about why we changed our name at www.xmatters.com. During the ongoing transition to the new naming conventions, legacy corporate and product names will still appear in some parts of our products, such as directory paths, logs, and messages. This document reflects the new names whenever possible, while respecting the need for clarity when referring to older products, legacy issues, existing knowledge base articles, etc.

Wednesday, January 04, 2012

Contacting xMatters

You can visit the xMatters Web site at: http:///www.xmatters.com

From this site, you can obtain information about the company, products, support, and other helpful tips. You can also visit the Customer Support Site from the main web page. In this protected area, you will find current product releases, patches, release notes, a product knowledge base, trouble ticket submission areas and other tools provided by xMatters, inc.

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This integration was designed and tested on an unmodified version of HP Service Manager Change Management, and this document describes how to configure xMatters to integrate with the default installation. If you have customized or altered your instance of HP Service Manager, 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 Technical Support, but can be performed through xMatters's Professional Services department. For more information, contact your xMatters Sales representative.

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Chapter 1: Introduction

Welcome to xMatters for HP Service Manager Change Management. This document describes how to install and configure the xMatters for HP Service Manager Change Management software integration. The intended audience for this document is experienced consultants, system administrators and other technical readers.

1.1 Summary

xMatters is an interactive alerting application, designed to capture and enrich important events, to route those events to the right person on any communication device, and to give that person the ability to solve, escalate, or enlist others to resolve the events remotely.

xMatters allows you to take critical business information and contact the right people via voice phone, SMS, two-way pagers, instant message, and email.

Through integration modules, xMatters can become the voice and interface of an automation engine or intelligent application (the Management System, such as HP Service Manager Change Management). When HP Service Manager detects something that requires attention, xMatters places phone calls, sends pages, messages, or emails to 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 HP Service Manager Change Management. Responses are executed immediately on HP Service Manager, enabling remote resolution of the event.

This integration supports change request notifications (from HP Service Manager to xMatters). It also supports inbound actions (from xMatters to HP Service Manager).

You will need to modify this configuration to suit your particular business requirements and adjust it to suit your expected loads. For example, the default integration features automatic status annotations to the original event; in a high-volume production system, this can significantly affect performance. Consider your expected volume of injected events and your server capacity when designing your own integration with xMatters.

1.1.1 Benefits

With the xMatters integration, the appropriate technician can be notified directly via voice, email, pager, BlackBerry, or other device. Information about the failure will be presented to the event resolver and decisions can be made in real-time.

Once a response is selected on the recipient's remote device, xMatters will update the HP Service Manager change request in real-time. The benefit is that this process is immediate – significantly faster than the time required for staff to notice the failures or malfunctions, determine who is on call, and manually notify the right person. In addition, the ability to take simple actions on the event from any device gives the event resolver a quick way to deal with many issues and communicate to other team members the current state of the event.

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

The xMatters product features a self-service web user interface to allow accurate assignment of responsible personnel for each job. xMatters also includes an optional enhanced Subscription panel that allows both managed and self-subscription to HP Service Manager events. This Subscription panel queries the HP Service Manager server directly in real time to retrieve lists of important settings and criteria, removing the need to create and maintain these lists.

1.1.2 xMatters mobile access

This version of xMatters also includes the xMatters mobile access application. With the mobile access component, the appropriate technician can create, view, and update HP Service Manager messages directly via a mobile device's web browser. Information about HP Service Manager events can be displayed on the mobile device and updated in real-time.

The benefit is that this process is immediate and may be done remotely – providing users with an efficient method of handling HP Service Manager events from any mobile device. In addition, the integration can be updated to notify xMatters Users on their mobile devices with a link to the mobile view of the event, allowing the user to update the event remotely.

1.1.3 Information Workflow

The following diagram illustrates a standard workflow in a change request management system, and how information from the management system is passed into the xMatters relevance engine:
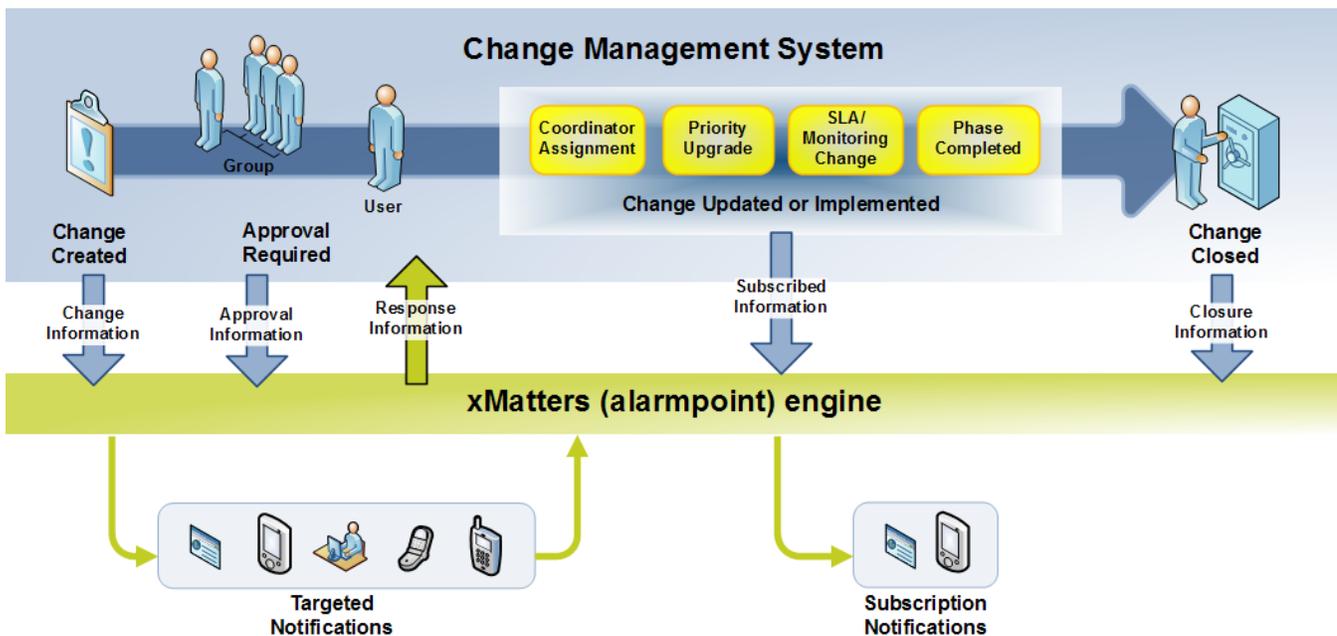
1.1.4 Integration architecture

The software components in this integration include:

- xMatters relevance engine and the mobile access component
- HP Service Manager Change Management
- xMatters integration agent

The following diagram illustrates the software processes used by this integration:
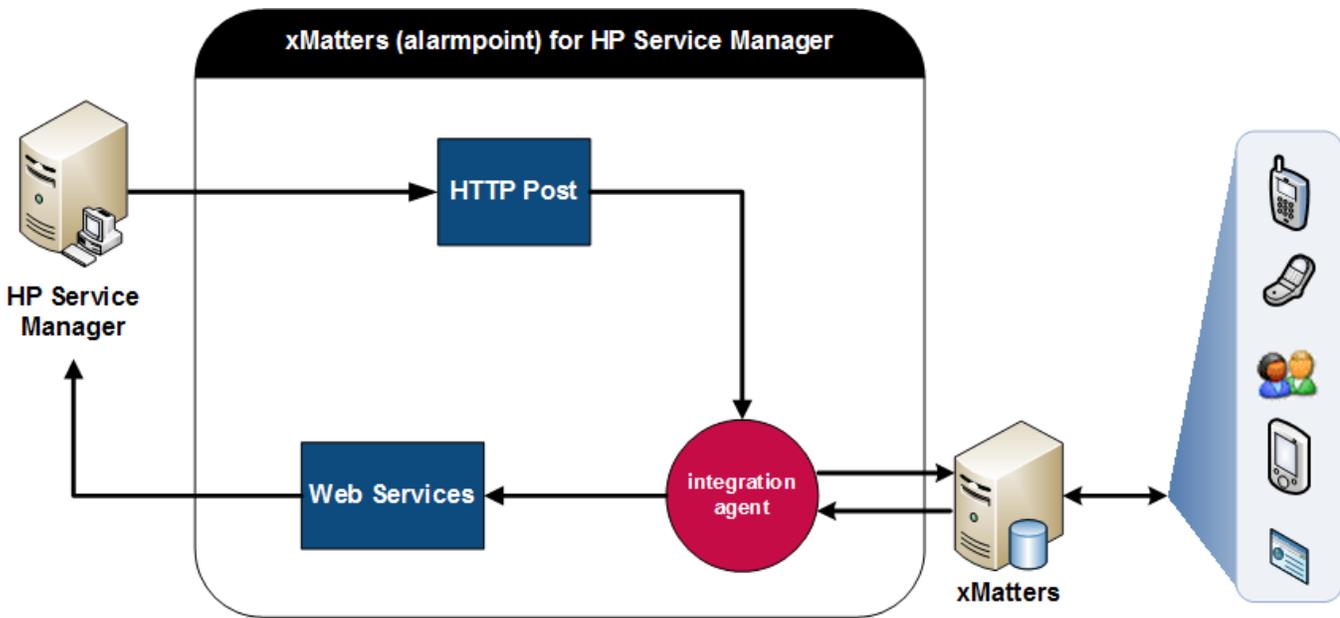
Whenever HP Service Manager detects a problem, it triggers the following steps (for a description of what will cause an event to be injected into xMatters, see "Event injection triggers", below):

1. HP Service Manager sends the event details to the xMatters integration agent via HTTP POST.
2. The integration agent forwards the event details to xMatters via web services.
3. The response returns to the integration agent.
4. The integration agent sends the response to HP Service Manager via web services.

User and Group synchronization process

As illustrated in the diagram, event injection for this integration is handled via the xMatters integration agent. User and Group synchronization, however, is handled via direct web service calls between xMatters and HP Service Manager. For the User and Group synchronization process to work, the Web Services User must be properly configured, as described in "Adding the Web Service User" on page 19.

xMatters mobile access integration architecture

The following diagram illustrates the software processes used by the mobile access component of the integration:
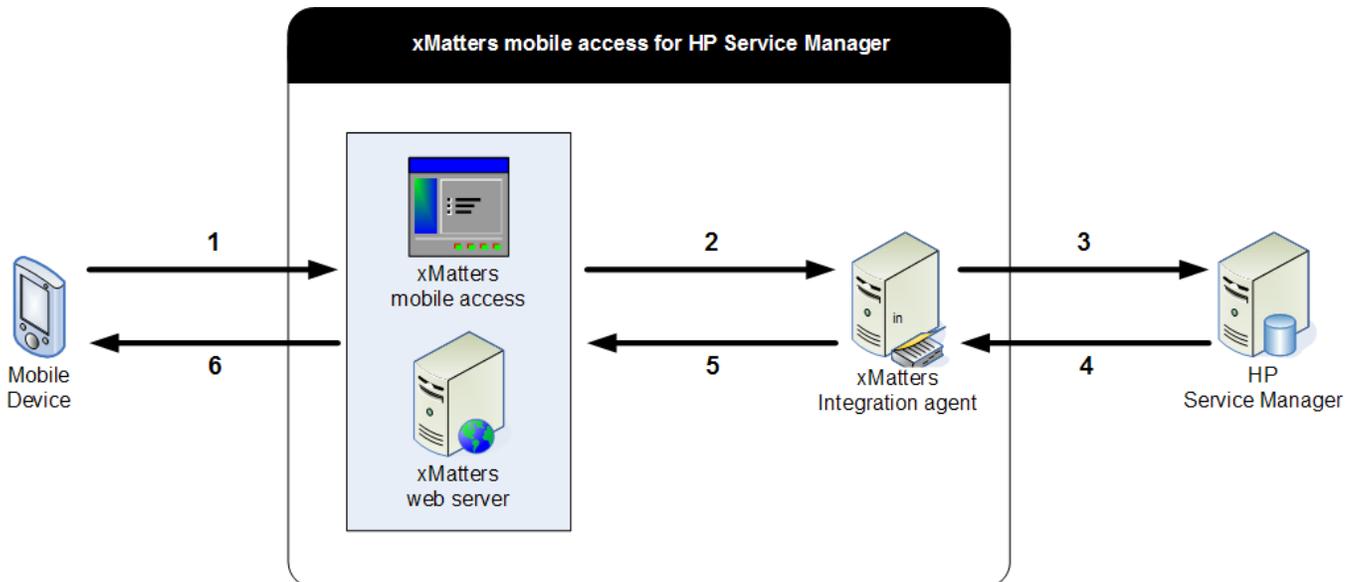
The following steps occur for each action initiated by a mobile user (the steps correspond to the numbers in the above diagram):

1. A User sends a request from a mobile Device to xMatters mobile access.
2. The mobile access component processes the request and relays instructions to the xMatters integration agent.
3. The integration agent communicates with HP Service Manager via the HP Service Manager web services API.
4. The response is sent back to the integration agent via web services.
5. The integration agent processes the response and sends it to the mobile access component.
6. Rendered results are sent back to the mobile Device.

Event injection triggers

The following is a summary of the circumstances under which HP Service Manager will inject an event into xMatters for notification. Note that this is the default, out-of-box behavior, and may be configured differently for some deployments.

- An event will be injected into xMatters whenever a new change request is created with a Priority of "Critical" or "High".
- An event will be injected into xMatters whenever an existing change request with a Priority of "Critical" or "High" is modified by upgrading the Priority, changing the Phase, or modifying the Assignee.

These events are untargeted events, used for subscriptions only.

An event will also be injected into xMatters when the Phase is changed to one that requires approval. At this point, the event will be targeted to the approvers that are defined in the approval associated to the Change Phase in the Approvals section of HP Service Manager; this is configurable within the HP Service Manager Client, and is specific to each customer's implementation.

Note: *The only time a targeted event is injected into xMatters is for approvals; all other events are untargeted.*

1.2 System Requirements

The following products must be installed and operating correctly prior to integration:

- xMatters relevance engine 4.1 (patch 003 or later) with a valid xMatters mobile access license.
- xMatters integration agent 4.1 (patch 004 or later)
- xMatters Developer IDE
- HP Service Manager Change Management 9.3

1.2.1 Operating Systems

The following operating systems are supported by this integration:

- Microsoft Windows 2003
- Microsoft Windows 2008 (validated)

1.3 Conventions and Terminology

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

1.3.1 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 installation folder is referred to throughout the documentation as <xMHOME>.

- On Windows systems, the default is C:\Program Files\AlarmPointSystems\AlarmPoint\
- On Unix systems, the default is /opt/alarmpointsystems/alarmpoint/

The xMatters integration agent installation folder is referred to throughout the documentation as <IAHOME>.

- On Windows systems, the default is C:\Program Files\AlarmPointSystems\IntegrationAgent\
- On Unix systems, the default is /opt/alarmpointsystems/integrationagent

1.3.2 Terminology

The following terms are used through the xMatters documentation.

Documentation terminology

Term	Meaning
Event	An *event* 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.
	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.
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 Service Manager.
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 *xMatters user guide*.

Chapter 2: Installation and Configuration

This chapter provides information about installing the xMatters for HP Service Manager Change Management integration. This chapter also contains complete instructions on how to configure xMatters, HP Service Manager, and the integration components.

The instructions in this chapter do not include information on how to install xMatters relevance engine, the xMatters integration agent, or HP Service Manager Change Management. These components must be installed according to their related documentation, and operating properly before you can proceed with the integration.

Note that in most cases, the xMatters integration agent must be installed on the same server as HP Service Manager.

Note: *For more information about installing xMatters relevance engine and other xMatters products, refer to the xMatters web site at http:///www.xmatters.com.*

2.1 Installing integration components

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

Integration components

Component Name	Description
com.alarmpoint.servicemanager.cm.jar	Contains the Web Services Library, which is used in the xMatters Action Scripts to inject responses back to HP Service Manager, and used by the Subscription Panel to retrieve the available Categories, Subcategories, Problem Types and Product Types.
SMCMSubscriptionForm.jsp	Custom Subscription JSP that allows users to subscribe to Events associated with specific criteria (category, urgency, etc.).
AlarmPointSyncConfig.xml	Contains all the Groups, Teams, Users, Devices and Coverage value mappings used when synchronizing HP Service Manager operators and assignments with xMatters Users and Groups.
AlarmPointSyncList.xml	Contains a list of all of the HP Service Manager operators and assignments to either include or exclude from synchronization with xMatters.
AlarmPointForms.sc **AlarmPointScriptLibrary.sc** **AlarmPointTriggers.sc** **AlarmPointUnload.sc** **AlarmPointWebService.sc**	HP Service Manager unload files used to import all the custom xMatters records and tables.
AP-HP-ServiceManager-CM.aps	Contains the xMatters Action Scripts required for the integration.
hpsmcm.js	Contains the Javascript code to support the calls from HP Service Manager to the integration agent when injecting events into xMatters.
hpsmcm.xml	Contains the configuration information for the integration agent.

2.1.1 Installing the web services library

To enable web service calls between xMatters and HP Service Manager, you must copy the JAR file from the `lib` folder in the extracted integration archive into the web server library folder, and into the xMatters mobile access folder.

Note: *The "AlarmPointWebService" Java Script, imported as part of the AlarmPointScriptLibrary.sc, is a generated file with customized modifications. Do not attempt to regenerate this file, and do not alter it in any way.*

Source file:

`xM-HP-ServiceManager-CM_2_3_2\components\alarmpoint\lib\com.alarmpoint.servicemanager.cm.jar`

Web server destination directory:

`<xMHOME>\webserver\webapps\cocoon\WEB-INF\lib`

xMatters mobile access destination directory:

`<xMHOME>\webserver\webapps\mobilegateway\WEB-INF\lib`

Note: *If you have installed more than one web server, copy the JAR file into the destination directories on each one.*

2.1.2 Installing the integration service

To enable the HP Service Manager integration service, you must copy the folder containing the integration agentfiles into the xMatters integration services folder and modify the hpsmcm.js and `IAConfig.xml` files. If you have more than one integration agent providing the HP Service Manager service, repeat the following steps for each one.

To install the integration service:

1. Copy the following folder to the `<IAHOME>\integrationservices` folder:

`xM-HP-ServiceManager-CM_2_3_2\components\alarmpoint-integration-agent\hpsmcm`

2. Open the `<IAHOME>\conf\IAConfig.xml` file and add the following line to the "service-configs" section:

`<path>hpsmcm/hpsmcm.xml</path>`

3. Open the `<IAHOME>\integrationservices\hpsmcm\hpsmcm.js` file and modify the following fields:
   - **smUrl**: replace "localhost" with your HP Service Manager server's IP Address.•
   - **calloutAnnotateUser** and **calloutAnnotatePass**: replace with user credentials for an HP Service Manager user with SOAP API, xMatters and HP Service Manager Administration capabilities/permissions. This user (configured in "Adding capabilities to users" on page 12) will be used to update the Journal Activities with phone callout annotations.
4. Restart the integration agent.
   - On Windows, the integration agent runs as a Windows Service; on Unix, it runs as a Unix daemon.

2.1.3 Installing the subscription files

To use the optional subscription panel, you must copy the JSP files into the xMatters installation folder. If you have more than one web server, repeat the following steps for each one.

To install the JSP files:

1. Copy the `xM-HP-ServiceManager-CM_2_3_2\components\alarmpoint\sub-panel\hpsmcm` folder from the extracted integration archive into `<xMHOME>\webserver\webapps\cocoon\alarmpoint\jsp\subscription`.
2. Restart the web server.

2.1.4 Installing the mobile access component files

To enable the mobile access component, you must copy the folder containing the JSP files into the xMatters mobile access folder. If you have more than one web server, copy the JSP files into the indicated folder on each web server.

To install the mobile access component files:

1. Copy the `xM-HP-ServiceManager-CM_2_3_2\components\alarmpoint\mobilegateway\hpsmcm` folder from the extracted integration archive to the `<xMHOME>\webserver\webapps\mobilegateway\jsp` folder on the xMatters server.

2. If your deployment is running the xMatters (alarmpoint) engine version 4.1 patch 006, you can update the xMatters mobile access to the latest images and styles:

    - Copy all of the JSP files in the `xM-HP-ServiceManager-CM_2_3_2\components\alarmpoint\mobilegateway\` folder to the `<xMHOME>\webserver\webapps\mobilegateway\jsp` folder on the xMatters server.

    - Copy the CSS file from the `xM-HP-ServiceManager-CM_2_3_2\components\alarmpoint\mobilegateway\` folder to the `<xMHOME>\webserver\webapps\mobilegateway\css` folder on the xMatters server.

2.1.5 Installing voice files

These files must be installed into any xMatters deployment running a voice Device Engine. For more information, refer to the *xMatters installation and administration guide*.

To install the voice files:

1. Copy all of the files in the `xM-HP-ServiceManager-CM_2_3_2\components\alarmpoint\vox\english` folder from the extracted integration archive to the following node installs folder:

`<xMHOME>\node\assets\resources\runtime\common\recordings\english\phrases`

Note: *This integration provides a complete set of English voice files.*

2.1.6 Installing the synchronization configuration files

The `AlarmPointSyncConfig.xml` and `AlarmPointSyncList.xml` files contain the configuration information for synchronizing Users, Groups, Devices and Coverages from HP Service Manager into xMatters.

Note that the synchronization process and all its files are identical for both the HP Service Manager Change Management and the HP Service Manager Incident Management integrations; if you have already installed the HP Service Manager Incident Management integration (version 2.3.2), you can skip this step.

To install the synchronization configuration files:

Copy the files in the `xM-HP-ServiceManager-CM_2_3_2\components\servicemanager\config\` folder from the extracted integration archive to `<SMHOME>`.

Note: *If these files are installed to a different location, you must modify the AlarmPointConfig script library within HP Service Manager.*

2.2 Configuring HP Service Manager

Configuring HP Service Manager to combine with xMatters requires the following steps:

- Import the xMatters tables and records.
- Modify the HP Service Manager triggers.
- Modify the AlarmPointConfig script.
- Add the SOAP API and xMatters capabilities to HP Service Manager User for xMatters web service calls.
- Update the IM.template.update and IM.update.incident forms to allow web service calls to update change requests.

- Expose the problem.type and product.type tables for web service calls.
- Remove the invalid data from HP Service Manager Categories.
- Add the syncContact call to the createUser 2 Wizard.
- Enable Resolve for Web Services.

2.2.1 Importing xMatters tables, records, and web services

The xMatters tables, records, and web services are used to inject change requests to xMatters for notification, and required by the HP Service Manager database for the integration.

The .sc files described in this section are shared between both HP Service Manager integrations; if you have already installed the HP Service Manager Incident Management integration (version 2.3.2), you should skip this step.

To import the tables, records, and web services:

1. Log in to the HP Service Manager Client Console.
2. Open the Administration perspective.
3. In the System Navigator, open the **Tailoring** folder, and then double-click the **Database Manager** object.
4. In the drop-down menu in the upper-right corner of the main object window, select **Import/Load**.
5. Click the folder icon beside the **File Name** field.
6. Select the first `.sc` file in the `xM-HP-ServiceManager-CM_2_3_2\components\servicemanager\imports\` directory.
7. Click **Open**.
8. Click **Load FG**.

Repeat the above steps for each of the remaining `.sc` files in the imports directory.

Note that when importing `AlarmPointForms.sc`, the error illustrated in the following figure may occur:
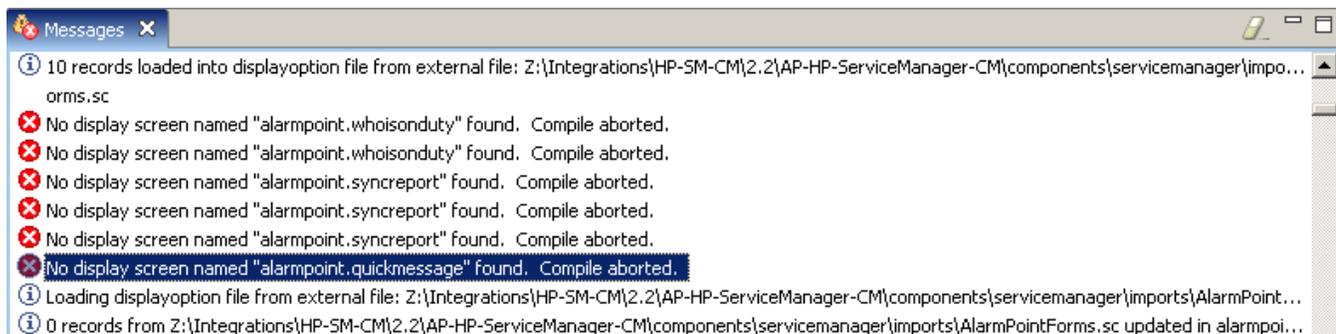
You can safely ignore this error message.

Service Manager Unload scripts

This integration includes a set of HP Service Manager unload scripts intended to help with the maintenance of the integration. The unload scripts are:

- AlarmPoint Forms: This script unloads all the capability words, dbdict definitions, displayoptions, displayscreens, formats, globallists, menus and scripts associated with the integration.
- AlarmPoint Integration: This unload script is a combination of the Forms, ScriptLibrary, Triggers, Unload and Web Services unload scripts.
- AlarmPoint Purge: This unload script is similar to Integration but instead of an unload this script performs a purge
- AlarmPoint ScriptLibrary: This unload script unloads the xMatters Java Scripts found in Script Library
- AlarmPoint Triggers: This unload script unloads the xMatters triggers associated with the integration.

- AlarmPoint Unload: This unload script unloads the unload scripts.
- AlarmPoint Web Services: This unload script unloads the External Access Definitions needed as part of the integration. Note that this does not unload a comprehensive list of the External Access Definitions that are required; it is an unload of the definitions which are unique to the integration and created to support the integration. Definitions such as IncidentManagement, which are updated to support the integration, must be managed manually.

2.2.2 Modifying the HP Service Manager triggers

Importing the `AlarmPointTriggers.sc` file loads all of the triggers for both of the xMatters for HP Service Manager integrations. If you want only the HP Service Manager Change Management integration (i.e., you are not installing the HP Service Manager Incident Management integration), you should delete the triggers specific to the other integration.

To delete the triggers:

1. In the HP Service Manager Database Manager's **Form** field, type `triggers`, and then press **Enter**.
2. In the **Trigger Name** field, type `alarmpoint` and then press **Enter**.
3. Locate and delete the following triggers:
    - alarmpoint.after.add.probsummary
    - alarmpoint.after.update.probsummary

2.2.3 Modifying the AlarmPointConfig script

The AlarmPointConfig script contains configuration information for web services, data synchronizations, and other parameters as described in the table below. This section describes how to modify the configuration script to allow HP Service Manager to inject change requests to xMatters through web services.

Note:	*The configuration files described in this section are shared between both HP Service Manager integrations; if you have already installed the HP Service Manager Incident Management integration (version 2.3.2), you can skip this step.*

To modify the AlarmPointConfig script:

1. In HP Service Manager System Navigator, open the **Tailoring** folder, and then double-click the **Script Library** object.
2. In the **Name** field type `AlarmPointConfig`, click **Search**.
3. Modify the variables in the following table to suit the configuration of your integration.
4. Click **Save, Compile**, and then **Execute**.
    - If HP Service Manager returns any errors after you click **Compile**, ensure that you have updated the file correctly.

AlarmPointConfig script variables

Variable Name	Value
web_service_url	The URL of the xMatters web service; for example: `"http://localhost:8888/api/services/AlarmPointWebService";`
web_service_user	The user name of the xMatters Web Service User (as configured in "Adding the Web Service User" on page 19). Best practices suggest that the User name be related to the purpose; e.g., "hpsm-xmwsu".
web_service_password	The password of the xMatters Web Service User (as configured in "Adding the Web Service User" on page 19).
alarmpoint_servicemanager_im_domain	The name of the xMatters Event Domain for notifications.

Variable Name	Value
default_alarmpoint_admin_group	The target name of the recipient (Group or User) in xMatters where synchronization error notifications are sent. This Group is created in "Creating a fail-safe Group" on page 26. **Note**: If a Group has a synchronization error and that Group has a supervisor, the Group supervisor will be notified instead of this recipient.
send_sync_error_notifications	If *true*, sends notifications to the default administration Group created in "Creating an Admin Group" on page 26 (or the Group Supervisor) when a record fails to synchronize with xMatters.
alarmpoint_servicemanager_sync_domain	The xMatters Event Domain for Service Manager. The value initializes the variable using an existing variable value, and should not include quotes. **Note**: If you are installing ONLY the HP Service Manager Change Management integration, change the variable name to: alarmpoint_servicemanager_cm_domain
sm_home	The location of the HP Service Manager installation; for example: `"C:\\Program Files (x86)\\HP\\Service Manager 9.30\\Server\\"`
config_file	The location of the `AlarmPointSyncConfig.xml`; for example: `sm_home + "AlarmPointSyncConfig.xml"`
synclist_file	The location of the `AlarmPointSyncList.xml`; for example: `sm_home + "AlarmPointSyncList.xml"`
ia_url	The URL of the integration agent HTTP listener; for example, `http://localhost:2010/agent` **Note**: If the integration agent is installed on the same computer as HP Service Manager, you do not need to modify this parameter.
alarmpoint_company	Name of the Company within xMatters; the default value is "Default Company".
sync_voice	If true, voice Devices will be synchronized; the default is true.
detailedSyncLogging	If true, displays filtering information when performing a synchronization; default is true.
detailEventLogging	If true, displays the APXML being sent to xMatters; default is false.
sync_cm3groups	If true, synchronize HP Service Manager Change groups when performing a synchronization; default is *true*.
sync_assignmentGroups	If true, synchronize HP Service Manager Assignment groups; default is *true*.
assignmentGroupSuffix	Specifies the string to add to the end of HP Service Manager Assignment group names when synchronizing. **Note**: This suffix prevents possible name collisions between Assignment and Change groups, which can have the same name in HP Service Manager, but must have unique names in xMatters.

Variable Name	Value
changeGroupSuffix	Specifies the string to add to the end of HP Service Manager Change group names when synchronizing. (See note above for more information)

2.2.4 Adding capabilities to users

The integration requires all users who are going to respond to notifications through xMatters to have both the "SOAP API" and "AlarmPoint" capabilities in addition to the appropriate xMatters configuration as described in "Configuring Users" on page 18. These users can update and annotate HP Service Manager change requests from xMatters through web service calls.

To add the required capabilities to a user:

1. In the HP Service Manager System Navigator pane, expand the **System Administration > Ongoing Maintenance** folders, and then double-click the **Operators** item.
2. In the **Login Name** field, type the login name of the user to whom you want to give response capabilities, and then click **Search**.
   - The default configuration of the xMatters Action Scripts uses the default HP Service Manager user "falcon" to make web service calls; if you want to use a different user, you must update the Action Scripts accordingly. For more information, see "Configuration Variable Reference" on page 54.
3. Select the **Startup** tab.
4. Under **Execute Capabilities**, if not already listed, add **SOAP API** and **AlarmPoint**.
5. Click **Save**.

xMatters may now use web service calls to connect to this HP Service Manager User.

2.2.5 Exposing additional fields for existing web services

For the mobile access component to access tables in HP Service Manager, you must expose the sub-tables in the extaccess table.

To expose a Service Manager table for Web Services:

1. In HP Service Manager System Navigator, open the **Tailoring** folder, and then double-click the Web Services object.
2. Double-click **WSDL Configuration**.
3. On the External Access Definition form, enter the name of the table you want to expose within the **Name** field, and then click **Search**.
   - If the form is automatically populated, ensure the Object Name matches the name used to construct SOAP Actions. If the Object Name does not match, modify it, or change the xMatters Configuration Rules.
   - Confirm that the automatically populated table contains the values described in "xMatters mobile access exposed table details", below.
   - If the form is not automatically populated, continue with the following steps to create the table.
4. Enter the following information into the form:

Field	Value
Service Name	Name of the service
Name	Name of the table you want to expose
Object Name	Name to use when constructing the SOAP Action

5. Click **Add**, and then click the **Data Policy** tab.
6. Modify the fields as follows:

Field	Value
Field	Name of the field in the table.
Caption	Name to use for the element in the web service instance element; if left blank, the Field Name is used by default.
Type	Used to convert the record value to or from an XML value. (This is not required for the xMatters mobile access.)

7. Click Save, and then click OK.

xMatters mobile access exposed table details

The following lists the tables and fields that must be exposed for the default xMatters mobile access integration.

Change Management table

- **Service Name**: ChangeManagement
- **Name**: cm3r
- **Object Name**: Change

Confirm that all of the following fields exist:

Field	Caption	Type
close,closing.comments	ClosingComments	
close,completion.code	ClosureCode	
description.structure,backout.method	BackoutMethod	
description.structure,description	Description	
description.structure,justification	OverallAssessment	
header,agreement.id	SLAAgreementID	IntType
header,approval.status	ApprovalStatus	
header,assigned.to	AssignedTo	
header,backout.duration	BackoutDuration	DurationType
header,brief.description	Title	
header,category	Category	
header,close.time	CloseTime	DateTimeType
header,company	Company	
header,coord.phone	CoordinatorPhone	
header,coordinator	ChangeCoordinator	

Field	Caption	Type
header,current.phase	Phase	
header,date.entered	DateEntered	DateTimeType
header,foreign.id	ExtProjectRef	
header,number	ChangeID	
header,open	Open	BooleanType
header,planned.end	PlannedEnd	DateTimeType
header,planned.start	PlannedStart	DateTimeType
header,priority.code	Priority	
header,reason	Reason	
header,requested.by	InitiatedBy	
header,risk.assessment	RiskAssessment	
header,status	Status	
header,subcategory	Subcategory	
header,type.level2	RFCType2	
intial.impact	Impact	StringType
middle,actual.cost	ActualCost	
middle,actual.outage.end	ActualOutageEnd	DateTimeType
middle,actual.outage.start	ActualOutageStart	DateTimeType
middle,actual.price	ActualPrice	
middle,assets	Assets	
middle,down.end	ScheduledDowntimeEnd	DateTimeType
middle,down.start	ScheduledDowntimeStart	DateTimeType
middle,estimate.description	EstimateDescription	
middle,estimate.price	EstimatePrice	StringType
middle,location	Location	
middle,logical.name	ConfigurationItem	
middle,misc.array1	MiscArray1	
middle,misc.array2	MiscArray2	
middle,misc.array3	MiscArray3	

Field	Caption	Type
middle,misc1	Misc1	
middle,misc10	Misc10	
middle,misc2	Misc2	
middle,misc3	Misc3	
middle,misc4	Misc4	
middle,misc5	Misc5	
middle,misc6	Misc6	
middle,misc7	Misc7	
middle,misc8	Misc8	
middle,misc9	Misc9	
middle,sched.outage.end	ScheduledOutageEnd	DateTimeType
middle, sched.outage.start	ScheduledOutageStart	DateTimeType
severity	Urgency	StringType
requestedDate	RequestedEndDate	DateTimeType
releaseCandidate	ReleaseCandidate	BooleanType
location.full.name	Location	StringType
emergency	Emergency	BooleanType
closureComments	ClosureComments	
affected.item	Service	
approvalComments	ApprovalComments	
header,assign.dept	AssignmentGroup	
release.type	ReleaseType	

2.2.6 Add the syncContact call to the createUser 2 Wizard

The AlarmPointUser.syncContact call must be added to the createUser 2 Wizard to enable synchronization of users upon their creation.

Note that while HP Service Manager's User Quick Add Utility has space for both first and last names, the xMatters synchronization parses the first word (up to the first space) within the Full Name field as the first name, and adds any remaining words to the last name. For example, if a user was added in HP Service Manager with a first name of "One Two" and a last name of "Three Four", xMatters would parse the entry as first name "One" and last name "Two Three Four".

Note: *If you have already installed the HP Service Manager Incident Management integration, you do not need to perform this step.*

To add the syncContact call:

1. In the HP Service Manager System Navigator pane, in the **Tailoring** folder, double-click **Wizards**.
2. In the **Wizard Name** field, type `createUser 2` (case sensitive), and then click **Search**.
3. Click the **Actions** tab, and then click the **Javascript** tab.
4. Add the following line to the end of the Javascript:

`system.library.AlarmPointUser.syncContact(vars.$contactname);`

5. Click **Save**.

Now when a user is created in HP Service Manager using the createUser 2 Wizard, they will be automatically synchronized with xMatters.

Note that in HP Service Manager, Login IDs are case sensitive; for example, "FALCON" and "falcon" represent two separate users. In xMatters, User IDs (the equivalent to Login IDs in HP Service Manager) are case insensitive: xMatters would not recognize "FALCON" and "falcon" as belonging to different Users.

2.2.7 Adding the syncContact call to the Process record

For the contact.do.save call to properly synchronize user information with xMatters, the AlarmPointUser.syncUser call must also be added to the Process record.

Note:	*If you have already installed the HP Service Manager Incident Management integration, you do not need to perform this step.*

To add the syncContact call:

1. In the HP Service Manager System Navigator pane, click **Tailoring > Database Manager**.
2. In the **Table** field, type `Process`, and then click the **Search** button.
3. On the Process Definition form, in the **Process Name** field, type `contacts.do.save`, and then click the **Search** button.
4. Click the **Final JavaScript** tab.
5. Add the following line to the JavaScript:

`system.library.AlarmPointUser.syncUser(record, oldrecord);`

6. Click **Save**.

2.3 Configuring xMatters

The following sections explain how to configure your xMatters deployment to combine with HP Service Manager.

2.3.1 Importing the script package

This integration includes a set of customized Action Scripts specific to HP Service Manager that must be imported into the xMatters scripts.

Note:	*This step requires the xMatters Developer IDE. For installation instructions and more information about scripting in xMatters, refer to the xMatters Online Developer's Guide.*

To import the xMatters Script Package:

1. Launch the IDE, and then configure the database connection.
2. Click **Workspace > Import**.

3. Select the `xM-HP-ServiceManager-CM_2_3_2\components\alarmpoint\scripts\AP-HP-ServiceManager-CM.aps` file extracted from the integration zip file, click **Open**., and then click **OK**.

4. When the script has finished importing, click **OK**.

5. In the Workspace pane, expand the **HP Service Manager Change Management (BUSINESS) > PRODUCTION > PROCESS** folder, and double-click the **initial** script.

6. In the initial script, locate the $main.xMatters_URL variable to specify the address of the xMatters web server.
   - This enables the HTML response options.

7. Locate the following variables and replace the value in quotes with your default HP Service Manager login credentials:
   - $main.servicemanager_username = "falcon"
   - $main.servicemanager_password = ""

8. Right-click the **HP Service Manager Change Management (BUSINESS)** folder, and then select **Validate**.

9. Right-click the folder again, and then select **Check In**.

10. In the Create Script Package dialog box, click **Create**.

11. In the Check In dialog box, click **Close**.

2.3.2 Configuring the Event Domain

By default this integration is set up to use an Event Domain of "hp_sm_change"; it is strongly recommended that you use this Event Domain name. For the integration to be successful, the Event Domain name must match the AGENT_CLIENT_ID constant defined in the integration agent javascript file (`hpsmcm.js`).

The xMatters relevance engine web server must be running to perform this portion of the integration.

To define an Event Domain:

1. Sign on to xMatters as a Company Administrator, and click the **Developer** tab.

2. In the Developer menu on the left side of the screen, click **Event Domains**.

3. On the Event Domains page, click **Add New**.

4. Enter the following information into the form:
   - **Name**: hp_sm_change
   - **Description**: HP Service Manager Integration
   - **Script Package**: HP Service Manager Change Management

5. Click **Save**.

Defining an Integration Service

The mobile access component for this integration uses a default integration service of "hpsmcm"; it is strongly recommended that you use this default integration service name. For the installation to be successful, the integration service name must match the name specified in the AGENT_CLIENT_ID variable in the `hpsmcm.js` file and the hpsmcm.xml file installed on the integration agent.

To define an Integration Service:

1. In xMatters, on the Event Domains page, click the **hp_sm_change** Event Domain.

2. On the Event Domain Details page, in the Integration Services area, click **Add New**.

3. Enter the following information into the form:
   - **Name**: hpsmcm
   - **Description**: HP Service Manager Integration Service
   - **Path**: hpsmcm/menu.jsp

4. Click **Save**.

2.3.3 Defining Custom Fields

This integration uses custom fields defined in xMatters to obtain authentication credentials for submitting notification responses and annotations to HP Service Manager. These custom fields enable the response option list to be displayed on notifications.

The mobile access component also uses these custom fields to obtain authentication credentials for logging into HP Service Manager. These custom fields are optional for the mobile access component as a login page will be displayed if the custom fields are not provided.

By default, the custom fields are "HP SM Login" and "HP SM Password"; it is strongly recommended that you use these default field names.

Note: *If you have already installed the HP Service Manager Incident Management integration, you do not need to perform this step.*

To define the custom fields:

1. In xMatters, click the **Admin** tab, and then, in the Administration menu on the left side of the screen, click **Custom Fields**.
2. Click **Add New**, and then enter the following information into the form:
   - **Field Name**: HP SM Login
   - **Type**: Text
3. Click **Save**.
4. Click **Add New**, and then enter the following information into the form:
   - **Field Name**: HP SM Password
   - **Type**: Password
5. Click **Save**.

Note: *For more information about custom fields, see the xMatters installation and administration guide.*

2.3.4 Configuring Users

Each xMatters User that will be notified and respond to notifications must be configured to allow xMatters to communicate with HP Service Manager as that User. Note that each User must also be configured in HP Service Manager, as described in "Adding capabilities to users" on page 12.

Note: *If you have already installed the HP Service Manager Incident Management integration, you do not need to perform this step.*

To configure a User for mobile access to HP Service Manager:

1. In xMatters, click the **Users** tab.
2. Use the Find Users page to locate the User you want to configure and view their details.
3. On the Details for User page, select the **Has Mobile Access** check box.
   - If you defined the custom fields, enter their HP Service Manager login credentials in the HP SM Login and HP SM Password custom fields.
4. In the Common Tasks pane, click **User Devices**.
5. Verify that an appropriate Device exists and that it is enabled.
6. Click **Save**.

Note:	*If you have no Users in the system, you can use the default demonstration User, "bsmith". If this User does not exist, create a User with the User ID "bsmith", and add a virtual text phone Device. Ensure that the User also has access to the mobile access component. For more information and instructions on how to perform these tasks, refer to the xMatters user guide.*

2.3.5 Adding the Web Service User

This integration requires a Web Service User for the HP Service Manager events to be injected to xMatters using web services, and for the User and Group synchronization process to communicate via web service calls.

The xMatters Web Service User must have the same User ID and Password that you configured within the AlarmPointConfig script; for more information, see "Modifying the AlarmPointConfig script" on page 10.

Note:	*If you have already installed the HP Service Manager Incident Management integration, you do not need to perform this step.*

To set up a Web Service User:

1. In xMatters, click the **Users** tab, and then click **Add Web Service User**.
2. Enter the following information into the form:
   - **User ID**: hpsm-apwsu
   - **Description**: HP Service Manager - xMatters Web Service User
   - **Password**: type the User's password (default is password)
   - **Verify Password**: retype the password to verify it.
3. Add the following web services to the Allowed Web Services list:
   - Add Coverage
   - Add Device
   - Add Group
   - Add Team
   - Add User
   - Delete Coverage
   - Delete Device
   - Delete Group
   - Delete Incident
   - Delete Team
   - Delete User
   - Find Devices
   - Find Groups
   - Find Persons
   - Find Who Is On Duty
   - List Group Members
   - Query Group
   - Query User
   - Update Coverage
   - Update Device
   - Update Group

- Update Team
- Update User

4. Click **Save**.

2.3.6 Configuring the Subscription Panel

This integration is packaged with an optional Subscription panel which reads certain list values from HP Service Manager through web services. This feature allows Administrators to change the source of the content supplied for these lists from web service calls to predefined predicate value lists.

To allow Users to subscribe to specific criteria on injected events, you must configure the Subscription panel. Configuring the Subscription panel requires the following steps:

- Define the Event Domain predicates
- Define a Subscription Domain
- Configure the Subscription JSP
- Create a Subscription
- Create a fail-safe Group

Note: *The Subscription Panel file, SMCMSubscriptionForm.jsp, must be copied to the correct directory during the integration installation, as described in "Installing the subscription files" on page 7.*

Defining Event Domain predicates

The default Subscription panel provided with the integration requires the following Event Domain predicates:

- affected_ci
- assigned_to_dept
- category
- coordinator
- impact_assessment
- initiator
- phase
- priority
- service
- subcategory
- trigger_rule
- urgency

Note: *You can also use the following steps to add other predicates that you consider important and which you plan to add to the integration. For more information, see "Adding new parameters" on page 44.*

To define the Event Domain predicates:

1. In xMatters, click the **Developer** tab.
2. On the Event Domains page, click hp_sm_change.
3. On the Event Domain Details page, in the Predicates section, click **Add New**.
4. Add the following predicates to the Event Domain:

Event Domain predicates

Predicate	Type	Important	Values	Description
affected_ci	List		Automatically generated	
assigned_to_dept	Text			
category	List		Manually entered	A list of categories that are currently marked as active in HP Service Manager and may be listed on a ticket. For example: CI Group, Default, Hardware, Unplanned Change, Release Management, etc.
coordinator	Text			
impact_assessment	List	Yes	Manually entered	The value of the impact drop-down list on the change request. By default, the possible values are: ● 1 - Enterprise ● 2 - Site/Dept ● 3 - Multiple Users ● 4 - User
initiator	Text			
phase	List		Manually entered	A list of phases used in your deployment.
priority	List	Yes	Manually entered	The default values are: ● 1 - Critical ● 2 - High ● 3 - Average ● 4 - Low
service	List		Automatically generated	
subcategory	List		Automatically generated	
trigger_rule	List		Automatically generated	A list of reasons the event was triggered, defined in the AlarmPointEvent script library in HP Service Manager.
urgency	Lsit	Yes	Manually entered	The urgency of the change request. By default, the possible values are: ● 1 - Critical ● 2 - High ● 3 - Average ● 4 - Low

For more information on the automatically generated list predicates, see "Configuring the Subscription JSP", below.

Defining a Subscription Domain

The Subscription Domain is the reference point of the optional Subscription panel and allows you to control who can create Subscriptions, how recipients can respond to Subscription notifications, and which Event Domain predicates can be used to create a Subscription. You must create a Subscription Domain before you can create Subscriptions with the new panel.

To create a Subscription Domain:

1. On the Developer tab, in the Developer menu, click **Add Subscription Domain**.
2. In the **Event Domain** drop-down list, select hp_sm_change, and then click **Continue**.
3. On the Subscription Domain Details page, in the **Name** field, type HP Service Manager CM.
4. In the **Type of Management** drop-down list, select **Both**.
   - By default, Subscriptions are non-FYI (i.e., they support response options). To disable two-way Subscription notifications, select the One-Way check box.
5. In the **Custom Page URL** field, enter the following path:

`jsp\subscription\hpsmcm\SMCMSubscriptionForm.jsp`

6. Click **Continue**.
7. On the Select Appropriate Response Choices page, click **Continue**.
8. On the Select Appropriate Predicates page, add all of the predicates to the **Applied Predicates** list, and then click **Continue**.
9. On the Select Roles page, specify the Roles you want to be able to create Subscriptions on the Domain, and then click **Save**.
   - For default (out-of-box) deployments, the recommended Roles are: Developer, Full Access User, Group Supervisor, Person Supervisor, Standard User, Subscription Supervisor, and Support User.

Note: *For more information about working with Event and Subscription Domains, see the* xMatters installation and administration guide.

Configuring the Subscription JSP

You can use either of the following methods to populate the predicate list values on the Subscription Panel:

- Manually specify the predicate list values in the web user interface.
- Using web services, query HP Service Manager for possible values, and automatically populate the predicate lists with the results of the web service call.

Note: *Changing Subscriptions by adding or removing Event Domain predicates may cause existing Subscriptions to fail. For more information about working with Event and Subscription Domains, see the* xMatters installation and administration guide.

Specifying predicate lists manually

To configure the Subscription panel in a demo mode, using predefined predicate list values, you must modify the Subscription JSP.

To manually populate the predicate lists:

1. Open the `<xMHOME>\webserver\webapps\cocoon\alarmpoint\jsp\subscription\hpsmcm\SMCMConfig.jsp` file in a text editor.
2. Set the Boolean variable QUERY_PREDICATE_VALUES to *false*.
3. Save and close the JSP file.
4. In xMatters, click the **Developer** tab.

5. On the Event Domains page, click **hp_sm_change**.

6. On the Event Domain Details page, in the Predicates list, click the name of the predicate for which you want to define the values.

7. Add to the predicate list values, and then click **Save**.

8. Repeat steps 6 and 7 for each predicate to which you want to assign values.

The predicate lists on the Subscription will now be populated with the predefined list values instead of the web service call results.

Populating predicate lists automatically

If you want to populate the predicate values lists from HP Service Manager through web service calls rather than the predefined predicate list values, you must configure the connection properties within the JSP file.

To configure the Subscription JSP to connect through web services:

1. Open the `<xMHOME>\webserver\webapps\cocoon\alarmpoint\jsp\subscription\hpsmcm\SMCMConfig.jsp` file in a text editor.

2. Within the Subscription JSP, locate the following section:

```
final String SERVICE_MANAGER_URL = "http://localhost:13080/sc62server/ws";
final String SERVICE_MANAGER_USER = "falcon";
final String SERVICE_MANAGER_PASSWORD = "";
```

3. Replace the value within quotes for each parameter as described in the following table:

Subscription JSP parameters

Parameter	Value
SERVICE_MANAGER_URL	The URL for the HP Service Manager web services.
SERVICE_MANAGER_USER	User name of the HP Service Manager Web Services User.
SERVICE_MANAGER_PASSWORD	Password for the HP Service Manager Web Services User.

4. Save and close the JSP.

Creating a Subscription

You can now use the custom Subscription Panel to subscribe to HP Service Manager events that match specific criteria. For example, you could configure a subscription that would send an informational notification to a specific User each time an event entered the system that was of critical severity. These notifications, and there responses, do not affect the normal progression of an event through the system.

To create a Subscription:

1. On the Alerts tab, in the Alerts menu, click **My Subscribed Alerts**.

2. Select the HP Service Manager CM Subscription Domain, and click the **Add New** link.

3. On the Subscription Details page, specify a name for the Subscription, and set the Subscription criteria using the tabs.

4. When you are satisfied with the criteria, click **Save** to create the Subscription.

- The Change Information tab (Ctrl-click to select more than one value):

- The Search Subcategories page; you can use this page to further refine your Subscription by specifying which Subcategories within the selected Categories you want to include:

Search Subcategories

To find a list of available subcategories, specify your search criteria, and then click "Get Subcategories". The search results will include subcategories within following categories only: CI Group, Default, Hardware, KM Document.

Name	Operator	Value
Subcategory	CONTAINS	

[Get Subcategories]

Available Subcategories:

[Add >]
[< Remove]

Selected Subcategories:

[Save]

- The Preferences tab (defines the Timeframe and Overrides applied to events for Subscription notifications):

Change Information | **Preferences**

Timeframe

Start Date: 2010/04/21 *(yyyy/mm/dd)
Start Time: 00:00 24 hours 0 minutes *
Timeframe ending the next day at 00:00.
On the following days: ☑ Sun ☑ Mon ☑ Tue ☑ Wed ☑ Thu ☑ Fri ☑ Sat
Time Zone: US/Pacific

Overrides

Device Types: ☐ All Devices ☑ Email ☑ Instant Message ☑ Text Devices ☑ Voice Devices
Override User Device Timeframes: ☐
Ignore Device Delays: ☐
Override Device Severities and Use All: ☐
Notification Delay: 0 min

[Save]

- You can review the Subscription details at any time on the Summary tab:

Creating a fail-safe Group

If an event is submitted to xMatters when the fail-safe functionality is enabled, and there is no subscription that matches the event, xMatters sends the notification to the fail-safe recipient. The fail-safe recipient is typically a Group, but can be configured as a User.

Note:	*If you have already installed the HP Service Manager Incident Management integration, you do not need to perform this step.*

To create a fail-safe Group:

1. In xMatters, click the **Groups** tab.
2. Create a new Group named HP SM FailSafe, with at least one User as a Team member to receive notifications.

For more information about creating Groups and Teams, see the xMatters user guide.

Note:	*If you want to use an existing Group or a different Group name, modify the value for the $fail_safe_group variable defined in the initial PROCESS script in the xMatters scripts. You can also eliminate notifying any fail-safe Group by setting $fail_safe to* disabled.

2.3.7 Creating an Admin Group

If a synchronization error occurs and the send_sync_error_notification configuration variable is set to true in the AlarmPointConfig script, then a notification is sent out to the recipient defined in the default_alarmpoint_admin_group variable in the AlarmPointConfig script. The default value is set to "superadmin".

- If you do not want notifications to be sent out due to synchronization errors, set the send_sync_error_notification variable in the AlarmPointConfig script to *false*.

Note:	*If xMatters was installed with non-nmerged admin and root accounts, the value for the default_alarmpoint_admin_ group variable should be changed to "companyadmin".*

To configure a HP Service Manager Admin Group, click the Groups tab in xMatters, and create a new Group named SM Admin, with at least one User as a Team member to receive notifications. Update the default_alarmpoint_admin_group variable in the AlarmPointConfig script with the name of the new Group.

Note that if you have already installed the HP Service Manager Incident Management integration, you do not need to do this step.

Note:	*For more information about creating Groups and Teams, see the xMatters user guide.*

2.4 Configuring Synchronizations

The xMatters for HP Service Manager Change Management integration supports one-way synchronization of Groups (both Assignment and Change groups in HP Service Manager), Teams, Users, Devices and Coverages from HP Service Manager into xMatters. To enable synchronization and customize it to your business behavior, two configuration files are provided: `AlarmPointSyncConfig.xml` and `AlarmPointSyncList.xml`.

Modify these files according to your desired business behavior; the following sections provide an overview of these files and their configuration options.

Note:	*If you have already installed the HP Service Manager Incident Management integration, you do not need to perform this step.*

Synchronization Troubleshooting

When performing a synchronization, open the HP Service Manager messages panel. This allows you to see successful completion of synchronizations such as modifying Groups, Group memberships, Users, and User Devices. Alternatively, you can use the Sync Report under the Menu Navigation AlarmPoint entry to determine if any errors occurred after synchronization.

2.4.1 Synchronization configuration file

The `AlarmPointSyncConfig.xml` file defines the synchronized values for Groups, Teams, Users, Devices and Coverages. The file included with the integration has default values to use for each object type, but can be customized to use different values for a specific instance of an object.

Note that in HP Service Manager, Login IDs are case sensitive; for example, "FALCON" and "falcon" represent two separate users. In xMatters, User IDs (the equivalent to Login IDs in HP Service Manager) are case insensitive: xMatters would not recognize "FALCON" and "falcon" as belonging to different Users.

Note:	*If have already installed the HP Service Manager Incident Management integration, you do not need to perform this step.*

Default values

Each default element must specify a value for all possible fields (refer to the following section for a complete list of possible fields). Each default element must also specify the seedOnly and deletable attributes.

If the seedOnly attribute is *true*, then that object will only be added to xMatters when it is initially synchronized and will no longer be updated. If the seedOnly attribute is *false*, any modifications to the object done in xMatters will be overwritten when that object is updated in HP Service Manager.

If the deletable attribute is *true*, then that object will be removed from xMatters when it is deleted from HP Service Manager; otherwise, it will remain in xMatters indefinitely and must be deleted manually.

The following elements must exist in the AlarmPointSyncConfig.xml file:

- default-user
- default-email
- default-work-phone
- default-home-phone
- default-mobile-phone
- default-assignment-group
- default-change-group

- default-team
- default-coverage

By default, all objects are deletable and seedOnly except for email, work-phone, home-phone, and mobile-phone, which will always update in xMatters.

There are three different ways that you can specify a default value to synchronize with xMatters:

1. Set a default value for a field:
   - **default**: the value for this field

For example, the role for the following will be standard user unless it is overridden:

```
<role default="standard user"/>
```

2. Use a regular expression to extract a value from a field:
   - **default**: the default value for this field if the regular expression does not match
   - **field**: the column in this table to apply the regular expression
   - **regex**: the regular expression used to extract a value
   - **index**: when you use Groups, this is the index of the Group you want to use (where the first Group is 1)

For example, the area-code for the following will be the first submatch when the '\D*(\d{0,3})\D*([0-9]{1}[0-9., -]+)\D*' regular expression is applied to the contact_phone field

```
<area-code field="contact_phone" regex="\D*(\d{0,3})\D*([0-9]{1}[0-9., -]+)\D*" index="1"/>
```

3. Map a field's value to a desired value:
   - **default**: the default value to use if there is no match
   - **map** Element: the field attribute specifies the column in the table to match; the value attribute specifies the value of the field to match on; and, the text of this field is the value to be saved

For example, the language for the following will be English, unless the value of the language column in the record is either de or fr:

```
<language default="English">
  <map field="language" value="de">German</map>
  <map field="language" value="fr">French</map>
</language>
```

Object-specific values

All object-specific elements will override any default value element and can override the seedOnly and deletable attributes.

default-user Fields

Field	Description	Possible Values
active	Whether this User is active	true, false
first-name	User's first name	Any string
last-name	User's last name	Any string
has-mobile-access	Mobile access flag	true, false
site	User's Site	Valid xMattersSite name
language	User's language	Valid xMatters language

Field	Description	Possible Values
timezone	User's time zone	Valid xMatters time zone
role	User's xMatters Role	A comma-delimited list of valid xMattersRoles.
supervisor	User's xMatterssupervisor	Valid xMattersUser target name. If the supervisor in HP Service Manager is not a valid User in xMatters, the synchronization for the User/Group will fail.
has-phone-login	Phone login flag	true, false
phone-login	User's phone login	Unique string containing only digits
phone-password	User's phone password	String containing only digits
ldap-domain	User's web login LDAP domain	Valid xMatters LDAP domain
web-login	User's web login	Unique web login
web-password	User's web login password	Any string
web-login-type	Defines whether the web login is a native xMatters login or an LDAP authentication	NATIVE, LDAP
externally-owned	Indicates whether the User is externally-owned	true, false
custom-field-name	The name of the Custom Field in xMatters that will contain the value of SM userId to be used by xMatters mobile access login and notification responses.	Any string. Default is "HP SM Login"
custom-field-value	The value to use in the Custom Field defined in the custom-field-name field.	Any string

default-email Fields

Field	Description	Possible Values
name	Device name (must match a Device name configured in xMatters)	Valid xMatters email Device name
active	Whether this Device is active (i.e., available to receive notifications.	true, false
default	Whether this Device should be used as the User's default Device	true, false
delay	Device's delay setting	Integer value (time in minutes)
externally-owned	Indicates whether the Device is externally-owned	true, false
priority-threshold	Device's priority threshold	LOW, MEDIUM, HIGH

Field	Description	Possible Values
user-service-provider-id	ID of the User Service Provider (is ignored if the user-service-provider-name is present)	Long
user-service-provider-name	Name of the User Service Provider (takes priority over provider ID)	Valid xMatters User Service Provider name
address	Device's email address	Valid email address

default-work-phone, default-home-phone, and default-mobile-phone Fields

Field	Description	Possible Values
name	Device name (must match a Device name configured in xMatters)	Valid xMatters email Device name
active	Whether this Device is active	true, false
default	Whether this Device should be used as the User's default Device	true, false
delay	Device's delay setting	Integer (time in minutes)
externally-owned	Indicates whether the Device is externally-owned	true, false
priority-threshold	Device's priority threshold	LOW, MEDIUM, HIGH
user-service-provider-id	ID of the User Service Provider (is ignored if the user-service-provider-name is present)	Long
user-service-provider-name	Name of the User Service Provider (takes priority over provider ID)	Valid xMatters User Service Provider name
area-code	Device's area code	String containing only digits
country-code-override	Device's county code	Valid two letter country code
extension	Device's extension	String containing only digits
number	Device's phone number	String matching [0-9]{1}[0-9.,-]+

default-assignment-group and default-change-group Fields

Field	Description	Possible Values
description	Group's description	Any string
timezone	Group's time zone	Valid xMatters time zone
site	Group's Site	Valid xMatters Site
active	Whether this Group is active	true, false
allow-duplicates	Allow duplicates flag	true, false

Field	Description	Possible Values
externally-owned	Externally owned flag	true, false
observed-by-all	Observed by all flag	true, false
observer	Target name of a User to be the Group's observer	Valid xMatters User target name
supervisor	Target name of a User to be the Group's supervisor	Valid AlarmPoint User target name
use-default-device	Use default Device flag	true, false

default-team Fields

Field	Description	Possible Values
suffix	Team name is generated by the Group name and the suffix	Any string not containing '|'
description	Description for the Team	Any string
externally-owned	Externally owned flag	true, false
reuse	Reuse Team flag	true, false
rotation-interval	Rotation interval (only used if type is ROTATION)	Integer value (time in minutes)
rotation-start	Rotation start date (only used if type is ROTATION)	Date in the format 'dd/mm/yyyy h:mm:ss AM/PM'
rotation-unit	Rotation units (only used if type is ROTATION)	DAYS, MONTHS, WEEKS
type	Team type	BASIC, EVENT_ROUND_ROBIN, ROTATION
member-type	Team member type (should leave as PERSON for the integration)	PERSON, GROUP, TEAM, DEVICE
member-delay	Delay between Team members	Integer value
member-in-rotation	Are Group members in the rotation	true, false

default-coverage Fields

Field	Description	Possible Values
suffix	Coverage name is generated by the group name and the suffix	Any string not containing '|'
start-time	Start time for this shift	Time in the format "hh:mm"
duration-hours	Duration of the shift in hours	Integer value 0 <= N <= 24
duration-minutes	Duration of the shift in minutes (added to duration in hours)	Integer value 0 <= N <= 60
exclude-holidays	Exclude holidays flag	true, false

Field	Description	Possible Values
sunday	Coverage on Sunday	true, false
monday	Coverage on Monday	true, false
tuesday	Coverage on Tuesday	true, false
wednesday	Coverage on Wednesday	true, false
thursday	Coverage on Thursday	true, false
friday	Coverage on Friday	true, false
saturday	Coverage on Saturday	true, false
recurrence-end-date	End date for the coverage	Time in the format dd/mm/yyyy h:mm:ss AM/PM
recurrence-frequency	Frequency of the recurrence	DAILY, WEEKLY, MONTHLY
recurrence-interval	Interval of the recurrence	Integer value
recurrence-no-end-date	No end date flag	true, false
recurrence-occurences	Number of recurrences for this coverage	Integer value
recurrence-start-date	Start date of the recurrence	Time in the format dd/mm/yyyy h:mm:ss AM/PM

2.4.2 Synchronization list file

The `AlarmPointSyncList.xml` file is used to define which operators and assignments should be synchronized with xMatters. The XML file contains a list of user elements with a name attribute matching an operator ID and a list of group elements containing a name attribute matching an assignment name.

The user and group elements have an action attribute which tells the integration whether you want to include only the user and group in the list for synchronization and exclude all other users and groups, or whether you want to exclude the user and group in the list for synchronization and include everyone else. The following is an example of what the file would look like if you want to synchronize only the TELECOMS assignment and want to synchronize all the operators except for FALCON:

```
<synclist>
  <users action="exclude">
    <user name="FALCON"/>
  </users>
  <groups action="include">
    <group name="TELECOMS"/>
  </groups>
</synclist>
```

2.5 Configuring custom forms

This integration includes the following custom HP Service Manager forms:

- Sync Report
- Quick Message
- Who Is On Duty Report.

These forms are used to synchronize HP Service Manager information with xMatters, send messages to Groups and Users, and determine who is on duty for a specific day.

2.5.1 Sync Report

The Sync Report can begin full system synchronization and view the last status of objects synchronized with xMatters. The behavior of the page is as follows:

- Click **Show Errors** to display all synchronization records that are currently in an error state.
- Click **Show All** to display all synchronization records.
- Select **Sync Now** to initiate an attempt to synchronize the entire system.
- Click **Filter** to display all synchronization records that match the specified filter criteria. These filter fields use the StartsWith operator.

2.5.2 Quick Message

The Quick Message page is used to send a quick message to a list of groups or operators. All messages from this screen will contain the following information:

- **Operator**: the user who initiated this message.
- **Reference ID**: a field that is meant to help associate this message with an existing change request. This is autofillable by setting the `$G.alarmpoint.quickmessage.incidentId` global variable.
- **Assignment and Change Groups**: a list of groups you want to target with this message.
- **Operators**: a list of operators you want to target with this message. This is autofillable by setting the `$G.alarmpoint.quickmessage.users` global variable.
- **Subject**: reserved for the subject of the message you want to send to the targeted groups and operators.
- **Message**: reserved for the message you want to send to the targeted groups and operators.

You should now be able to open the Update Change form and see the Quick Message button. This allows you to send a quick message to a user with the change request ID auto-populated for the selected change request, as illustrated by the following figure:
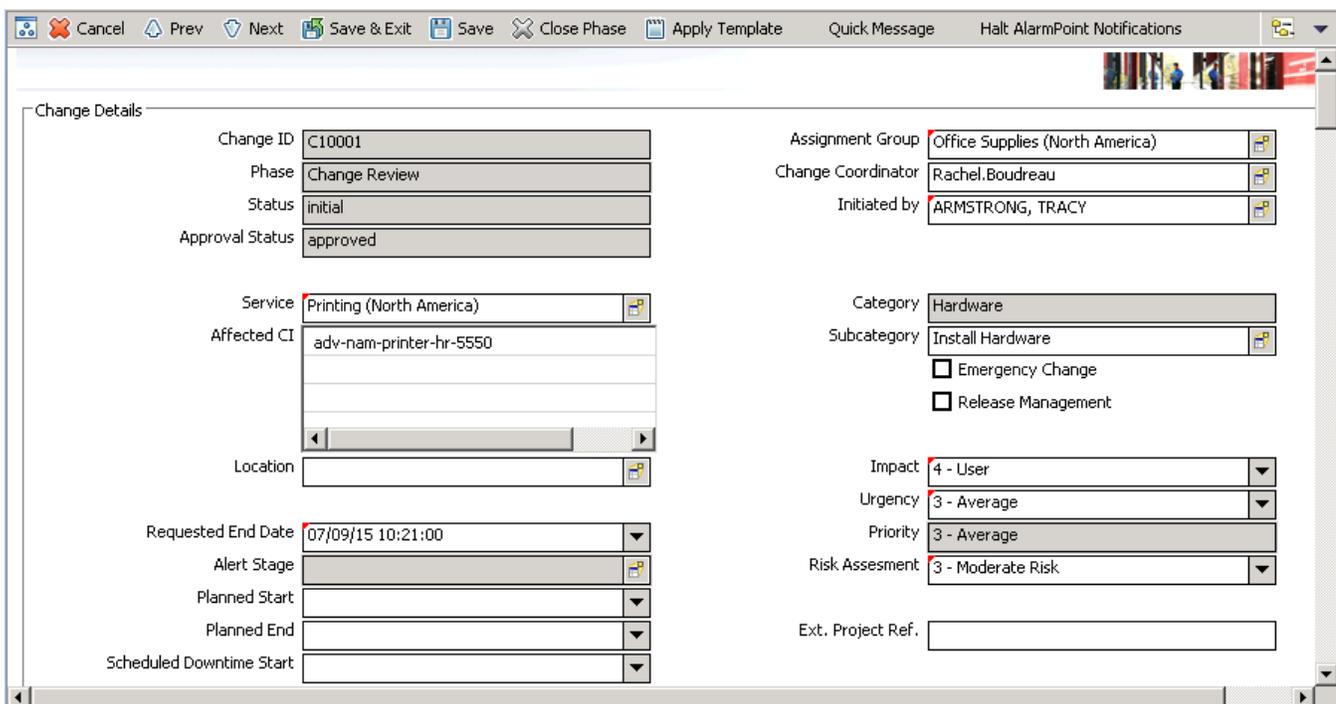
2.5.3 Who Is On Duty Report

The Who Is On Duty Report is a method of determining who is on duty for a Group for a specified day. The behavior of this page is as follows:

- The **Assignment Group** and **Change Group** selector controls whether Assignment or Change Groups will be shown in the Group field.
- The **Group** field is used to select the Group for which you want to run the report. Based on the selected radio button, you can list Assignment Groups or Change Groups.
- The **Start Date** field is used to select the day on which you would like to run. This report always generates data for only a single day.
- Clicking **Check** makes the request to the server and displays the results in the HTML window at the bottom of the page.
- The **Recipients** list is automatically populated with the Group name, Group member names, and the Group Supervisor names. Clicking **Send Message** on this page will take you to the Quick Message page and auto-populate the Operators field with the selected Recipient.

Note: *The Who Is On Duty Report is available only to xMatters enterprise customers.*

2.5.4 Adding buttons and Menus for custom forms

The `alarmpoint.syncreport`, `alarmpoint.quickmessage` and `alarmpoint.whoisonduty` scripts are provided with the integration and can be used with the script.execute RAD application. If you set the global variables `$G_alarmpoint_quickmessage_incidentId` or `$G_alarmpoint_quickmessage_users` before running the `alarmpoint.quickmessage` script, the incident ID and operators fields can be automatically populated with data.

To add Custom Form menu items:

1. In Service Manager, open **Menu Navigation > Tailoring > Tailoring Tools > Menus**.
2. In the **Menu Name** field, type the name of the appropriate menu for your deployment (e.g., HOME), and then click **Search**.
3. Add the following values to the table:

Option Number	Description	Application	Parameter	Value	Condition
Next available number	xMatters	menu.manager	name	AlarmPoint MAIN	index("AlarmPoint", $lo.ucapex)>0

Note: *Ensure that you record the Option Number assigned to each button and menu, as you will need to reference these numbers when adding the custom form buttons in the next section.*

4. Click **Save**, and then click **Save** again.
   - If you receive an error message after clicking Save the first time, you can safely ignore it.
5. Refresh the System Navigator.

You should now see a new xMatters navigation group in the System Navigator with separate entries for each custom form.

Note: *The buttons and menu items are visible only to users with the "AlarmPoint" capability. For information about how to add the capability, refer to "Adding capabilities to users" on page 12.*

The integration also installs a display option control, with a unique id of alarmpoint.apm.edit.problem.haltincident, labelled Halt AlarmPoint Notifications. Users should be able to open the Update Incident form and have the Halt AlarmPoint

Notifications control available allowing you to halt all xMatters notifications for that incident. Note that the default Balloon Help value for alarmpoint.apm.edit.problem.haltincident is 200, but this can be changed if your Service Manager installation already has a display option associated with apm.edit.problem that uses a value of 200.

Chapter 3: Integration Validation

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

- HP Service Manager Change Management
- xMatters relevance engine
- 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 Service Manager for notification delivery and response, Subscription Panel functionality, and synchronization configuration. This section also includes an explanation and demonstration of how to query HP Service Manager via the mobile access component using a BlackBerry.

3.1 Validating User and Group Synchronization

The following validates that communication from HP Service Manager to xMatters for User and Group Synchronization is properly configured.

Note that the User and Group synchronization process is handled via direct web service calls between xMatters and HP Service Manager; synchronization relies upon the correct configuration of the web services user, as described in ."Adding the Web Service User" on page 19

Note: *For this example, it is recommended that you set the Email Device's User Service Provider to use virtual email. This will help when troubleshooting problems in later testing.*

To test the User and Group Synchronization:

1. Edit the `<SMHOME>\AlarmPointSyncList.xml` file as follows:

```
<synclist>
  <users action="include">
  </users>
  <groups action="include">
  </groups>
</synclist>
```

2. Restart your HP Service Manager client.

3. Add a new Operator to HP Service Manager:

    - In HP Service Manager, open **Menu Navigation > System Administration > Ongoing Maintenance > User Quick Add Utility**.
    - Specify the required information.
    - Click **Next**, **Finish**, and then **OK**.

4. In HP Service Manager, open **Menu Navigation > System Administration > Ongoing Maintenance > Groups > Incident Management Assignment Groups**.

5. Type the name of the assignment group you want to use for testing purposes (eg. `TESTSYNC`).

6. Select the **Operators** tab, add the Operator you just created, click **Add**, and then click **OK**.

7. Edit the `AlarmPointSycnList.xml` file to look like the following (replace `operatorname` and `assignmentname` with the Operator and Assignment Group you just created):

```
<synclist>
  <users action="include">
    <user name="operatorname"/>
```

```
      </users>
      <groups action="include">
        <group name="assignmentname"/>
      </groups>
    </synclist>
```

8. Restart the Service Manager client

9. Open the custom Sync Report form (see "Adding buttons and Menus for custom forms" on page 34 for instructions how to add a menu item for this).

10. In the drop-down list in the upper right, select **Sync Now**.

   - This should synchronize the operator and assignment that you just added to HP Service Manager into xMatters as a User and Group.

11. Log in to xMatters to check that the User and Group was properly synchronized.

Note: *The xMatters User target name is the HP Service Manager contact's operator ID and the xMatters Group name is the HP Service Manager assignments name.*

3.2 Triggering a notification

In this example, an event will be injected to xMatters for notification to the Group configured in the User and Group Synchronization example.

1. In Service Manager, open **Menu Navigation > Change Management > Changes > Open New Change**.

2. Specify the following values in the required fields:

   - **Impact Assessment**: either 1- Enterprise or 2 - Site/Dept.
   - **Urgency**: either 1 - Critical, or 2 - High.

3. Enter values for all other required fields.

4. Click **Submit**.

This should inject the change request parameters into xMatters, triggering a new notification targeting the group you just synchronized with xMatters in the User and Group Synchronization example.

3.3 Responding to a notification

This section describes how to respond to a notification from xMatters. In the following example, the notification is received on a BlackBerry Device, but the process is similar for all Devices.

To respond to a notification:

1. When a notification arrives for the User, the Device indicates the number of calls received:

2. Opening the notification displays its details:

3. Scrolling down will display the remainder of the details, and the list of possible replies:

Urgency: 2 - High
Category: Hardware
Approval Status: pending
Assignment Group: Network Operations
Initiator: BUCKLE, EMILY
Date Initiated: Mon Mar 21 2011 11:41:27 GMT-0700 (Pacific Daylight Time)
Service: Education
Title: Mail Server Outage
Description: Mail Server not working potentially due to power outage

Provided you can connect to the xMatters Web Server, you can respond by selecting one of the following links:

1. Approve
2. Deny
3. View Change

4. To respond to the notification, the User clicks a response choice, and xMatters updates the change request in HP Service Manager.

For more information about response choices, and changing the options available to Users, see "Response choices" on page 44.

3.4 Viewing response results

When an action is taken on an xMatters notification, that action is reflected in the original change request. When xMatters makes changes to a ticket, it also updates the Historic Activities field on the change request.

To view the notification results:

1. In Service Manager, open **Menu Navigation > Change Management > Changes > Open New Change**.
2. In the **Number** field, type the ID of the change request you want to view, and then click **Search**.
3. Click the **Activities** tab, and then click the **Historic Activities** tab to view the updates:

Date/Time	Type	Operator	Description
04/23/10 13:08:45	AlarmPoint	falcon	Successful Delivery for Change Coordinator (Change.Coordinator|Work BES).
04/23/10 13:08:58	AlarmPoint	falcon	Successful Delivery for Change Coordinator (Change.Coordinator|Work Email).
04/23/10 14:22:58	AlarmPoint	Change.Coordinator	Approved by Change Coordinator (Change.Coordinator|Work BES)
04/23/10 14:23:09	AlarmPoint	falcon	Successful Delivery for Change Approver (Change.Approver|Work Email).
04/23/10 14:23:10	AlarmPoint	falcon	Successful Delivery for Change Approver (Change.Approver|Work BES).
04/23/10 13:08:25	Phase Change	falcon	"Prepare for Change Approval" to "Change Approval"
04/23/10 13:07:52	Phase Change	falcon	"Prepare for Change Approval" to "Change Approval"
04/23/10 13:07:45	Phase Change	falcon	"Change Assessment & Planning" to "Prepare for Change Approval"
04/23/10 13:07:35	Phase Change	falcon	"Change Review" to "Change Assessment & Planning"
04/23/10 13:07:27	Phase Change	falcon	"Change Logging" to "Change Review"
04/23/10 13:06:54	Open	falcon	Test Notification Responses

For each User Device notified during this process, the Journal Updates log will be annotated with a message indicating "Successful Delivery for bsmith|Work Email" where "bsmith|Work Email" is the recipient (<User>|<Device>).

3.5 Testing the Subscription Panel

To test Subscriptions, ensure that you have created a Subscription (for more information, see "Creating a Subscription" on page 23). Trigger a notification that matches the criteria that you have configured your Subscription to match. You will receive an FYI Notification (informational only) which will not have any response choices available.

Note: *Ensure that Subscriptions are enabled in the Action Scripts with the* `$enable_subs` *variable. For more information on how to configure Subscriptions, see .*

3.6 Querying for an event

This section describes how to validate that the mobile access component, integration agent and HP Service Manager are properly configured.

Note: *The xMatters mobile access page has a default URL of* `http://<xMattersIP>:8888/mg`, *where <xMattersIP> is the IP address of the xMatters web server where the mobile access component is configured.*

To query for an incident:

1. Using a browser-enabled smart phone (such as a BlackBerry), open a browser and navigate to the mobile access component URL.
2. Log in to the mobile access component:
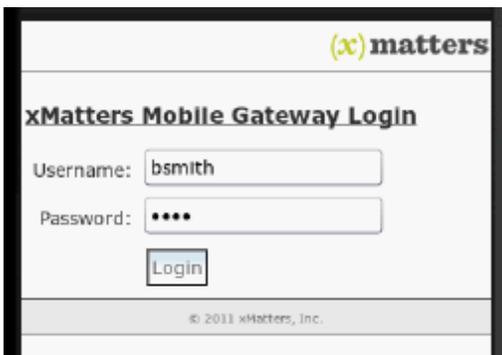
3. If more than one Integration Service is available, select the **hpsmcm** service.
4. If prompted, enter the HP Service Manager login credentials, and then select the **Open Changes** menu item:
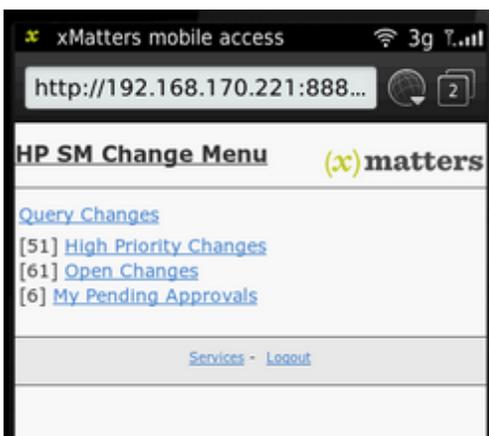
5. View the list of all open change requests:

6. Click the link in the **CN#** column for any change request to view its details:

7. To view the available options for the change request, click the drop-down list at the top of the screen:

8. To view the Approval status of the change request and, if required to respond, Approve or Deny the change request, click the **Approvals** option:
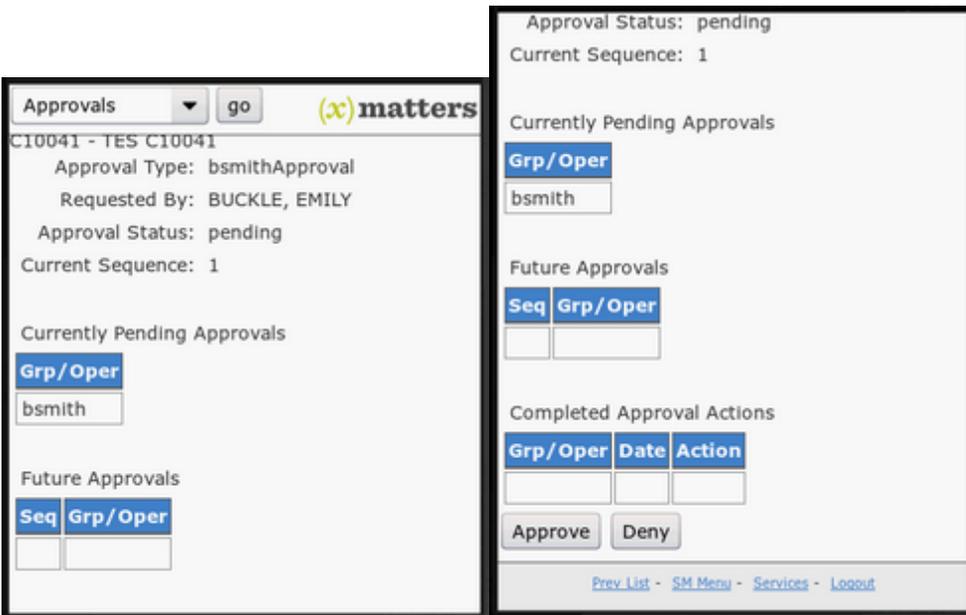
9. Click **Approve** to approve the change request and then provide a reason for the decision:

10. Click **Approve** again to send the action to HP Service Manager.

- The mobile access component screen displays the Activites screen, showing the reason for the approval:
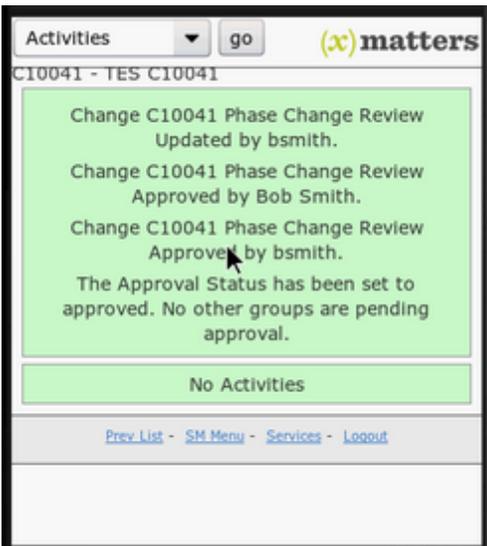
Chapter 4: Optimizing and Extending the Integration

This section describes some of the available methods you can use to optimize or extend the xMatters for HP Service Manager Change Management integration.

4.1 Adding new parameters

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

To add an event token:

1. In HP Service Manager, click **Menu Navigation > Tailoring > Script Library**.
2. In the **Name** field type `AlarmPointCMEvent`, and then click **Search**.
3. Find the **addEvent** function.
4. After the other lines starting with addEventTokenToRequest, add the following (where "TokenName" is the name of the token and "tokenvalue" is the value for the token):

```
addEventTokenToRequest(request, "TokenName", tokenvalue);
```

5. Click **Save**.

4.1.1 Adding new tokens to notification content

Once you have injected the new data elements, you can add the token as a parameter to the notification content for Devices. The following steps explain how to add the custom parameter to email notifications; adding content for other Device types is similar and requires the presentation script to be modified for the specific Devices.

To add a new token to email notification content:

1. Open the xMatters Developer IDE and check out the HP Service Manager Change Management (BUSINESS) Script Package.
2. In the Presentation Action Script, add the following line to the email content creation section:

```
$content.message = $content.message & "TokenName: " & $event.tokenvalue    & "\n"
```

3. You can also add a check in the Initial script to confirm that the custom parameter was injected properly and exists within the Action Scripts:

```
IF ( ! EXISTS( $event. tokenvalue ) )
  $event. tokenvalue = $undefined_default
  IF ( $main.debug )
    @script::log( $main.log_prepend & "Optional token ' tokenvalue '
    not found, defaulting to '" & $event. tokenvalue & "'" )
  ENDIF
ENDIF
```

Your custom parameter should now appear in your notification content for email Devices.

4.2 Response choices

This integration allows recipients to respond to notifications with several default choices, some of which are injected back to the HP Service Manager server, updating the original change request. Users notified on email Devices also have the ability to respond with an extra annotation message which will be logged in the original HP Service Manager change request.

The following is a list of the default response choices available with the integration and their associated actions on the xMatters event and the change request.

Default response choices

Response	xMatters Action	HP Service Manager Update	Availability
Approve	Signifies that the User approves the change request, and delinks all Users from the change request.	The approval record for the change request is updated with the Approve response. The response and any additional notes added to the response are recorded in the change request's Activities tab.	All non-FYI devices
Deny	Signifies that the User denies the change request, and delinks all Users from the change request.	The approval record for the change request is updated with the Deny response. The response and any additional notes added to the response are recorded in the change request's Activities tab.	All non-FYI devices
Annotate	Halts delivery of notifications to any other Devices the responding User may have configured.	Any additional notes added to the response are recorded on the change request's Journal Updates.	This functionality is available for Email Devices only.

4.2.1 Adding annotation messages

Two-way email Device notifications (not FYI) can add extra annotations that will be added to the change request as a message on the Journal Updates 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 sync errors and quick messages

Sync Error and Quick Message notifications are based on the hp_sm_change Event Domain. These create an event within xMatters and the available responses do not have any effect on the HP Service Manager system.

4.2.3

4.2.4 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.

Response	Description
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.

4.2 Annotations

This integration extensively annotates the originating HP Service Manager change request, but this may not be desirable in all environments. To prevent the annotation of change requests, you will need to edit the action scripts.

All annotations are prefaced by a comment indicating that the following call is an annotation:

```
# Annotate SM Event
...
$service_manager_message = $message_note
...
GOSUB annotateChange
```

To prevent the annotation of change requests, replace `$service_manager_message = $message_note` with `$service_manager_message = ""`.

For additional annotations, add the following section of code where `$message_note` is the message to be annotated:

```
# Annotate SM Event
$service_manager_status = ""
$service_manager_message = $message_note
GOSUB annotateChange
```

4.3 FYI Notifications

You can make all notifications informational only (i.e., the user is not offered any response choices). Setting the `$force_fyi` flag to "on" makes all normal and Subscription notifications one-way (FYI).

In the initial PROCESS script, locate the following line:

```
$force_fyi = disable
```

Change the line to:

```
$force_fyi = on
```

Note: *All FYI events are set to priority LOW; this allows users to prevent the alerts from being sent to specific Devices by configuring their Devices to be used for only Medium and High priority alerts.*

4.3.1 Generating FYI notifications for Subscriptions

When using subscriptions to inform Users about service outages, you may want to remove responses from notifications generated for subscriptions.

To accomplish this, select the **One Way** check box on the Subscription Domain details page for the associated Subscription Domain.

4.4 Adding custom trigger rules

To add a custom trigger rule that will trigger a notification to be injected into xMatters:

1. Click **Menu Navigation > Tailoring > Script Library**.
2. Type `AlarmPointCMEvent` in the **Name** field
3. Click **Search**.
4. Modify the following methods to suit your requirements:
   - **getTriggerRule()** - This method is used to determine whether a notification should be injected into xMatters.
   - **getDeviceFilter()** - This method is used to return a device filter string that will limit the Devices to which that notification will be sent.

For example, the default behavior is to inject a notification into xMatters upon change creation. To modify this to only inject a notification on creation when the urgency is either critical or high, change the following lines:

```
else{
   triggerRule = "Creation";
}
```

To:

```
else{
   if(record.severity <= 2)
      triggerRule = "Creation";
}
```

4.5 Altering the duration of events

You can modify the amount of time xMatters will send out notifications for a particular event before it times out by changing the $main.timeout variable in the initial process script. This variable stores the number of seconds the notifications will be allowed to continue before timing out.

For example, if you wanted to change the event duration to two hours, you could change the variable to:

```
$main.timeout = 7200
```

4.6 Optimizing the mobile access component

This section describes some of the ways you can optimize or extend the xMatters mobile access portion of the xMatters for HP Service Manager Change Management integration.

4.6.1 Add a custom query to the home page

To add a custom query and link to the home page, add the following to the `<xMHOME>\webservices\webapps\mobilegateway\jsp\hpsmcm\configuration.jsp` file installed on the mobile access component:

```
MAIN_MENU_OPTIONS.put("Query Label", "Query");
```

For more information about constructing queries for HP Service Manager, consult the HP Service Manager documentation.

4.6.2 Creating a URL alias

The `urlAlias.jsp` page in the mobile access component is used to drive directly from an xMatters notification to the Create Incident or Update Incident screens. It supports the following parameters:

urlAlias.jsp parameters

Name	Description
changeID	The ID number of the change request to update. This field must be set to a valid change request ID number.
Field Name	The name of an API Caption of a field for the change request. For each parameter set, it will update the field on the incident with that value.

Note: *For more information about the urlAlias method in the xMatters Action Script, refer to the xMatters Online Developer's Guide.*

4.6.3 Exposing a new field

The following steps explain how to configure a new field that has been exposed in the HP Service Manager extaccess record to be displayed on the xMatters mobile access.

Note: *In the following steps, replace "Field Name" with the API caption name of the new field exposed in HP Service Manager.*

To expose a new field:

1. Expose the new field in the HP Service Manager extaccess record as descibed in "Exposing additional fields for existing web services" on page 12.

2. In the `<xMHOME>\webserver\webapps\mobilegateway\jsp\servicemanager\includes` folder, add the following line to the `initialize.jsp` and `initializeOldChange.jsp` files:

```
newFields.put("Field Name", "");
```

3. To display the field on the New Change screen, add the following to the `createFields.jsp` file; to display the field on the Update Change screen, add the following to the `updateFields.jsp` file:

```
fields.put("Field Name", "Field Label");
fieldTypes.put("Field Name", "Field Type");
```

Field Name	The API caption name for the field exposed within HP Service Manager.
Field Label	The name that will appear within the mobile access component representing the exposed HP Service Manager field.
Field Type	The type of field exposed (as defined in the table below).

4. If the field is a required field, add the following:

```
requiredFields.add("Field Name");
```

Field Type	Description
Text	Displays the value of this field in an editable text input if there is a single value, or in a text area if there are multiple values.
ReadOnly	The value of this field will be displayed as plain text with no inputs
WriteOnly	The value of this field will not be displayed, but a text input will be displayed for a single value or a text area if there are multiple values, and both will allow input.
List	If a list is defined, a drop-down list will be displayed for this field; otherwise, a text input field will be displayed.

Defining List Field Values

To define the values for a list field you must add the following to the `<IAHOME>/integrationservices/hpsmcm/hpsmcm.js` file:

```
fields.put("Field Name", client.getSortedList("SoapAction", "Query", "Field"));
```

Where:

- **SoapAction** is the SOAP Action defined by the HP Service Manager web services; for example, "RetrieveCategoryListRequest".
- **Query** is the query used to return a list of values.
- **Field** is the name of the API Caption defined in HP Service Manager.

Defining Static List Values

To define the values for a static list, you must add the following to the
`<xMHOME>/webserver/webapps/mobilegateway/jsp/hpsmcm/includes/initialize.jsp` file:

```
incident.addList("Field Name", Arrays.asList(new String[]{ "Value 1",  "Value 2", ... }));
```

4.7 Constructing BES and email notifications

You can configure xMatters to create BES and HTML email notifications.

This feature requires the xMatters Developer IDE. For installation instructions, refer to the xMatters Online Developer's Guide.

To enable BES and HTML email, the HP Service Manager Change Management (Business) script package set must be checked into the xMatters Developer IDE database. If the script package has not been checked in already, see the instructions in "Importing the script package" on page 16.

Note: *Some email clients, such as Microsoft Outlook 2007, may not display HTML elements correctly. It is recommended that you test the HTML compatibility of your email client before implementing the HTML email feature.*

To enable BES and/or HTML email:

1. Launch the xMatters Developer IDE.
2. Check out the HP Service Manager Change Management (Business) Production script package.
3. In the Global Configuration Variables section of the initial PROCESS script, do the following:
    - Set the `$main.enable_HTML_Email` variable to *true*.
    - Set `$main.use_logo` to *true* if you want your HTML email to show a logo.
    - Set `$AlarmPoint_URL` to the base URL of your xMatters web server. (default is localhost).
4. Optionally, you can also do any of the following:
    - Change `$main.HTML_form_url` to point to a JSP page that you want to process any responses from the HTML email. (the default setting should work out-of-the-box).
    - Change `$main.logo` to a URL that holds the image you want to display at the top of HTML emails (by default, it points to the xMatters logo).
    - Set `$main.logo_alt_text` to the text you wish to display when the logo cannot be fetched. This can be displayed if the email client is configured not to show images, or it could be displayed because the email client cannot access the xMatters web server directly and thus cannot respond by using the links in the HTML.
    - If you are using BES and have access to a BES server, you can set the URL to the BES server in the `$main.bes_pushurl` variable.
5. Save and validate the script, and check in the script package.

For more information about these and other configuration variables, see "Configuration Variable Reference" on page 55.

4.8 HP Service Manager logging

All of the integration actions and errors are printed out to the messages panel and logged to the standard HP Service Manager log file specified in the `sm.ini` configuration file. These messages are defined in the AlarmPointUtil script library and are in the following format:

```
var RECIPIENT_UPDATE_FAIL = "Failed updating AlarmPoint %% %% - %%";
```

Messages are displayed using the following function:

```
logMessage(messageId, <args>)
```

where `messageId` matches the variable used to define the message and `<args>` is replaced by as many arguments as you want. These extra arguments are used in order to replace all occurrences of %% in the defined message.

For example, to log the message 'Failed updating xMatters Team TELECOMS-24x7 - UNKNOWN_GROUP', you would use the following:

```
logMessage("RECIPIENT_UPDATE_FAIL", "Team", "TELECOMS-24x7", "UNKNOWN_GROUP");
```

This would print in the Service Manager log file as:

```
3204(  2656) 12/04/2007 11:15:26   JS I Failed updating xMatters Team TELECOMS-24x7 - UNKNOWN_
GROUP
```

4.8 Uninstalling

For instructions on removing an xMatters deployment, refer to the *xMatters installation and administration guide*.

Chapter 5: Configuration Variable Reference

This section outlines and describes the configuration variables available in the initial PROCESS Action Script.

5.1 Global configuration variables

These variables are available throughout the script package, and are parameters of the "main" object. The value assigned to each variable is its default value within the script.

Gobal variables

Variable	Description
$main.timeout = 86400	Amount of time (in seconds) the event is allowed to run before timing out. (86400 seconds = 24 hours.)
$main.debug = false	Indicates whether to log informational messages for debugging purposes. Disabling this variable may improve performance, but will provide less information.
$main.use_logFile = false	Specify whether to use an alternate log file for debugging messages. This variable is ignored unless $main.debug is also set to true.
$main.logFile = "../logs/"	Defines the file used to log debugging information (only if $main.use_logfile is set to true).
$main.maxInvalidResponses = 3	Specifies the maximum number of invalid responses allowed before the notification will no longer be requeued. If a recipient sends an invalid response and this number has not been exceeded, they will be renotified with the same content, prefixed with a message indicating that their response was invalid.
$main.annotate = true	Enables submission of information back to the Management System.
	Information is logged throughout the script progress; if this variable is set to true, these logged messages will be annotated to the originating event. Setting this variable to false may improve performance, but will make debugging difficult as some information may not be annotated to the originating event.
$main.subscription_annotate = false	Enables submission of Subscription information back to the Management System. (As with $main.annotate, but specifically for Subscription information.)
	Most Subscriptions are informational only; this variable can be enabled, for debugging and informational purposes but may reduce performance.

Variable	Description
$main.enable_HTML_Email = true	Enables HTML Email functionality for email clients able to support HTML emails. If a client cannot support HTML than the plain text version will be passed.
$main.xMatters_URL = "http://localhost:8888"	Identifies the xMatters URL used for the HTML response form and xMatters logo. If the specified URL cannot be reached, the logo will not appear, and the response links will not work.
$main.HTML_form_url = $xMatters_URL & "/jsp/ProcessNotificationResponse.jsp"	Specifies the URL of the xMatters web server's Process Notification Response JSP form, used by HTML email and BES to inject responses through the system.
$main.use_logo = true	Specifies whether HTML email notifications will display the xMatters (or custom) logo.
$main.logo = $xMatters_URL & "/static/images/logos/alarmpoint/UNKNOWN.png"	Specifies the path to the graphic displayed on HTML (email and BES) notifications.
$main.logo_alt_text = "[If the logo does not appear you may be blocking images or you may be outside a firewall. If the latter, the links will not work for responding and you should respond by replying to this email as described below.]"	The alternate text to display if the HTML email logo is unavailable. **Note**: If the logo does not display, it is unlikely that the HTML_form_url is valid and responses will not be injected from HTML Devices (email and BES).
$main.numeric_pager_number = "555-1212"	The phone number to display for calling in to retrieve event information. This variable has a non-existent number as a default value; a real call-in number must be supplied, or a message indicating that an xMatters event has occurred.
$main.bes_pushurl = "http://localhost:8888/static"	Specifies the URL of the BES server. (Optional.)
$main.use_default_credentials = false	Determines whether to use the User's custom credentials (the contents of the HP SM Login and HP SM Password custom fields) or the default HP Service Manager credentials when interacting with HP Service Manager; i.e., for annotating responses.
$main.servicemanager_username = "falcon"** **$main.servicemanager_password = ""	Specifies the default HP Service Manager login credentials to use when a User has not specified values for the custom fields.
$main.servicemanager_username_custom_field = "HP SM Login"** **$main.servicemanager_password_custom_field = "HP SM Password"	Specifies the names of the custom fields that store the user name and password for each user accessing HP Service Manager.

5.2 Local configuration Variable

These variables are available only in this script, and control how the script runs. For more information about the initial PROCESS script, consult the *xMatters Online Developer's Guide*.

5.2.1 FYI and Subscription notification variables

The following variables configure the behavior of informational-only, or FYI, notifications. The value assigned to each variable is the default value within the script.

Note: *For more information on the behavior associated with informational-only notifications, see "FYI Notifications" on page 46.*

FYI and Subscription variables

Variable	Description
$force_fyi = "disable"	Forces notifications to be informational only rather than requiring responses. Possible values are: • disable: nothing is forced. • on: notifications are forced to be FYI. • off: notifications are forced not to be FYI.
$use_email_for_fyi = true **$use_phone_for_fyi = false** **$use_im_for_fyi = true** **$use_text_phone_for_fyi = true** **$use_text_pager_for_fyi = true** **$use_numeric_pager_for_fyi = true** **$use_bes_for_fyi = true** **$use_generic_for_fyi = true**	Configure Device filters for informational-only (FYI) notifications. Setting these flags to false prevents that Device type from being notified with informational (FYI) messages.

5.2.2 Fail-safe configuration variables

The following variables configure the fail-safe functionality, and specify when notifications will be sent to the fail-safe recipient. The value assigned to each variable is its default value within the script.

Note: *For instructions on how to set up a fail-safe recipient, see "Creating a fail-safe Group" on page 26.*

Fail-safe variables

Variable	Description
$fail_safe = "enabled"	Controls whether the fail-safe recipient is notified, and under which circumstances. Possible values are: • **enabled**: notify the fail-safe Group if no Subscriptions match and there are no notifiable recipients. • **for-subscriptions**: notify if the Subscription functionality is enabled and no Subscriptions match. • **for-recipients**: notify if there are no notifiable recipients. • **disabled**: disable the fail-safe functionality; no notifications will be sent to the fail-safe recipient.
$fail_safe_group = "HP SM FailSafe"	Identifies the fail-safe recipient, which is typically a Group, but may be a User.

5.2.3 Notification configuration variables

The following variables configure notification behavior. The value assigned to each variable is its default value within the script.

Notification variables

Variables	Description
$override_timeframes = false	Overrides any Device Timeframes that have been configured for a User for this notification.
$use_emergency_devices = false	Forces the use of emergency Devices as part of the Device resolution processing.
$track_delivery = true	Configures the notification to run a response script when the delivery of a notification is successful. As this can limit Node performance, you can set this value to false if the custom behavior for successful delivery events is unnecessary, but you will lose any information about whether a delivery was successful.

5.2.4 xMatters integration agent configuration variables

The `<IAHOME>\integrationservices\hpsmcm\hpsmcm.js` file installed on the Integration Agent contains the following configuration variables:

xMatters integration agent variables

Variable	Description
smUrl = "http://localhost:13080/sc62server/ws"	Defines the URL of the HP Service Manager web services
calloutAnnotateUser = "falcon"; calloutAnnotatePass = "";	These variables must be updated to specify a valid user name and password combination that has permissions to add journal entries to change request tickets. The values are only used for Callout Annotations from the CALLOUT APS script.

5.3 xMatters mobile access configuration variables

The `<xMHOME>\webserver\webapps\mobilegateway\jsp\hpsmcm\configuration.jsp` file installed for the mobile access component contains the following configuration variables:

xMatters mobile access variables

Variable	Type	Description	Default Value
MAIN_MENU_COUNTS	Boolean	Enables the queries on the home page to be run	true
MAIN_MENU_OPTIONS	map	Defines what queries should be displayed on the homepage	High Priority Incidents Open Incidents Assigned To Me Hot Incidents Unassigned Incidents
PAGINATE_RESULTS	boolean	Enables pagination of the change requests lists	true
RESULTS_PER_PAGE	int	Defines how many results should be displayed on each page of the change requests lists	10
USER_NAME_FIELD	string	Defines the name of the custom field in xMatters containing the HP Service Manager login user name	"HP SM Login"
PASSWORD_FIELD	string	Defines the name of the custom field in xMatters containing the HP Service Manager login user password	"HP SM Password"
VERIFY_CREDS	boolean	Enables the validation of entered HP Service Manager login credentials when loading the mobile access component homepage	true
LISTS_EXPIRED	long	Defines how long to cache list values retrieved from HP Service Manager through web service calls	3600000

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