## Contents

Preface ........................................................................................................................................................................ ii  
Audience ........................................................................................................................................................................ iii  
Documentation Accessibility ............................................................................................................................................... iii  
Related Documents ........................................................................................................................................................ iii  
Conventions .................................................................................................................................................................... iv

### 1 Introduction to the Connector

1.1 Auto Ticketing ......................................................................................................................................................... 1-1  
1.2 Manual Ticketing ...................................................................................................................................................... 1-2  
1.3 Ticket Templates ....................................................................................................................................................... 1-2  
1.4 Grace Period ............................................................................................................................................................ 1-2  
1.5 Retry .......................................................................................................................................................................... 1-3  
1.6 Versions Supported ................................................................................................................................................... 1-3  
1.7 Prerequisites ............................................................................................................................................................ 1-3

### 2 Installing and Uninstalling the Connector

2.1 Installing the Connector ............................................................................................................................................... 2-1  
2.1.1 Installing the Connector if Enterprise Manager is in "Offline" Mode ................................................................. 2-2  
2.2 Uninstalling the Connector ....................................................................................................................................... 2-3

### 3 Configuring the Connector

3.1 Creating a Connector Instance .................................................................................................................................. 3-1  
3.2 Configuring the Connector ....................................................................................................................................... 3-2  
3.3 Enabling or Disabling the Connector ......................................................................................................................... 3-3  
3.4 Providing General Settings ....................................................................................................................................... 3-3  
3.4.1 Connection Settings ............................................................................................................................................ 3-3  
3.4.2 Web Console Settings ........................................................................................................................................... 3-4  
3.4.3 Grace Period .......................................................................................................................................................... 3-4  
3.4.4 Retry ...................................................................................................................................................................... 3-5  
3.5 Working with Ticket Templates ................................................................................................................................. 3-5  
3.5.1 Adding Ticket Templates ..................................................................................................................................... 3-5  
3.5.2 Viewing Template Code ....................................................................................................................................... 3-6  
3.5.3 Removing a Template ........................................................................................................................................ 3-6  
3.5.4 Editing Templates ................................................................................................................................................. 3-6  
3.5.5 Restoring Templates ............................................................................................................................................. 3-7
<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.6</td>
<td>Configuring the HP Service Manager Web Console</td>
<td>3-7</td>
</tr>
<tr>
<td>3.7</td>
<td>Navigating Between Enterprise Manager and HP Service Manager</td>
<td>3-8</td>
</tr>
<tr>
<td>3.7.1</td>
<td>Navigating from Enterprise Manager to HP Service Manager</td>
<td>3-8</td>
</tr>
<tr>
<td>3.7.2</td>
<td>Navigating from HP Service Manager to Enterprise Manager</td>
<td>3-9</td>
</tr>
<tr>
<td>4</td>
<td>Creating Service Manager Tickets</td>
<td>4-1</td>
</tr>
<tr>
<td>4.1</td>
<td>Automatically Creating a Ticket</td>
<td>4-1</td>
</tr>
<tr>
<td>4.2</td>
<td>Manually Creating a Ticket</td>
<td>4-4</td>
</tr>
<tr>
<td>4.3</td>
<td>Post-creation Advisory Information</td>
<td>4-5</td>
</tr>
<tr>
<td>5</td>
<td>Using Out-of-Box Templates</td>
<td>5-1</td>
</tr>
<tr>
<td>5.1</td>
<td>Out-of-Box HP Service Manager Templates</td>
<td>5-1</td>
</tr>
<tr>
<td>5.2</td>
<td>Reading and Mapping Ticket Templates</td>
<td>5-2</td>
</tr>
<tr>
<td>5.2.1</td>
<td>Service_Manager_7.0_Default_Incident.xsl - Create</td>
<td>5-2</td>
</tr>
<tr>
<td>5.2.2</td>
<td>Service_Manager_7.0_Default_Incident.xsl - Update</td>
<td>5-2</td>
</tr>
<tr>
<td>5.2.3</td>
<td>Service_Manager_7.0_Default_Incident_AutoClose.xsl - Create</td>
<td>5-3</td>
</tr>
<tr>
<td>5.2.4</td>
<td>Service_Manager_7.0_Default_Incident_AutoClose.xsl - Update</td>
<td>5-3</td>
</tr>
<tr>
<td>5.2.5</td>
<td>Service_Manager_7.1_Default_Incident.xsl - Create</td>
<td>5-3</td>
</tr>
<tr>
<td>5.2.6</td>
<td>Service_Manager_7.1_Default_Incident.xsl - Update</td>
<td>5-4</td>
</tr>
<tr>
<td>5.2.7</td>
<td>Service_Manager_7.1_Default_Incident_AutoClose.xsl - Create</td>
<td>5-4</td>
</tr>
<tr>
<td>5.2.8</td>
<td>Service_Manager_7.1_Default_Incident_AutoClose.xsl - Update</td>
<td>5-4</td>
</tr>
<tr>
<td>5.2.9</td>
<td>Formatted Enterprise Manager Incident Contents</td>
<td>5-4</td>
</tr>
<tr>
<td>5.2.10</td>
<td>Severity Mapping</td>
<td>5-5</td>
</tr>
<tr>
<td>5.3</td>
<td>Customizing Ticket Templates</td>
<td>5-6</td>
</tr>
<tr>
<td>5.4</td>
<td>Exporting the Ticketing Template Files</td>
<td>5-6</td>
</tr>
<tr>
<td>5.5</td>
<td>Modifying Ticket Templates</td>
<td>5-7</td>
</tr>
<tr>
<td>5.6</td>
<td>Custom Template Examples</td>
<td>5-8</td>
</tr>
<tr>
<td>5.6.1</td>
<td>Example 1</td>
<td>5-8</td>
</tr>
<tr>
<td>5.6.2</td>
<td>Example 2</td>
<td>5-9</td>
</tr>
<tr>
<td>6</td>
<td>Customizing Support Ticketing Inbound Operations</td>
<td>6-1</td>
</tr>
<tr>
<td>6.1</td>
<td>Adding a Custom Field to HPSM</td>
<td>6-1</td>
</tr>
<tr>
<td>6.2</td>
<td>Setting Up EM CLI</td>
<td>6-4</td>
</tr>
<tr>
<td>6.3</td>
<td>Exporting the Notification Script Files</td>
<td>6-5</td>
</tr>
<tr>
<td>6.4</td>
<td>Setting Up the Notification Script</td>
<td>6-6</td>
</tr>
<tr>
<td>6.5</td>
<td>Uninstall Customization to HP Service Manager for Support Ticket Inbound Operations</td>
<td>6-9</td>
</tr>
<tr>
<td>6.5.1</td>
<td>Remove Calls to the Notification Script</td>
<td>6-9</td>
</tr>
<tr>
<td>6.5.2</td>
<td>Remove Custom Field Added for Script Operation</td>
<td>6-10</td>
</tr>
<tr>
<td>6.6</td>
<td>Uninstalling EM CLI</td>
<td>6-10</td>
</tr>
<tr>
<td>A</td>
<td>Enabling SSL for HTTPS</td>
<td>A-1</td>
</tr>
<tr>
<td>A.1</td>
<td>Generating and Importing a Certificate Request</td>
<td>A-1</td>
</tr>
<tr>
<td>A.2</td>
<td>Installing and Configuring SSL</td>
<td>A-1</td>
</tr>
<tr>
<td>A.3</td>
<td>Importing the Adapter Certificate into Enterprise Manager</td>
<td>A-1</td>
</tr>
</tbody>
</table>
B Preventing HP Service Manager Update Issues

C Enterprise Manager Incident Format

D HP Service Manager WSDL Format

E Enterprise Manager Incident Examples
  E.1 Create Example ................................................................. E-1
  E.2 Update Example .............................................................. E-5
  E.3 Clear Example ............................................................... E-14
  E.4 Reopen Example ............................................................ E-18

Index
Preface

This Connector Configuration guide provides the information that you require to configure Management Connectors that integrate Enterprise Manager with other management tools and help desk systems.

Audience

This guide is written for Oracle Database system administrators who want to configure Management Connectors to enable integration between Enterprise Manager and other systems.

You should already be familiar with Oracle Enterprise Manager.

Documentation Accessibility

For information about Oracle’s commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

Related Documents

For more information, see the following books in the Oracle Enterprise Manager documentation set:

- Oracle Enterprise Manager Cloud Control Basic Installation Guide
- Oracle Enterprise Manager Cloud Control Advanced Installation and Configuration Guide
- Oracle Enterprise Manager Cloud Control Administrator’s Guide
- Oracle Enterprise Manager Cloud Control Upgrade Guide
- Oracle Enterprise Manager Command Line Interface
- Oracle Enterprise Manager Cloud Control Extensibility Programmer’s Guide
Oracle Database 2 Day DBA

The latest versions of this and other Oracle Enterprise Manager documentation can be found at:

http://www.oracle.com/technology/documentation/oem.html

Oracle Enterprise Manager also provides extensive online help. Click Help on any Oracle Enterprise Manager page to display the online Help system.

Printed documentation is available for sale in the Oracle Store at

http://oraclestore.oracle.com/

To download free release notes, installation documentation, white papers, or other collateral, please visit the Oracle Technology Network (OTN). You must register online before using OTN; registration is free and can be done at

http://otn.oracle.com/membership/

If you already have a user name and password for OTN, then you can go directly to the documentation section of the OTN Web site at

http://otn.oracle.com/documentation/

Conventions

The following text conventions are used in this document:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>boldface</strong></td>
<td>Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.</td>
</tr>
<tr>
<td><em>italic</em></td>
<td>Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.</td>
</tr>
<tr>
<td>monospace</td>
<td>Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.</td>
</tr>
</tbody>
</table>
The HP Service Manager Connector 12.1.0.2.0 integrates HP Service Manager Version 7 (HPSM) incident management with Enterprise Manager. Using this connector, you can create, update, reopen, and close an HP Service Manager Incident (ticket) based on incidents in Enterprise Manager. The HP Service Manager Connector integrates Enterprise Manager with HP Service Manager through either an HTTP or HTTPS connection. Note that the term ticket refers to an HP Service Manager incident, and is used throughout this document.

The ticket generated by the connector contains the relevant information about the Enterprise Manager incident, including a link to the Enterprise Manager console to enable helpdesk analysts leverage Enterprise Manager’s diagnostic and resolution features to resolve the incident. In Enterprise Manager, the ticket ID, ticket status, and link to the HP Service Manager console is shown in the context of the incident. This provides Enterprise Manager administrators with ticket status information and an easy way to quickly access the ticket.

The following sections explain various HP Service Manager Connector concepts and requirements that you should understand before you start using the HP Service Manager Connector:

- Auto Ticketing
- Manual Ticketing
- Ticket Templates
- Grace Period
- Retry
- Versions Supported
- Prerequisites

### 1.1 Auto Ticketing

Auto ticketing refers to creating or updating tickets automatically for any matching rule(s) in Enterprise Manager. You can define a set of event or incident rules for which tickets must be opened/updated for changes in underlying event or incident attributes. For example, changing event severity from Warning to Critical can update the associated ticket.

**See Also:** "Incident Management Chapter" in the Oracle Enterprise Manager Administrator’s Guide.
After the ticket is opened, any subsequent update of the incident attributes or underlying event attributes, such as a change in underlying events severity, updates the ticket. After the incident is cleared in Enterprise Manager, the ticket is updated and you can optionally go to HPSM to close the ticket.

See Also: Section 4.1, "Automatically Creating a Ticket”.

1.2 Manual Ticketing

From the Enterprise Manager console, you can manually open a CASD ticket based on an open incident in Enterprise Manager. The HPSM Connector populates the ticket with details based on the incident and the ticket template selected.

1.3 Ticket Templates

Ticket templates are XML transformation style sheets that transform Enterprise Manager incidents to a ticket format before the requests are sent to HPSM. A ticket template specifies how an Enterprise Manager incident and its associated event attributes can be mapped to the ticket attributes of HPSM.

These templates specify how Enterprise Manager incident attributes can populate the fields of a Service Manager ticket. A ticket template helps in the mapping of Enterprise Manager incident fields into Service Manager incident fields.

In Auto Ticketing, while setting up a rule, you select a configured connector and select the ticket template from the template list. The selected ticket template is used when a ticketing request is sent to the HPSM. For manual ticketing, you have to select a connector instance and ticket template before submitting a request for ticket creation.

1.4 Grace Period

The grace period enables you to prevent creating a large number of tickets for frequently created incidents due to reoccurrence of the same event.

For recurring incidents, the grace period is a time period during which reoccurrences of the same incident update (or reopen) an existing ticket for the incident instead of opening a new ticket.

For example, an incident triggers and a ticket is opened for it. If the grace period is one hour and the incident is cleared at 10:00 a.m., and if the same incident retriggers before 11:00 a.m. (one-hour grace period), the ticket that had been originally created for the incident is updated/reopened rather than creating a new ticket.

Note: In HPSM, after a ticket is set to a Closed status, it cannot be reopened. Consequently, an incident that re-triggers within the grace period cannot reopen the ticket but only annotate it.

If you want to reopen a ticket for incident occurrences that fall within the grace period, set the ticket status to Resolved instead of Closed when the incident clears. This enables the HPSM Connector to reopen the ticket if the same incident reoccurs within the grace period.
1.5 Retry

The “Retry” section, available on the connector configuration page, enables you to specify whether a failed ticketing request needs to be retried within a configurable expiration time.

Enabling the Retry option gives you the option of specifying whether you want to resend a ticketing request if the request fails the first time, and specifying the time period after which you want to abandon the retry. Enterprise Manager retries every 5 minutes until the request is successful or the retry interval expires.

1.6 Versions Supported

There are two different version-specific HPSM connectors that you can install.

- HPSM 7.0 Connector is for versions 7.0 and 7.01.
- HPSM 7.1 Connector is for versions 7.10 and 7.11.

The base Enterprise Manager version number for the HP Service Manager Connector Release 12.1.0.2.0 is Enterprise Manager 12c Release 1 (12.1.0.1 with Bundle Patch 1).

1.7 Prerequisites

Before using the HP Service Manager Connector, ensure that you meet the following prerequisites:

- Service Manager 7 service tier is installed and configured.
- Service Manager 7 consoles are installed and configured. If the URL connector framework option is selected, the Service Manager Web console must be installed and configured. To install the middle tier, see the HP Service Manager 7 Web Tier Installation Guide. To configure the Web console, see Section 3.6, 'Configuring the HP Service Manager Web Console' for instructions.
Installing and Uninstalling the Connector

The HP Service Manager Connector is not installed as part of the Enterprise Manager base installation, so you need to manually install it as described in this chapter. The following topics are discussed:

- Installing the Connector
  - Installing the Connector if Enterprise Manager is in "Offline" Mode
- Uninstalling the Connector

2.1 Installing the Connector

The HPSM connector is not included out-of-the-box, so you must download it from the Oracle Enterprise Manager store. All connectors in the Enterprise Manager store are available on the Self Update page for downloading.

To download and install the connector:

1. From the Setup menu of the Enterprise Manager console, select Extensibility, then Self Update.

   **See Also:** Refer to the "Setting up Self Update" section of the "Updating Cloud Control" chapter in the Oracle Enterprise Manager Cloud Control Administrator’s Guide for more details:

   [http://docs.oracle.com/cd/E24628_01/doc.121/e24473/self_update.htm#BEJJEHDJ](http://docs.oracle.com/cd/E24628_01/doc.121/e24473/self_update.htm#BEJJEHDJ)

2. Click on the Management Connector link in the Type column.

   The HPSM connectors appear in the list with a status of Available.

3. Click on the appropriate HPSM connector to select it, and then click **Download**.

   The Schedule Download window appears, where you can determine when the download should be performed.

4. Click **Select** to download immediately.

   If you want to schedule the download for a later time, specify the date and time when the download should occur, and click **Select**. You will need to return and finish the remainder of this procedure after the scheduled download date and time.

5. If necessary, refresh the screen until the status of the connector changes to Downloaded.

6. Click on the HPSM connector to select it, then click **Apply**.
After you respond to the prompt to confirm the operation, a page appears that indicates the request has been submitted.

7. Refresh the screen until the status of the connector changes from Apply Scheduled to Applied.

See Also: "Refer to the "Setting up Self Update" section of the "Updating Cloud Control" chapter in the Oracle Enterprise Manager Cloud Control Administrator’s Guide for more details:
http://docs.oracle.com/cd/E24628_01/doc.121/e24473/self_update.htm#BEJJEHDJ

2.1.1 Installing the Connector if Enterprise Manager is in "Offline" Mode

Under certain circumstances, such as in high security environments, an active Internet connection between Enterprise Manager and the Enterprise Manager Update Store may not be available. In such situations, Enterprise Manager can be set to install the connector in an "offline" mode.

The installation process still requires that a computer exist at your site that has Internet access, as a connection to the Enterprise Manager Update Store is still required to obtain the necessary files. The files that you download to this computer can then be transferred to a computer behind your firewall.

To install the connector if Enterprise Manager is in "offline" mode:

1. From the system that you will ultimately deploy the connector, set Enterprise Manager Cloud Control to Offline Mode:
   a. From the Setup menu, select Provisioning and Patching, then select Offline Patching.
   b. In the Online and Offline Settings page, select Offline.

2. From the Setup menu, select Extensibility, then select Self Update.

3. On the Self Update page, click Check Updates. A message appears with the following URL to an Oracle site from where the updates catalog file can be downloaded:

4. From an Internet-enabled computer, download the catalog file using the aforementioned URL.

5. Copy the downloaded catalog file to the OMS host or the Management Agent host where you plan to import the connector.

6. Import the catalog file to Enterprise Manager:
   ■ If the catalog file is on the OMS host:

   emcli import_update_catalog -file="file" -omslocal

   Where:
   - -file: is the direct path to the connector archive (*.zip).
   - -omslocal: indicates that the path mentioned in the -file option is directly accessible to the Enterprise Manager server

   ■ If the catalog file is on a different host:
Uninstalling the Connector

To uninstall the connector, you must first delete all defined instances of the connector, then you must delete the connector from the Self Update page.

To uninstall the connector:

1. From the Setup menu, select Extensibility, then Management Connectors.
2. Select an instance of the connector you want to delete, then click Delete.
3. On the Confirmation page, click Yes.
4. Repeat steps 2 and 3 until all instances of the connector have been deleted.
5. From the Setup menu, select Extensibility, then Self Update.
6. Click on the Management Connector link in the Type column.
   A list of updates appears for Management Connectors.
7. Click on the connector you want to delete, select Actions, then select Delete.
   The Delete Update window appears.
8. Click Delete to delete the connector.
   A pop-up confirmation window appears.
9. Click OK to confirm and delete the connector.
This chapter explains how to perform tasks directly or indirectly related to configuring the connector, and also discusses the post-configuration task of navigating between the Enterprise Manager and HP Service Manager consoles. The following topics are discussed:

- Creating a Connector Instance
- Configuring the Connector
- Enabling or Disabling the Connector
- Providing General Settings
- Working with Ticket Templates
- Configuring the HP Service Manager Web Console
- Navigating Between Enterprise Manager and HP Service Manager

### 3.1 Creating a Connector Instance

To create a connector instance:

1. From the **Setup** menu of the Enterprise Manager console, select **Extensibility**, then **Management Connectors**.

2. Select a connector type of **HPSM 7.0 Connector** or **HPSM 7.1 Connector** from the Create Connector drop-down list, then click **Go**.

3. Enter the connector name and description on the next page, then click **OK**.

The connector instance appears as unconfigured in the Management Connectors page, as shown in Figure 3–1.
3.2 Configuring the Connector

To configure the connector:

1. Click on the name of the HPSM Connector.

   The General tab of the Configure Management Connector page appears, as shown in Figure 3–2.

---

**Figure 3–2 Configure Management Connector Page**
2. Provide the required settings. See Section 3.4, "Providing General Settings" for details.

3. Click OK.
   The Management Connectors page reappears. The row for the HPSM Connector should have a check mark in the Configured column.

4. Optionally, you can click the configure icon again to check for the available ticket templates.

5. Click the Ticket Templates tab.
   All out-of-box ticket templates should appear in the table.

   If you choose HTTPS as the protocol to establish a connection between CASD and Enterprise Manager, see "Importing the Adapter Certificate into Enterprise Manager" in Appendix A.

### 3.3 Enabling or Disabling the Connector

You can enable or disable a connector from the Management Connectors page by selecting the connector and clicking either Enable or Disable. After a connector is disabled, a red cross icon appears under the status column. By default, the connector instance is enabled as soon as it is configured.

---

**Note:** Only enabled connectors are available for ticketing operations.

### 3.4 Providing General Settings

The following sections explain how to provide various configuration details.

#### 3.4.1 Connection Settings

The HPSM Connector communicates with the Service Manager server through a web service provided through the Service Manager web tier. All fields are mandatory.

- **Web Service End Points** - URL of the web service end-point to call for the `createTicket`, `updateTicket`, and `getTicket` operations. The Service Manager web service URL is formatted as shown below:

  ```
  http://[Hostname]:13080/sc62server/ws
  ```

  In most cases, you will just need to replace [Hostname] with the host name or IP address of the server where the web tier is located. The port number defaults to 13080, so you only need to change the port number if you have changed the port used by the web tier. The only other change you might make is the protocol. If you want to use SSL, you need to change the protocol from http to https.

  **Note:** If you want to use SSL to encrypt communications between Enterprise Manager and Service Manager, see "Importing the Adapter Certificate into Enterprise Manager" in Appendix A.

- **Service Manager Username** - Specify the user name for HTTP basic authentication supported by the HP Service Manager web services. This user name must have the appropriate privileges/roles in HP Service Manager to create, update, and query
tickets in the HP Service Manager. All tickets created through the connector are generated with this user account.

- **Service Manager Password** - Specify the password associated with the user specified in the Service Manager Username field.

- **Ticket Number** - Enter a valid ticket number to test the connection when you save the configuration.
  - If you specify the correct Web service end-points and enter a valid ticket number, the following message appears on the Management Connectors page after you click OK:
    
    *Connection test succeeded. The configuration was saved.*

  - If you have not previously saved the connector configuration and enter incorrect Web service endpoints or an invalid ticket number, the following message appears on the Management Connectors page after you click OK:
    
    *Connection test failed. The configuration was saved.*

  - If you have previously saved the connector configuration and enter incorrect Web service endpoints or an invalid ticket number, the following message appears on the Management Connectors page after you click OK:
    
    *Connection test failed. The configuration was not saved.*

### 3.4.2 Web Console Settings

Web Console settings are required if you want the Connector to provide links to HPSM tickets created by Enterprise Manager in the context of an incident. This feature requires configuration changes in HPSM. See Section 3.6, "Configuring the HP Service Manager Web Console" for details.

To enable this functionality, provide the following Web console settings:

- **Enable web console** - Check this box to enable launching of the HPSM ticket page within context from Enterprise Manager.

- **Web Server** - Specifies Web server information the connector uses to connect to the web tier when accessing incidents in HPSM. Set the value using the following format:
  
  `<hostname>:<port>/<tier>`

  Where `<hostname>` is the hostname or IP address of the web tier server machine, `<port>` is the port that the web tier is configured to support, and `<tier>` is the name of the web services tier. The default value for the port is 8080, and the default name of the web tier is sm7.

  A sample value for the field is as follows:

  `10.2.1.110:8080/sm7`

### 3.4.3 Grace Period

You can enable and disable the grace period and configure its value. By default, the grace period is disabled. See Section 1.4, "Grace Period" for details. This setting applies to all incidents the HPSM Connector processes.
3.4.4 Retry

You can enable and disable the Retry option and configure its interval value. By default, the Retry is disabled. See Section 1.5, "Retry" for details. This setting applies to all incidents the HPSM Connector processes.

3.5 Working with Ticket Templates

When a connector instance is created in Enterprise Manager, all associated templates are available for ticket create/update operations. For Auto Ticketing, a notification method is created based on the ticket template selected while creating an incident rule. For manual ticketing, a ticket template is selected while creating a ticket from the Enterprise Manager console.

There are two default templates for each of the HPSM Connectors. The default templates for the HPSM 7.0 connector are:

- ServiceManager_7.0_Default_Incident_AutoClose.xsl
- ServiceManager_7.0_Default_Incident.xsl

The default templates for the HPSM 7.1 connector are:

- ServiceManager_7.1_Default_Incident_AutoClose.xsl
- ServiceManager_7.1_Default_Incident.xsl

Tip: See Section 5.1, "Out-of-Box HP Service Manager Templates" for detailed information about these templates.

3.5.1 Adding Ticket Templates

If you want to create a custom template, you need to add ticket templates before they are recognized in Enterprise Manager. For each new custom template, run the following emctl register_template connector command as a user with execute privilege on emctl and the ability to read the ticket template:

```
$ORACLE_HOME/bin/emctl register_template connector
-t <template.xsl> -repos_pwd <reposPassword>
-cname <connectorName> -iname <internalName>
-tname <templateName> -ttype 2 [-d <description>]
```

Where —

- `<template.xsl>` is the full path name of the template file.
- `<reposPassword>` is the Enterprise Manager root (SYSMAN) password.
- `<connectorName>` is the name of the connector instance installed in step 3 of Section 3.1, "Creating a Connector Instance".
- `<internalName>` is the internal name to use for the template.
- `<templateName>` is the name to display for the template.
- `<description>` is the description of the template.

For example, the following command adds a new outbound template (newTemplate.xsl) for the connector instance with the HPSM 7.1 Connector Instance:

```
emctl register_template connector
-t /home/oracle/custom_templates/template.xml
-repos_pwd sysmanpass
-cname 'HPSM 7.1'
```
3.5.2 Viewing Template Code

To view template code, do the following:

1. Select the connector instance and go to the Configure Management Connector page.
2. Select the Template tab.
3. Click a template name or click View to view the XSLT code for the template.

The ticket templates are in XSLT format. A basic knowledge of XSLT is required to understand the code.

3.5.3 Removing a Template

To remove a template, do the following:

1. Select the connector instance and go to the Configure Management Connector page.
2. Select the Template tab.
3. Select the template and click Delete.
4. Click Yes to confirm the delete operation.

**Important:** If the template you delete has an incident rule associated with it, ticketing will not function for this particular incident rule after the deletion.

3.5.4 Editing Templates

**Note:** The Edit Template feature is available in Oracle Enterprise Manager Release 12.1.0.2 and later.

**Release 12.1.0.2 and Later**

To edit an existing ticket template for Release 12.1.0.2 and later, do the following:

1. Select the connector instance and go to the Configure Management Connector page.
2. Select the Template tab.
3. Select the template and click Edit.
4. Edit the Description and Template Contents fields as needed, then click Save.

The ticket template is automatically registered. Saving the registered template updates it in the repository.

**Releases Prior to 12.1.0.2**

To edit an existing ticket template for versions prior to Release 12.1.0.2, replace the template as a substitute for direct editing:
1. Click **Delete** to remove the ticket template.

2. Re-register the separately edited template using the `emctl register_template` command described in Section 3.5.1, “Adding Ticket Templates”.

For instance, for a template named `template1.txt` that you have just edited outside of Enterprise Manager, to use this newer version of the file, you would delete `template1.txt` as instructed above, then re-register the edited `template1.txt` file.

### 3.5.5 Restoring Templates

After you edit or customize a template, you can restore it to its previous default contents if needed by performing the following steps.

**Note:** The Restore feature is available in Oracle Enterprise Manager Release 12.1.0.2 and later.

You can restore out-of-box templates that you may have edited or customized to their default values. You cannot restore new templates that you have created (using the `emctl register_template` command).

1. Select the connector instance and go to the Configure Management Connector page.
2. Select the **Template** tab.
3. Select the template and click **Restore**.
4. Click **Yes** in the confirmation page that appears in order to restore.

### 3.6 Configuring the HP Service Manager Web Console

To verify the configuration of the `web.xml` file in the WEB-INF folder of the Tomcat web tier context root:

1. Make sure to change the `serverHost` parameter value from local host to the fully-qualified name of the web tier server.

2. Make sure the `querySecurity` parameter is set to false as follows:

   ```xml
   <init-param>
   <param-name>querySecurity</param-name>
   <param-value>false</param-value>
   </init-param>
   
   `<init-param>querySecurity</init-param>`
   `<param-name>querySecurity</param-name>`
   `<param-value>false</param-value>`
   ```

3. If any changes were made to the configuration file, you must restart the web application server for the changes to take effect.

   **Tip:** See the "Generating Web Tier URL Queries" section in the Service Manager client help contents for additional information.
Note: Based on how the Enterprise Manager Connector Framework functions, the hash information normally required in the URL when querySecurity is set to true cannot be present. This requires that the URL security be turned off.

Your security team needs to evaluate if the risks outweigh the need for the URL to be able to access the HPSM incident directly from Enterprise Manager. Service Manager still requires user authentication when hashing is turned off to access the web console enforcing authorization to the operation requested.

3.7 Navigating Between Enterprise Manager and HP Service Manager

After you have configured the connector, you will want to access incidents from the Enterprise Manager and HP Service Manager consoles. The following sections explain how to switch from one console to the other.

3.7.1 Navigating from Enterprise Manager to HP Service Manager

To navigate from Enterprise Manager to HPSM:

1. From the Enterprise Manager console Enterprise menu, select Monitoring, then Incident Manager.
   
The open incidents appear.

2. Click on the desired incident to display information for the incident.

3. Click on the ticket identifier listed to the right of the Ticket ID label in the Tracking section as shown in Figure 3–3.
   
You will be forwarded to the HPSM Web console login page.
4. Provide valid HPSM account details.

The HPSM incident details associated with this incident are displayed through the HPSM web console.

**Note:** If you do not use the HP Service Manager Web console, uncheck the "Enable web console features" option discussed in Section 3.4.2, "Web Console Settings" so that the ticket ID is shown in plain text. Otherwise, it is displayed as a link that does not function.

### 3.7.2 Navigating from HP Service Manager to Enterprise Manager

To navigate from HPSM to Enterprise Manager:

1. At the HPSM client, open an incident from Enterprise Manager as shown in Figure 3–4.

2. Scroll down in the Description field to the URL: field and click on the URL listed.

   This forwards you to the Enterprise Manager console login page. After you provide the Enterprise Manager user name and password, you are forwarded to the alert related to this ticket.
**Note:**

- The Enterprise Manager user whose name you specify should at least have **View** privileges on the target on which the alert was raised.
- On the HP Service Manager console, if the URL appears as text, you need to cut and paste the URL into the browser.

*Figure 3–4  Alert Details in HP Service Manager Console*
You can create tickets automatically or manually. The following sections explain how to create both types:

- Automatically Creating a Ticket
- Manually Creating a Ticket

4.1 Automatically Creating a Ticket

To automatically create a ticket in HPSM, you need to create an incident rule that references a template from the HPSM connector.

To create an incident rule to automatically create a ticket in HPSM:

1. From the Enterprise Manager console, click Setup, then Incidents and Incident Rules.
2. Click Create Rule Set.
   The Create Rule Set page appears.
3. Provide a Name and Description.
4. Click the Rules tab.
   - For events —
     Click Create and select Incoming events or updates to events as a type of rule to create from the pop-up window, then click Continue.
     The Create New Rule wizard appears. Follow the steps to create a rule. (Refer to the "Configuring Incident Rule" section in the Oracle Enterprise Manager Advanced Configuration Guide.)
   - For incidents —
     Click Create and select Newly created incidents or updates to incidents as a type of rule to create from the pop-up window, then click Continue.
     The Create New Rule wizard appears. Follow the steps to create a rule. (Refer to the "Configuring Incident Rule" section in the Oracle Enterprise Manager Advanced Configuration Guide.)
5. While configuring the above rule in the Add Actions page:
   - For events —
     Enable the Create Incident check box. This makes the Create Ticket option visible. Now enable the Create Ticket check box, which displays lists to select
the Connector Type, Connector Name, and Template Name as shown in Figure 4–1.

**Figure 4–1  Event Add Actions**

- **For incidents —**
  Enable the **Create Ticket** check box, which displays lists to select the Connector Type, Connector Name, and Template Name as shown in Figure 4–2.
6. After completing all of the wizard steps, click **Save**.

The following process occurs after you create the incident rule for your incidents:

- A request is sent to the HPSM Connector when an incident is created due to an event that matches your rule.
- The ticket is created or updated in the HPSM system.
- In Enterprise Manager, the incident annotation is updated. A comment is added to the event Detail page of the incident to indicate that a ticket was created or updated, along with the ticket ID, status, and ticket URL.

A ticket is updated if there is an existing active ticket for an incident. Figure 4–3 shows the ticket in the HPSM console.
4.2 Manually Creating a Ticket

To manually create a ticket:

1. After a metric incident occurs, go to its incident details page by clicking on the incident message in the Incident Manager console in Enterprise Manager. The incident details page for the incident should appear, as shown in Figure 4–4.
2. In the Tracking section, select More, then Create Ticket.

The Create Ticket pop-up appears, as shown in Figure 4–5. The Create Ticket option is only available if there is at least one ticketing connector configured, and no prior ticket exists for the same incident.

3. In the Create Ticket pop-up window, select a ticket template from the Template Name list, then click OK.

![Create Ticket Pop-up Window](image)

**Figure 4–5  Create Ticket Pop-up Window**

4.3 Post-creation Advisory Information

- If you have successfully created the ticket, the ticket ID appears in the Last Comment column in the Event Details for the incident. If the Web console settings
are configured and enabled, the ticket ID appears as a link to the ticket page in Service Manager.

- If the default templates do not provide the desired mappings, you can create custom templates to map data as desired. See Section 5.3, "Customizing Ticket Templates" for additional information.

- You cannot manually update the ticket using the HPSM Connector. You need to manually update the ticket in Service Manager for any subsequent incident severity change.
This chapter provides details on the out-of-box ticket templates shipped with the HP Service Manager Connector based on the out-of-box Service Manager IncidentManagement WSDL. The ticket templates specify the mappings between Enterprise Manager incident attributes and HP Service Manager ticket attributes.

This chapter covers the following topics:

- Out-of-Box HP Service Manager Templates
- Reading and Mapping Ticket Templates
- Customizing Ticket Templates
- Exporting the Ticketing Template Files
- Modifying Ticket Templates
- Custom Template Examples

### 5.1 Out-of-Box HP Service Manager Templates

All out-of-box templates cause the following actions to occur when you create or update a ticket for an incident:

- Write Enterprise Manager incident information to the ticket description.
- Set the ticket summary based on the incident message.
- Add an entry to the Journal Update that shows the incident details. This provides a trail of the changes that have occurred to the incident.
- Sets the ticket severity based on the severity of the incident in Enterprise Manager.

The out-of-box templates are as follows:

- **Service_Manager_7.0_Default_Incident.xsl and Service_Manager_7.1_Default_Incident.xsl**
  These templates create, update, or reopen a Service Manager ticket using the default field mapping. The templates do not close the ticket when the event severity value becomes Clear.

- **Service_Manager_7.0_Default_Incident_AutoClose.xsl and Service_Manager_7.1_Default_Incident_AutoClose.xsl**
  These templates create, update, or reopen a Service Manager ticket using the default field mapping. The templates set the ticket status to Closed when the incident severity value becomes Clear.
5.2 Reading and Mapping Ticket Templates

This section provides detailed mapping information for the default ticket templates described above. The mappings are based on the out-of-box IncidentManagement WSDL for the HP Service Manager Web Service.

Each template is capable of handling create and update requests. The incident TicketID field determines how it is mapped. If the TicketID is empty, it is mapped to the Service Manager create request format. Otherwise, it is mapped to an update request format. The following sub-sections identify the create and update mappings for each template.

5.2.1 Service_Manager_7.0_Default_Incident.xsl - Create

Table 5–1 lists the fields and values that this template maps for a create operation. All references to the incident refer to the Enterprise Manager incident.

<table>
<thead>
<tr>
<th>Service Manager Field Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severity</td>
<td>Set the severity based on the incident severity. See Section 5.2.10, &quot;Severity Mapping&quot; for details.</td>
</tr>
<tr>
<td>Category</td>
<td>Hard-coded to &quot;shared infrastructure&quot;.</td>
</tr>
<tr>
<td>Subcategory</td>
<td>Hard-coded to &quot;enterprise&quot;.</td>
</tr>
<tr>
<td>Product Type</td>
<td>Hard-coded to &quot;applications&quot;.</td>
</tr>
<tr>
<td>Problem Type</td>
<td>Hard-coded to &quot;none&quot;.</td>
</tr>
<tr>
<td>Primary AssignmentGroup</td>
<td>Hard-coded to &quot;HELPDESK&quot;.</td>
</tr>
<tr>
<td>Initial Impact</td>
<td>Hard-coded to &quot;1&quot;.</td>
</tr>
<tr>
<td>Incident Description</td>
<td>Set to the formatted contents of the incident as specified in Section 5.2.9, &quot;Formatted Enterprise Manager Incident Contents&quot;.</td>
</tr>
<tr>
<td>Brief Description</td>
<td>Set to the incident Summary.</td>
</tr>
<tr>
<td>Journal Updates</td>
<td>Set to the formatted contents of the incident as specified in Section 5.2.9, &quot;Formatted Enterprise Manager Incident Contents&quot;.</td>
</tr>
<tr>
<td>Oracle Connector ID</td>
<td>Set to the incident ConnectorGUID.</td>
</tr>
</tbody>
</table>

5.2.2 Service_Manager_7.0_Default_Incident.xsl - Update

Table 5–2 lists the fields and values that this template maps for an update operation. All references to the incident refer to the Enterprise Manager incident.

<table>
<thead>
<tr>
<th>Service Manager Field Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incident ID</td>
<td>Set to the incident TicketID.</td>
</tr>
<tr>
<td>Incident Description</td>
<td>Set to the formatted contents of the incident as specified in Section 5.2.9, &quot;Formatted Enterprise Manager Incident Contents&quot;.</td>
</tr>
<tr>
<td>Brief Description</td>
<td>Set to the incident Summary.</td>
</tr>
<tr>
<td>IM Ticket Status</td>
<td>Set to &quot;Open&quot; if the incident ReopenTicket field is set to &quot;Yes.&quot;</td>
</tr>
</tbody>
</table>
5.2.3 Service_Manager_7.0_Default_Incident_AutoClose.xsl - Create

The field mappings for this template are identical to the mappings specified in Section 5.2.1, "Service_Manager_7.0_Default_Incident.xsl - Create".

5.2.4 Service Manager_7.0_Default_Incident_AutoClose.xsl - Update

Table 5–3 lists the fields and values that this template maps for an update operation. All references to the incident refer to the Enterprise Manager incident.

<table>
<thead>
<tr>
<th>Service Manager Field Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alert Status</td>
<td>Set to “reopen” if the incident ReopenTicket field is set to “Yes.”</td>
</tr>
<tr>
<td>Journal Updates</td>
<td>Set to the formatted contents of the incident as specified in Section 5.2.9, &quot;Formatted Enterprise Manager Incident Contents&quot;.</td>
</tr>
</tbody>
</table>

5.2.5 Service Manager_7.1_Default_Incident.xsl - Create

Table 5–4 lists the fields and values that this template maps for a create operation. All references to the incident refer to the Enterprise Manager incident.

<table>
<thead>
<tr>
<th>Service Manager Field Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severity</td>
<td>Set the severity based on the incident severity. See Section 5.2.10, &quot;Severity Mapping&quot; for details.</td>
</tr>
</tbody>
</table>
5.2.6 Service Manager_7.1_Default_Incident.xsl - Update

The field mappings for this template are identical to the mappings specified in Section 5.2.2, "Service_Manager_7.0_Default_Incident.xsl - Update".

5.2.7 Service Manager_7.1_Default_Incident_AutoClose.xsl - Create

The field mappings for this template are identical to the mappings specified in Section 5.2.5, "Service Manager_7.1_Default_Incident.xsl - Create".

5.2.8 Service Manager_7.1_Default_Incident_AutoClose.xsl - Update

The field mappings for this template are identical to the mappings specified in Section 5.2.4, "Service Manager_7.0_Default_Incident_AutoClose.xsl - Update".

5.2.9 Formatted Enterprise Manager Incident Contents

Example 5–1 shows the format used by the templates for the Description and JournalUpdates fields.

- Text delimited by angle brackets (< and >) designates an Enterprise Manager Incident field name that will be replaced by the actual field contents.
- Lines marked with double asterisks indicate they will only be present if the designated incident field contains data.
- The Notes section after the format contains information about some of the fields.

Example 5–1  Formatted Incident Contents

EM User: <NotificationRuleOwner>

Incident Information:

Source Name: <SourceObjInfo/ObjName>
Example 5-1 Notes

- EM User is set to the notification rule owner when the ticket is created through auto-ticketing, and is the Enterprise Manager log-in user when the ticket is created through manual-ticketing.

- The Target Properties section is only present if the incident contains target property values. Listed below are a couple of sample target property name/value pairs:
  - Line of business: Finance
  - Owner: Finance-DB Team

- CreationDate is set to the date the incident was created in Enterprise Manager.

- Owner is set to the incident owner in Enterprise Manager.

- URL is set to the URL of the incident details page in Enterprise Manager. The URL is set up as a link that can be clicked on to view the incident in Enterprise Manager.

5.2.10 Severity Mapping

The Service Manager ticket severity is set based on the Enterprise Manager incident severity value. Table 5–5 shows the values used when creating the ticket in Service Manager.

<table>
<thead>
<tr>
<th>When the incident severity is ...</th>
<th>Set the ticket severity to ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal</td>
<td>1 (Critical)</td>
</tr>
<tr>
<td>Critical</td>
<td>1 (Critical)</td>
</tr>
<tr>
<td>Warning</td>
<td>3 (Average)</td>
</tr>
</tbody>
</table>
Customizing Ticket Templates

If the out-of-box ticket templates do not satisfy your requirements, you can create custom templates tailored to your environment. Templates are XSLT files, so you must have a good understanding of XSLT transformations to create custom templates. To do this, Oracle recommends that you use one of the existing templates as the base template.

To create a custom template:

1. Export the default template XSLT files from Enterprise Manager to use as a baseline. Follow the instructions in Section 5.4, "Exporting the Ticketing Template Files" to obtain copies of the default template files.

2. Review Section 5.1 and Section 5.2 to understand the default mappings. Determine which file you want to use as a baseline and what mapping changes you want to make. Copy the baseline file to a new file with a different name.

3. Make the desired mapping changes to the new template file. See Section 5.5, "Modifying Ticket Templates" for guidance on mapping changes.

4. Register the new template with Enterprise Manager as specified in Section 3.5.1, "Adding Ticket Templates" on page 3-5.

See Section 5.6, "Custom Template Examples" for examples of how to create a custom template.

Exporting the Ticketing Template Files

The connector installation .jar file is included in the Self Update archive that was installed in Section 2.1, "Installing the Connector".

To extract the installation file:

1. Determine the command required to export the adapter installation file. To do this, perform the following steps:

   a. From the Setup menu in the Enterprise Manager console, select Extensibility, then Self Update.

   b. Click on the Management Connector link.

   c. Click on the HPSM connector and then select Export from the Actions list.

A pop-up window appears with the command required to export the file. Figure 5–1 shows an example of the window.

### Table 5–5 (Cont.) Ticket Severity Mappings

<table>
<thead>
<tr>
<th>When the incident severity is ...</th>
<th>Set the ticket severity to ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor Warning</td>
<td>4 (Low)</td>
</tr>
<tr>
<td>Informational</td>
<td>4 (Low)</td>
</tr>
</tbody>
</table>

5.3 Customizing Ticket Templates

5.4 Exporting the Ticketing Template Files
2. Open a command window on the Management Server host system and navigate to a temporary directory where you can copy the file.

3. Log into EM CLI using the following command. You will be asked to provide the password information for the sysman account.
   
   emcli login -username=sysman

4. Run the EM CLI export_update command from your system, changing `<dirname>` to the full path of the temporary directory.

   This creates a .zip file. The file name is comprised of the id value specified in the export_update command with a .zip extension. In the example command in Figure 5–1, the .zip file name would be:

   E9F684312AE7A18E98340715D079E58D.zip

5. Extract the adapter installation .jar file from the .zip file using the following command:

   unzip *.zip archives/*connector.jar

6. Extract the templates from the connector .jar file using the following command:

   $JAVA_HOME/bin/jar xf archives/*.jar templates

---

Note: If the system where the connector file is located does not have the JDK installed, you cannot extract the .jar file contents. You must copy the .jar file to a system that has the JDK installed and transfer the template files after they have been extracted.

---

5.5 Modifying Ticket Templates

A template is an XSLT file that transforms an input XML format to an output XML format. To make the mapping changes, you need to understand the input XML format being transformed, and the output XML the template generates. The input document is the XML document that contains the Enterprise Manager incident information. The output document is the request being sent to the HPSM web service. The output XML document must conform to the data format specified in the Service Manager IncidentManagement WSDL.

Appendix C contains details on the format of the incident data Enterprise Manager generates. Appendix D contains details on the XML format required by the out-of-box IncidentManagement Service Manager web service. Service Manager web services may be customized, so the format used in your environment could be significantly different.
To modify the custom template file:

1. Review Appendix D to identify the names of the fields in Service Manager that you are planning to modify. The order of the fields is important, so if you need to add new fields, make sure to note where the field goes.

2. If you are planning on using data from the incident, review Appendix C to identify the field(s) you want to use in the mapping. Appendix E contains sample transactions that could be very helpful in identifying what data is present in the XML document from Enterprise Manager.

3. Open the custom template file in a text editor or a utility that you can use to build XSLT files.

4. Make the necessary changes to the custom template file and save it.

5. Unless the change is very simple, you should test the changes that you have made using the sample data from Appendix E. This requires a utility that performs XSLT translations.

5.6 Custom Template Examples

This section provides walk-through examples of what is required to create custom templates. The first example is a simple case of changing values for fields that are already specified in the default templates. The second example is more involved, and includes populating fields that are not already in the default templates.

5.6.1 Example 1

In this example, the customer has determined that the default mappings do not function for their environment. They have created a new assignment group named "Tier 1 Support" that should handle all incidents that Enterprise Manager reports. They are running version 7.11 in their environment and would like to close the incidents in Service Manager after the incidents have cleared in Enterprise Manager. They have also created a temporary directory on the OMS server system at /home/oracle/custom_templates to hold the templates.

To create a custom template that handles the customer’s requirements:

1. Navigate to the Management Connector Updates page and export the HPSM 7.1 Connector.

2. Copy the first EM CLI command listed in the Export Steps window for later use:

   `emcli export_update -id=DD4E9161C5E7129F9641447FB4F0497B -omslocal -dir=<dirname>`

3. Open a command window on the OMS server system and change the working directory to the temporary directory:

   `cd /home/oracle/custom_templates`

4. Log into EM CLI:

   `emcli login -username=sysman`

5. Run the EM CLI command from step 1 to export the .zip file to the temporary directory.

   `emcli export_update -id=DD4E9161C5E7129F9641447FB4F0497B -omslocal -dir=/home/oracle/connector_templates`
6. Extract the connector .jar file from the .zip file:
   unzip *.zip archives/*connector.jar

7. Extract the template files from the .jar file:
   $JAVA_HOME/bin/jar xf archives/*.jar templates

8. Copy the default template to a custom template file for modification:
   cd templates
   cp ServiceManager_7.1_Default_Incident_AutoClose.xsl Tier1_Support_AutoClose.xsl

9. Open the custom template file with a text editor and make the modifications shown below to the PrimaryAssignmentGroup node.

   **Before changes** —
   <m:PrimaryAssignmentGroup>Service Desk</m:PrimaryAssignmentGroup>

   **After changes** —
   <m:PrimaryAssignmentGroup>Tier1 Support</m:PrimaryAssignmentGroup>

   Since this is a trivial change, you can skip testing.

10. At the OMS server system, run the following command to register your new custom template:
    emctl register_template connector
    -t /home/oracle/custom_templates/templates/Tier1_Support_AutoClose.xsl
    -repos_pwd sysmanpass
    -cname "HPSM 7.1"
    -iname 'Tier1SupportAutoClose'
    -tname 'Tier1 Support AutoClose'
    -ttype 2
    -d "Template to set assignment group to Tier1 Support"

5.6.2 Example 2

In this example, the customer would like to populate the following additional fields:

- **Affected Item** — This field will be populated by the Target Host information from the Target Properties.
- **Location** — This field will be populated by the Location information from the Target Properties.
- **Target URL** — This a new custom field that was added to their web service to hold the Target URL from the Enterprise Manager incident.

They are running version 7.01 in their environment, and would like to close the incidents in Service Manager after the incidents have cleared in Enterprise Manager. They have also created a temporary directory on the OMS server system at /home/oracle/custom_templates to hold the templates.

To create a custom template that handles their requirements:

1. Navigate to the Management Connector Updates page and export the **HPSM 7.0 Connector**.
2. Copy the first EM CLI command listed in the Export Steps window for later use:
emcli export_update -id=C5289206C5A5A84AF82C49821C8F2931 -omslocal -dir=<dirname>

3. Open a command window on the OMS server system and change the working directory to the temporary directory:
   cd /home/oracle/custom_templates

4. Log into EM CLI:
   emcli login -username=sysman

5. Run the EM CLI command from step 1 to export the .zip file to the temporary directory.
   emcli export_update -id=C5289206C5A5A84AF82C49821C8F2931 -omslocal -dir=/home/oracle/connector_templates

6. Extract the connector .jar file from the .zip file:
   unzip *.zip archives/*connector.jar

7. Extract the template files from the .jar file:
   $JAVA_HOME/bin/jar xf archives/*.jar templates

8. Copy the default template to a custom template file for modification:
   cd templates
   cp ServiceManager_7.0_Default_Incident_AutoClose.xsl Target_Info_AutoClose.xsl

9. Open the custom template file with a text editor and make the modifications shown below. The changes are shown in bold. Note that the new fields were added in the correct sequence as defined in the WSDL.

   **Before changes** —
   
   `<m:PrimaryAssignmentGroup>HELPDESK</m:PrimaryAssignmentGroup>`

   ...

   `<m:InitialImpact>1</m:InitialImpact>`

   ...

   `<m:OracleConnectorId><xsl:value-of select="ns0:ConnectorGUID"/></m:OracleConnectorId>`

   **After changes** —

   `<xsl:for-each select="ns0:SystemAttributes/ns0:SourceInfo/ns0:TargetInfo/ns0:TargetProperty">`
   
   `<xsl:if test="/ns0:Name = 'Target_Host'">
   `<m:AffectedItem><xsl:value-of select="/ns0:Value"/></m:AffectedItem>`
   
   </xsl:if>
   
   </xsl:for-each>`

   ...

   `<m:InitialImpact>1</m:InitialImpact>`
   `<xsl:for-each>`
select="ns0:SystemAttributes/ns0:SourceInfo/ns0:TargetInfo/ns0:TargetProperty">
   <xsl:if test="./ns0:Name = 'Location'">
      <m:Location><xsl:value-of select="./ns0:Value"/></m:Location>
   </xsl:if>
</xsl:for-each>

. . .

<m:OracleConnectorId><xsl:value-of
select="ns0:ConnectorGUID"/></m:OracleConnectorId>
<m:TargetURL><xsl:value-of
select="ns0:SystemAttributes/ns0:SourceInfo/ns0:TargetInfo/ns0:TargetURL"/></m:
TargetURL>

10. To set up for testing, create the create.xml file and open the file in a text editor.
11. Copy the contents of the XML document in the "Create Example" section of
Appendix E into the create.xml file and save it.
12. Test the new template using a utility that performs XSLT translations using the
create.xml file as the input XML document.
13. Examine the output XML document and verify that the results are correct.

---

**Note:** You can also use an XML client to send the XML output
document to the Management Server web service to verify that it is a
format accepted by Service Manager.

---

14. If you encounter problems with the XML document, make any necessary
corrections and repeat steps 12 and 13.
15. At the OMS server system, run the following command to register your new
custom template:
```bash
emctl register_template connector
talties/Target_Info_AutoClose.xsl
-repos_pwd sysmanpass
-cname "HPSM 7.0"
-iiname "TargetInfoAutoClose"
-tname "Target Info AutoClose"
-ttype 2
d "Template to set target fields"
```
Ticketing Inbound is a new optional feature added in Enterprise Manager 12c. This feature synchronizes the ticket status between Service Manager and Enterprise Manager. This feature requires the addition of a new field to the HPSM incident database to contain the Enterprise Manager connector identifier. It also requires the setup of a Java script in HPSM that is called to send the status information to Enterprise Manager whenever a status change occurs. You can skip this chapter if you choose not to implement this feature.

When a ticket or incident Enterprise Manager creates is updated manually at the Service Manager console, the new ticket status is updated in Enterprise Manager. The update at the Service Manager console triggers a Java script that calls the EM CLI utility to send the new status to Enterprise Manager.

This chapter provides the following procedures to set up the ticketing inbound feature:

- Adding a Custom Field to HPSM
- Setting Up EM CLI
- Exporting the Notification Script Files
- Setting Up the Notification Script
- Uninstall Customization to HP Service Manager for Support Ticket Inbound Operations
- Uninstalling EM CLI

### 6.1 Adding a Custom Field to HPSM

This section provides instructions to add a custom field to the HPSM incident database to contain the Enterprise Manager connector identifier. The identifier must be stored with the incident, because it is a required value that must be supplied when status updates are sent to Enterprise Manager.

To add the custom field:

1. Log in to the HPSM client using an account that has Administrative permissions.
2. Add the new custom field to the HPSM database to contain the Enterprise Manager connector ID as follows:
   a. Expand Menu Navigation, then Tailoring in the System Navigator pane.
   b. Double-click on Database Dictionary.
The Database Dictionary panel appears.

c. Enter a File Name of `probsummary` and click **Search**.

A form with the probsummary table information appears, as shown in Figure 6–1.

*Figure 6–1  probsummary Information*

![Database Dictionary Panel](image)

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Level</th>
<th>Index</th>
<th>SQL Name</th>
<th>SQL Type</th>
<th>SQL Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>descriptor</td>
<td>structure</td>
<td>0</td>
<td>1</td>
<td>NUMBER</td>
<td>VARCHAR(40)</td>
<td>m1</td>
</tr>
<tr>
<td>number</td>
<td>character</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>number.vj.db</td>
<td>character</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>number.vj.sla</td>
<td>character</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>number.vj</td>
<td>character</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>number.vj.alerts</td>
<td>character</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vj.number.1</td>
<td>character</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vj.number.2</td>
<td>character</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vj.number.3</td>
<td>character</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vj.number.4</td>
<td>character</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vj.number.5</td>
<td>character</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>number.attach</td>
<td>character</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>category</td>
<td>character</td>
<td>1</td>
<td>2</td>
<td>CATEGORY</td>
<td>VARCHAR(50)</td>
<td>m1</td>
</tr>
<tr>
<td>open.time</td>
<td>date/time</td>
<td>1</td>
<td>3</td>
<td>OPEN_TIME</td>
<td>DATE/TIME</td>
<td>m1</td>
</tr>
<tr>
<td>opened.by</td>
<td>character</td>
<td>1</td>
<td>4</td>
<td>OPENED_BY</td>
<td>VARCHAR(50)</td>
<td>m1</td>
</tr>
<tr>
<td>priority.code</td>
<td>character</td>
<td>1</td>
<td>6</td>
<td>PRIORITY_CODE</td>
<td>VARCHAR(40)</td>
<td>m1</td>
</tr>
<tr>
<td>severity</td>
<td>character</td>
<td>1</td>
<td>6</td>
<td>SEVERITY</td>
<td>VARCHAR(50)</td>
<td>m1</td>
</tr>
<tr>
<td>update.time</td>
<td>date/time</td>
<td>1</td>
<td>7</td>
<td>UPDATE_TIME</td>
<td>DATE/TIME</td>
<td>m1</td>
</tr>
<tr>
<td>assignment</td>
<td>character</td>
<td>1</td>
<td>8</td>
<td>ASSIGNMENT</td>
<td>VARCHAR(50)</td>
<td>m1</td>
</tr>
<tr>
<td>referral.time</td>
<td>date/time</td>
<td>1</td>
<td>9</td>
<td>REFERRAL_TIME</td>
<td>DATE/TIME</td>
<td>m1</td>
</tr>
<tr>
<td>referred.to</td>
<td>character</td>
<td>1</td>
<td>10</td>
<td>REFERRED_TO</td>
<td>VARCHAR(40)</td>
<td>m1</td>
</tr>
<tr>
<td>alert.time</td>
<td>date/time</td>
<td>1</td>
<td>11</td>
<td>ALERT_TIME</td>
<td>DATE/TIME</td>
<td>m1</td>
</tr>
<tr>
<td>status</td>
<td>character</td>
<td>1</td>
<td>12</td>
<td>STATUS</td>
<td>VARCHAR(50)</td>
<td>m1</td>
</tr>
<tr>
<td>close.time</td>
<td>date/time</td>
<td>1</td>
<td>13</td>
<td>CLOSE_TIME</td>
<td>DATE/TIME</td>
<td>m1</td>
</tr>
<tr>
<td>closed.by</td>
<td>character</td>
<td>1</td>
<td>14</td>
<td>CLOSED_BY</td>
<td>VARCHAR(50)</td>
<td>m1</td>
</tr>
</tbody>
</table>

d. Click on the line with a Name of `descriptor` and a Type of `structure`.
ed. Click on **New Field/Key**.

The Add Field window appears.

f. Enter a Name of `oracle.connector.id` and a type of `character`, then click **Add**.
g. Scroll down to the bottom of the list of fields and click on the row with the name of `oracle.connector.id`.
h. Click on **Edit Field/Key**. The field edit window appears, as shown in Figure 6–2.
i. Enter ORACLE_CONN_ID in the SQL Name field, VARCHAR(32) in the SQL Type field, and m2 in the SQL Table field, then click OK.

j. Click OK on the main panel.

The ALTER TABLE database SQL statement appears, and you are asked whether Service Manager should automatically apply the change, or whether you want to apply it manually.

k. Click SM Alters.

After a period of time, a message states that the record has been updated in the dbdict file.

3. Modify the web service to include the new database field as follows:

a. Expand Web Services in the System Navigator pane.

b. Double-click on WSDL Configuration.

The External Access Definition panel appears.

c. Enter probsummary in the Name field and click Search.

The record for probsummary will be loaded as shown in Figure 6–3.
6.1 Setting Up EM CLI

Install the Enterprise Manager EM CLI Client on the Service Manager server system. The EM CLI Client needs to be able to communicate with your OMS.

To install the Enterprise Manager EM CLI Client:

1. Log into the Enterprise Manager console.
2. From the Setup menu, select **Command Line Interface**.
3. Click the **Download the EM CLI kit to your workstation** link, and download the `emclikit.jar` file to the local system.
4. Transfer the jar file to the Service Manager server system.
5. At the HPSM server, set your `JAVA_HOME` environment variable and ensure that it is part of your `PATH`. You must be running Java 1.6.0_25 or greater. For example:
   ```
   setenv JAVA_HOME /usr/local/packages/j2sdk1.6.0_2
   setenv PATH $JAVA_HOME/bin:$PATH
   ```
6. Install the EM CLI Client on the Service Manager server. You can install the client portion of EM CLI in any directory using the following command, where `<emcli_dir>` is the installation directory:
   ```
   java -jar emclikit.jar client -install_dir=<emcli_dir>
   ```

d. Click on the **Fields** tab and scroll to the bottom of the list of fields.
e. Click on the **Field** column of the first empty row and select `oracle.connector.id` from the list.
f. Click on the **Caption** column on the same row and enter `OracleConnectorId`, then click OK.
7. Open a window using the account that runs the Service Manager Server. On a Windows system, this should be the System account.

To open a window running the System account, run the following command with <time> being 1 minute in the future. At the time specified, a window opens at the system console running under the context of the System account.

```bash
at <time> /interactive cmd.exe
```

8. Run the following command to configure the EM CLI Client to connect to OMS, where <hostname> is the host name or IP address where the OMS server is located, and <sysman_pwd> is the password for the sysman account in OMS:

```bash
<emcli_dir>\emcli setup -url=https://<hostname>:7801/em -username=sysman -password=<sysman_pwd>
```

9. Run the following command to synchronize the EM CLI Client with OMS:

```bash
<emcli_dir>\emcli sync
```

**Note:** EMCLI must be installed on the Service Manager server in order to communicate with your OMS.

### 6.3 Exporting the Notification Script Files

The notification script files are included in the Self Update archive that was installed in Section 2.1, "Installing the Connector".

To extract the script files:

1. Determine the command required to export the archive files. To do this, perform the following steps:
   
   a. From the **Setup** menu of the Enterprise manager console, select **Extensibility**, then **Self Update**.
   
   b. Click on the **Management Connector** link in the Type column.
      
      The HPSM connectors appear in the list with a status of Applied.
   
   c. Click on the HPSM connector, then select **Export** from the Actions list.
      
      A pop-up window, like the example shown in Figure 6–4, appears with the command required to export the file.

   ![Export Command Example](image)

2. Open a command window on the Management Server host system and navigate to a temporary directory where you can copy and unzip the file.
3. Log into EM CLI using the following command. You will be asked to provide the password information for the sysman account.

   \texttt{emcli login -username=sysman}

4. Run the EM CLI export\_update command from your system, changing \texttt{<dirname>} to the full path of the temporary directory.

   This action creates a zip file. The file name is comprised of the id value you specify in the export\_update command with a .zip extension. In the example command in Figure 6–4, the zip file name would be:

   \texttt{E9F684312AE7A18E98340715D079E58D.zip}

5. Extract the adapter installation jar file from the zip file using the following command:

   \texttt{unzip *.zip archives/OracleOMSPost.js}

6.4 Setting Up the Notification Script

   This section provides the steps required to configure HPSM to call the notification script.

   To configure HPSM to call the notification script:

   1. Log into the HPSM client with an account that has Administrative permissions.

   2. Create a Script Library that generates the parameters for the EM CLI call by performing the following sub-steps:

      a. Expand \texttt{Menu Navigation}, then \texttt{Tailoring} in the System Navigator pane.

      b. Double-click on \texttt{Script Library}.

         The Script Library panel appears.

      c. Enter a Name of \texttt{OracleServices} and a Package of \texttt{OracleScripts}.

      d. Copy the contents of the \texttt{OracleOMSPost.js} file from Section 6.3 into the script panel. Figure 6–5 shows the Script Library panel after the fields have been specified.

      e. Change the value of the username on line 6 from oms\_user to the username that Enterprise Manager will use to access the Service Manager web service.

      f. Click Add.
3. Create a Script Panel that calls the Script Library by performing the following sub-steps:

   a. Double-click on Scripts in the System Navigator panel. The Script Panel Definition panel appears.

   b. Enter a script name of OracleScript.

   c. Click on the Pre RAD Statements tab.

   d. Click on the first line and enter the following text, where <emcli_dir> is the path where the EM CLI tool was installed:

   ```
   $L.command=<emcli_dir>\emcli.bat;"+jscall("OracleServices.OracleOMSPost", $script)
   ```

   Note: Backslashes in the path must be entered as double backslashes. For example, C:\tools\em\emcli.bat would be entered as C:\tools\em\emcli.bat.

   Figure 6–6 shows the Script Library panel after the fields have been specified.

   e. Click on the RAD tab and set Application to us.launch.external.

   f. Click on the first line in the Names column and enter name.

   g. Click on the first line in the Values column and enter $L.command.

   h. Click Add to create the Script Panel.
4. Perform the following sub-steps to update the Format Control to invoke the script upon creating or updating a ticket:

a. Double-click on **Format Control** in the System Navigator panel.
   
The Search Format Control Records panel appears.

b. Enter **probsummary** in the Name field and click **Search**.
   
The Format Control: probsummary panel appears.

c. Click on the line where the Name is **probsummary**.

d. Click **Subroutines** to open the Subroutines tab.
   
One or more subroutines may already be defined.

e. Scroll down the screen to the last empty entry and enter the following data:
   
   - Set Add to **true**.
   
   - Set Upd to **true**.
   
   - Set Names to **file** on line 1, and **name** on line 2.
   
   - Set Values to **$file** on line 1, and **OracleScript** on line 2.

   Figure 6–7 shows the Format Control panel after you have specified the fields.

f. Click **Save**.
6.5 Uninstall Customization to HP Service Manager for Support Ticket Inbound Operations

This section provides the steps required to remove the changes made to HP Service Manager to allow for ticket inbound operations.

6.5.1 Remove Calls to the Notification Script

Follow the steps below to remove calls to the notification script:

1. Log in to the HP Service Manager client with an account that has Administrative permissions.
2. Expand Menu Navigation, then Tailoring in the System Navigator pane.
3. Double-click on Script Library.
4. Click Search to view all Scripts in the Script Library.
5. Find and select OracleServices, then click Delete, and Yes to confirm.
6. Double-click on Scripts in the System Navigator panel.
7. Click Search to view all Scripts available.
8. Find and select OracleScript, click Delete, then Yes to confirm.
10. Enter `probsummary` in the Name field and click **Search**.
11. Click on the line where the Name is `probsummary`.
12. Click **Subroutines** to open the Subroutines tab.
13. Click **Delete**, then **Yes** to confirm.

### 6.5.2 Remove Custom Field Added for Script Operation

Follow the steps below to remove custom field added for script operation:

1. Log in to the HP Service Manager client using an account that has Administrative permissions.
2. Expand **Menu Navigation**, then **Tailoring** in the System Navigator pane.
3. Double-click on **Database Dictionary**.
   The Database Dictionary panel appears.
4. Enter a File Name of `probsummary` and click **Search**.
5. Scroll down to the bottom of the list of fields and click on the row with the name of `oracle.connector.id`.
6. Click **Delete Dbdict Record**, and select **Yes** to confirm.
7. Expand **Menu Navigation**, then **Tailoring**, then **Web Services** in the System Navigator pane.
8. Double-click **WSDL Configuration**.
9. Enter `probsummary` in the Name field and click **Search**.
10. Click the **Fields** tab and scroll to the bottom of the list of fields.
11. Click the **Field** column of the first empty row and remove `oracle.connector.id`.
12. Click the **Caption** column on the same row and remove `OracleConnectorId`, then click **OK**.

### 6.6 Uninstalling EM CLI

To uninstall the Enterprise Manager command line interface (emcli), perform the following steps:

1. Navigate to the `emcli` installation directory.
2. Delete the `emcli` directory and all sub-directories from the system.
This appendix provides the needed instructions if you choose HTTPS as the protocol to establish a connection between HP Service Manager and Enterprise Manager.

A.1 Generating and Importing a Certificate Request

Do the following to generate and then import the certificate:

1. Generate a certificate request file for HP Service Manager and send it to the Certificate authority, such as VeriSign.
   The host name or IP address specified in the request must exactly match the host name or IP address that the connector will use.

   **Note:** The certificate request file is dependent on the Web server that HP Service Manager uses.

2. After you get the certificate, import it to the Web server that HP Service Manager uses. The import mechanism varies depending on the Web server that the HP Service Manager Help Desk uses.

A.2 Installing and Configuring SSL

For information about installing and configuring SSL, see the *Service Manager 7.0 Installation Guide*.

A.3 Importing the Adapter Certificate into Enterprise Manager

To import the adapter SSL certificate into the Enterprise Manager keystore:

1. At the Service Manager web server system, extract the SSL certificate from the keystore into a certificate file using the RFC 1421 format.
   If you use the Java keytool `-export_cert` command to extract the certificate, the `-rfc` option stores the certificate in the correct format.

2. Transfer the certificate file to the system where Enterprise Manager is installed.

3. Append the contents of the certificate file to:
   `$INSTANCE_HOME/sysman/config/b64LocalCertificate.txt`

   - Only append the following lines to the `b64LocalCertificate.txt` file (that is, do not include blank lines or comments or any other special characters):
4. Restart the OMS by entering the following commands:

```plaintext
emctl stop oms
emctl start oms
```

**Note:** Do not run the `emctl secure oms/agent` command after adding the external certificate to the `b64LocalCertificate.txt` file. If you run the `emctl secure` command later, repeat steps 3 and 4 to make sure the external certificate exists in the `b64certificate.txt` file.
Preventing HP Service Manager Update Issues

HP Service Manager 7.0 can cause update issues due to the method of locking for incidents. When either the Service Manager Thick or Web Client opens an incident in Service Manager for editing, a lock is placed on the incident that prohibits any updates to the incident record until it is released.

It is best practice for Help Desk administrators not to open the incident in edit mode to view the incident. If they need to edit the incident, they should minimize the time the incident is in edit mode, so if any updates are processed by the Enterprise Manager Connector Framework, the updates will be successful.
Templates translate the XML format of Enterprise Manager incidents to the XML format required for the end-point application's web service. To create custom templates, you need to understand the format of both sides so that you know how to map the data. This appendix provides detailed information on the format of the XML document that contains incident information from Enterprise Manager.

A schema file defines the structure of an XML document. The EMIncident.xsd schema file defines the main structure of the incident data. This file also imports structure information from other schema files. The following examples provide information from the schema files that define the EMIncident XML format.

Examples in this appendix are as follows:
- EMIncident.xsd File
- connectorCommon.xsd File
- EMEvent.xsd File
- externalEvent.xsd File

**Example C–1 EMIncident.xsd File**

```xml
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns="http://xmlns.oracle.com/sysman/connector"
    targetNamespace="http://xmlns.oracle.com/sysman/connector"
    elementFormDefault="qualified">
    <xsd:include schemaLocation="connectorCommon.xsd"/>
    <xsd:include schemaLocation="EMEvent.xsd"/>
    <xsd:element name="EMIncident">
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element name="ConnectorGUID" type="xsd:string"/>
                <xsd:element name="TicketID" type="xsd:string" minOccurs="0" maxOccurs="50"/>
                <xsd:element name="HDUser" type="xsd:string" minOccurs="0" maxOccurs="50"/>
                <xsd:element name="NotificationRuleOwner" type="xsd:string"/>
                <xsd:element name="NotificationRuleName" type="xsd:string"/>
                <xsd:element name="ReopenTicket" type="xsd:string" minOccurs="0" maxOccurs="50"/>
                <xsd:element name="ConnectorVariable" type="VariableType" minOccurs="0" maxOccurs="50"/>
                <xsd:element name="Property" type="PropertyType" minOccurs="0" maxOccurs="50"/>
                <xsd:element name="SystemAttributes" type="IncidentSystemAttributesType"/>
                <xsd:element name="HasEMEvent" type="xsd:boolean" minOccurs="1" maxOccurs="1"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
</xsd:schema>
```
Example C–2  connectorCommon.xsd File

```xml
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns="http://xmlns.oracle.com/sysman/connector"
    targetNamespace="http://xmlns.oracle.com/sysman/connector"
    elementFormDefault="qualified">
  <xsd:include schemaLocation="externalEvent.xsd"/>
  <xsd:complexType name="SourceInfoType">
    <xsd:annotation>
      <xsd:documentation>
      This section defines a complex type for Source Information.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="SourceObjInfo" type="SourceObjInfoType" minOccurs="0">
        <xsd:annotation>
          <xsd:documentation>
          This element defines the data structure for the source object, the
          EM subsystem or component, that raises an EM event or an incident.
          </xsd:documentation>
        </xsd:annotation>
      </xsd:element>
      <xsd:element name="TargetInfo" type="TargetInfoType" minOccurs="0">
        <xsd:annotation>
          <xsd:documentation>
          The element defines the data structure for an EM target as related to
          the connector framework.
          </xsd:documentation>
        </xsd:annotation>
      </xsd:element>
    </xsd:sequence>
  </xsd:complexType>
</xsd:schema>
```
This section defines a complex type for Source Object Information.

- **ObjID** (xsd:string): The unique ID to identify the source object.
- **ObjName** (xsd:string): The name of the source object.
- **ObjOwner** (xsd:string, minOccurs=0): The owner of the source object.
- **SourceObjType** (xsd:string): The type of the source object.
- **SourceObjSubType** (xsd:string, minOccurs=0): The subtype of the source object.

This section defines a complex type for target information.

- **TargetGUID** (xsd:string): A unique GUID for the target.
<xsd:complexType name="VariableType">
  <xsd:annotation>
    <xsd:documentation>
      This section defines a complex type for a general variable.
    </xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="VariableName" type="StringStrictT32">
      <xsd:annotation>
        <xsd:documentation>
          Name of the variable. It has to be a string containing 1 or up to 32 upper case or lower case letters or numbers.
        </xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element name="VariableValue" type="StringT2048">
      <xsd:annotation>
        <xsd:documentation>
          Value of the variable. It has to be a string containing 1 or up to 2048 characters.
        </xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="GetAlertsResponse">
  <xsd:annotation>
    <xsd:documentation>
      This section defines a complex type for responses to a getAlerts request.
    </xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="Alert" minOccurs="0" maxOccurs="200">
      <xsd:annotation>
        <xsd:documentation>
          The individual alerts contained in the response. A response may have up to 200 alerts.
        </xsd:documentation>
      </xsd:annotation>
      <xsd:complexType>
        <xsd:sequence>
          <xsd:element ref="ExternalEvent">
            <xsd:annotation>
              <xsd:documentation>
                Details of the external event in the alert, as defined in ExternalEvent.xsd.
              </xsd:documentation>
            </xsd:annotation>
          </xsd:element>
          <xsd:element name="InstanceVariable" type="VariableType" minOccurs="0" maxOccurs="50">
            <xsd:annotation>
              <xsd:documentation>
                A list of instance variables for the alert.
              </xsd:documentation>
            </xsd:annotation>
          </xsd:element>
        </xsd:sequence>
      </xsd:complexType>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>
This section defines a complex type for connector variables. An element of type ConnectorVariablesType may have up to 50 connector variables, as defined next.

A connector variable as a name/value pair.

This section defines a simple type for a String with maximum length of 64 bytes.

This section defines a simple type for a String with maximum length of 128 bytes.

This section defines a simple type for a String with maximum length of 256 bytes.
<xsd:simpleType name="StringT512">
  <xsd:annotation>
    <xsd:documentation>
      This section defines a simple type for a String with maximum length of 512 bytes.
    </xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:minLength value="1"/>
    <xsd:maxLength value="512"/>
  </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="StringT2048">
  <xsd:annotation>
    <xsd:documentation>
      This section defines a simple type for a String with maximum length of 2048 bytes.
    </xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:minLength value="1"/>
    <xsd:maxLength value="2048"/>
  </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="StringStrictT16">
  <xsd:annotation>
    <xsd:documentation>
      This section defines a simple type for a String with maximum length of 16 bytes. The String can only contain lower or upper case letters, numbers, and the underscore characters.
    </xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:minLength value="1"/>
    <xsd:maxLength value="16"/>
    <xsd:pattern value="([a-zA-Z0-9_])*/"/>
  </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="StringStrictT32">
  <xsd:annotation>
    <xsd:documentation>
      This section defines a simple type for a String with maximum length of 32 bytes. The String can only contain lower or upper case letters, numbers, and the underscore characters.
    </xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:minLength value="1"/>
    <xsd:maxLength value="32"/>
    <xsd:pattern value="([a-zA-Z0-9_])*/"/>
  </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="StringStrictT64">
  <xsd:annotation>
    <xsd:documentation>
      This section defines a simple type for a String with maximum length of 64 bytes. The String can only contain lower or upper case letters, numbers,
and the underscore characters.
</xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
    <xsd:minLength value="1"/>
    <xsd:maxLength value="64"/>
    <xsd:pattern value="([a-zA-Z0-9_]*\]?)"/>
</xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="StringStrictT128">
    <xsd:annotation>
        <xsd:documentation>
            This section defines a simple type for a String with maximum length of 128 bytes. The String can only contain lower or upper case letters, numbers, and the underscore characters.
        </xsd:documentation>
    </xsd:annotation>
    <xsd:restriction base="xsd:string">
        <xsd:minLength value="1"/>
        <xsd:maxLength value="128"/>
        <xsd:pattern value="([a-zA-Z0-9_]*\]?)"/>
    </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="StringStrictT256">
    <xsd:annotation>
        <xsd:documentation>
            This section defines a simple type for a String with maximum length of 256 bytes. The String can only contain lower or upper case letters, numbers, and the underscore characters.
        </xsd:documentation>
    </xsd:annotation>
    <xsd:restriction base="xsd:string">
        <xsd:minLength value="1"/>
        <xsd:maxLength value="256"/>
        <xsd:pattern value="([a-zA-Z0-9_]*\]?)"/>
    </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="VersionT">
    <xsd:annotation>
        <xsd:documentation>
            This section defines a simple type for a String with maximum length of 20 bytes. The String can only contain numbers and the period characters.
        </xsd:documentation>
    </xsd:annotation>
    <xsd:restriction base="xsd:string">
        <xsd:minLength value="1"/>
        <xsd:maxLength value="20"/>
        <xsd:pattern value="([0-9.]*\]?)"/>
    </xsd:restriction>
</xsd:simpleType>
</xsd:schema>

Example C–3  EMEvent.xsd File

<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns="http://xmlns.oracle.com/sysman/connector"
    targetNamespace="http://xmlns.oracle.com/sysman/connector"
<xsd:complexType name="EMEventType">
  <xsd:sequence>
    <xsd:element name="ConnectorGUID" type="xsd:string" />
    <xsd:element name="ExternalEventID" type="xsd:string" minOccurs="0" />
    <xsd:element name="NotificationRuleOwner" type="xsd:string" />
    <xsd:element name="NotificationRuleName" type="xsd:string" />
    <xsd:element name="ConnectorVariable" type="VariableType" minOccurs="0" maxOccurs="50" />
    <xsd:element name="Property" type="PropertyType" minOccurs="0" maxOccurs="50" />
    <xsd:element name="SystemAttributes" type="EventSystemAttributesType" />
    <xsd:element name="EventClassSpecificAttributes" type="EventSystemAttributesType" />
  </xsd:sequence>
</xsd:complexType>
Example C–4  externalEvent.xsd File

<?xml version="1.0" encoding='UTF-8'?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns="http://xmlns.oracle.com/sysman/connector"
    targetNamespace="http://xmlns.oracle.com/sysman/connector"
    elementFormDefault='qualified'>

    <xsd:element name="ExternalEvent">
        <xsd:annotation>
            <xsd:documentation>
                This section defines the attribute requirement of an external event for the connector framework to process it.
            </xsd:documentation>
        </xsd:annotation>

        <xsd:complexType>
            <xsd:sequence>
                <xsd:element name="SystemAttributes" type="ExternalEventSystemAttributesType">
                    <xsd:annotation>
                        <xsd:documentation>
                            Attributes to capture general information about the external event system. These attributes are system-specific, with all events from the same external system sharing the same system attributes.
                        </xsd:documentation>
                    </xsd:annotation>
                </xsd:element>
                <xsd:element name="EventClassAttributes" type="ExternalEventClassAttributesType">
                    <xsd:annotation>
                        <xsd:documentation>
                            Attributes to capture specific information required for the event as defined in the event class.
                        </xsd:documentation>
                    </xsd:annotation>
                </xsd:element>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>

</xsd:schema>
<xsd:complexType name="ExternalEventSystemAttributesType">
    <xsd:annotation>
        <xsd:documentation>
            This section defines a complex type for system attributes required for all external events.
        </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
        <xsd:element name="eventName" type="xsd:string" minOccurs="0">
            <xsd:annotation>
                <xsd:documentation>
                    Name of the event.
                </xsd:documentation>
            </xsd:annotation>
        </xsd:element>
        <xsd:element name="category" type="xsd:string" minOccurs="0" maxOccurs="50">
            <xsd:annotation>
                <xsd:documentation>
                    The event category to which the event belongs.
                </xsd:documentation>
            </xsd:annotation>
        </xsd:element>
        <xsd:element name="targetName" type="xsd:string">
            <xsd:annotation>
                <xsd:documentation>
                    Name of the target on which event was generated. It refers to an entity in external systems similar to an EM target.
                </xsd:documentation>
            </xsd:annotation>
        </xsd:element>
        <xsd:element name="targetType" type="xsd:string">
            <xsd:annotation>
                <xsd:documentation>
                    The type of the target. Target types defined for event connectors are used. See connectorDeploy.xsd.
                </xsd:documentation>
            </xsd:annotation>
        </xsd:element>
        <xsd:element name="occurrenceDate" type="xsd:dateTime">
            <xsd:annotation>
                <xsd:documentation>
                    Date when the event occurred.
                </xsd:documentation>
            </xsd:annotation>
        </xsd:element>
        <xsd:element name="detectedDate" type="xsd:dateTime">
            <xsd:annotation>
                <xsd:documentation>
                    Date when the event was last detected.
                </xsd:documentation>
            </xsd:annotation>
        </xsd:element>
        <xsd:element name="autoClose" type="xsd:boolean">
            <xsd:annotation>
                <xsd:documentation>
                    A flag indicating if an event is auto closed by the system, or it
has to be manually closed by users.
</xsd:documentation>
</xsd:annotation>
</xsd:element>
<xsd:element name="message" type="xsd:string">
<xsd:annotation>
<xsd:documentation>
A description of the event.
</xsd:documentation>
</xsd:annotation>
</xsd:element>
<xsd:element name="severity" type="xsd:string">
<xsd:annotation>
<xsd:documentation>
Severity level of the event.
</xsd:documentation>
</xsd:annotation>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
<xsd:complexType name="ExternalEventClassAttributesType">
<xsd:annotation>
<xsd:documentation>
This section defines a complex type for class specific attributes required for all external events in the class.
</xsd:documentation>
</xsd:annotation>
<xsd:sequence>
<xsd:element name="external_event_id" type="xsd:string">
<xsd:annotation>
<xsd:documentation>
ID used in external system to identify the event.
</xsd:documentation>
</xsd:annotation>
</xsd:element>
<xsd:element name="external_rule_id" type="xsd:string" minOccurs="0">
<xsd:annotation>
<xsd:documentation>
Optional rule ID that delivered the event in the external system.
</xsd:documentation>
</xsd:annotation>
</xsd:element>
<xsd:element name="external_host" type="xsd:string" minOccurs="0">
<xsd:annotation>
<xsd:documentation>
Optional host information from external system where event was generated.
</xsd:documentation>
</xsd:annotation>
</xsd:element>
<xsd:element name="external_source" type="xsd:string" minOccurs="0">
<xsd:annotation>
<xsd:documentation>
Optional source information from the external system.
</xsd:documentation>
</xsd:annotation>
</xsd:element>
<xsd:element name="external_severity" type="xsd:string">
<xsd:annotation>
<xsd:documentation>
Severity level of the event on external system.
</xsd:documentation>
</xsd:annotation>
</xsd:element>
<xsd:element name="external_status" type="xsd:string" minOccurs="0">
<xsd:annotation>
<xsd:documentation>
Status of the event on external system.
</xsd:documentation>
</xsd:annotation>
</xsd:element>
<xsd:element name="custom_field1" type="xsd:string" minOccurs="0">
<xsd:annotation>
<xsd:documentation>
An optional field.
</xsd:documentation>
</xsd:annotation>
</xsd:element>
<xsd:element name="custom_field2" type="xsd:string" minOccurs="0">
<xsd:annotation>
<xsd:documentation>
An optional field.
</xsd:documentation>
</xsd:annotation>
</xsd:element>
<xsd:element name="custom_field3" type="xsd:string" minOccurs="0">
<xsd:annotation>
<xsd:documentation>
An optional field.
</xsd:documentation>
</xsd:annotation>
</xsd:element>
<xsd:element name="custom_field4" type="xsd:string" minOccurs="0">
<xsd:annotation>
<xsd:documentation>
An optional field.
</xsd:documentation>
</xsd:annotation>
</xsd:element>
<xsd:element name="custom_field5" type="xsd:string" minOccurs="0">
<xsd:annotation>
<xsd:documentation>
An optional field.
</xsd:documentation>
</xsd:annotation>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:schema>
Templates translate the XML format of Enterprise Manager incidents to the XML format required for the end-point application’s web service. To create custom templates, you need to understand the format of both sides so that you know how to map the data. This appendix provides detailed information on the format of the XML document that the Service Manager Web service requires.

A WSDL file defines the interface that must be used to call a Web service. The WSDL defines the structure of the XML document that it accepts and how the Web service is to be called. The contents of the WSDL file are listed in Example D–1. All unused operations and messages have been removed to reduce the amount of information. This is the out-of-box WSDL that Service Manager provides. Your WSDL may be significantly different, because the Service Manager web services can be highly customized.

Examples provided in this appendix are as follows:

- IncidentManagement WSDL File
- Common.xsd File

Example D–1  IncidentManagement WSDL File

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
<definitions targetNamespace="http://servicecenter.peregrine.com/PWS"
    xmlns="http://schemas.xmlsoap.org/wsdl/"
    xmlns:cmn="http://servicecenter.peregrine.com/PWS/Common"
    xmlns:http="http://schemas.xmlsoap.org/wsdl/http/"
    xmlns:mime="http://schemas.xmlsoap.org/wsdl/mime/"
    xmlns:ns="http://servicecenter.peregrine.com/PWS"
    xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xsi:schemaLocation="http://schemas.xmlsoap.org/wsdl/
    http://www.w3.org/2001/XMLSchema"
    xsi:schemaLocation="http://servicecenter.peregrine.com/PWS"
    xmlns:cmn="http://servicecenter.peregrine.com/PWS/Common">
    <types>
        <xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
            attributeFormDefault="unqualified"
            elementFormDefault="qualified"
            targetNamespace="http://servicecenter.peregrine.com/PWS"
            version="2008-09-11 Rev 0"
            xmlns="http://servicecenter.peregrine.com/PWS"
            xmlns:cmn="http://servicecenter.peregrine.com/PWS/Common">
            <xs:import namespace="http://servicecenter.peregrine.com/PWS/Common"
                schemaLocation="http://hpsm710c:13080/sc62server/PWS/Common.xsd"/>
            <xs:complexType name="IncidentKeysType">
                <xs:sequence>
                    ...
                </xs:sequence>
            </xs:complexType>
        </xs:schema>
    </types>
</definitions>
```
<xs:element minOccurs="0" name="IncidentID" nillable="true" type="cmn:StringType"/>
</xs:sequence>
<xs:attribute name="query" type="xs:string" use="optional"/>
</xs:complexType>
<xs:complexType name="IncidentInstanceType">
<xs:sequence>
<xs:element minOccurs="0" name="IncidentID" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="Category" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="OpenTime" nillable="true" type="cmn:DateTimeType"/>
<xs:element minOccurs="0" name="OpenedBy" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="severity" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="UpdatedTime" nillable="true" type="cmn:DateTimeType"/>
<xs:element minOccurs="0" name="PrimaryAssignmentGroup" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="ClosedTime" nillable="true" type="cmn:DateTimeType"/>
<xs:element minOccurs="0" name="ClosedBy" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="ClosureCode" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="AffectedItem" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="IncidentDescription">
<xs:complexType>
<xs:complexContent>
<xs:extension base="cmn:ArrayType">
<xs:sequence>
<xs:element maxOccurs="unbounded" minOccurs="0" name="IncidentDescription" type="cmn:StringType"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
</xs:element>
<xs:element minOccurs="0" name="Resolution">
<xs:complexType>
<xs:complexContent>
<xs:extension base="cmn:ArrayType">
<xs:sequence>
<xs:element maxOccurs="unbounded" minOccurs="0" name="Resolution" type="cmn:StringType"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
</xs:element>
<xs:element minOccurs="0" name="AssigneeName" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="Contact" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="JournalUpdates">
  <xs:complexType>
    <xs:complexContent>
      <xs:extension base="cmn:ArrayType">
        <xs:sequence>
          <xs:element maxOccurs="unbounded" minOccurs="0" name="JournalUpdates" type="cmn:StringType"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:element>
<xs:element minOccurs="0" name="AlertStatus" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="ContactLastName" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="ContactFirstName" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="Company" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="BriefDescription" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="TicketOwner" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="UpdatedBy" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="IMTicketStatus" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="Subcategory" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="SLAAgreementID" nillable="true" type="cmn:DecimalType"/>
<xs:element minOccurs="0" name="SiteCategory" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="ProductType" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="ProblemType" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="ResolutionFixType" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="UserPriority" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="Location" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="Solution">
  <xs:complexType>
    <xs:complexContent>
      <xs:extension base="cmn:ArrayType">
        <xs:sequence>
          <xs:element maxOccurs="unbounded" type="cmn:StringType"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:element>
<xs:element minOccurs="0" name="Solution" type="cmn:StringType"/>
</xs:sequence>
</xs:extension>
</xs:complexType>
</xs:element>
<xs:element minOccurs="0" name="InitialImpact" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="folder" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="Service" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="OracleConnectorId" nillable="true" type="cmn:StringType"/>
<xs:element minOccurs="0" name="attachments" nillable="true" type="cmn:AttachmentsType"/>
</xs:sequence>
<xs:attribute name="query" type="xs:string" use="optional"/>
<xs:attribute name="uniquequery" type="xs:string" use="optional"/>
</xs:complexType>
</xs:element>
<xs:element name="RetrieveIncidentRequest">
<xs:complexType>
<xs:sequence>
<xs:element name="model" type="IncidentModelType"/>
</xs:sequence>
<xs:attribute name="attachmentInfo" type="xs:boolean" use="optional"/>
<xs:attribute name="attachmentData" type="xs:boolean" use="optional"/>
<xs:attribute default="true" name="ignoreEmptyElements" type="xs:boolean" use="optional"/>
</xs:complexType>
</xs:element>
<xs:element name="RetrieveIncidentResponse">
<xs:complexType>
<xs:sequence>
<xs:element name="model" type="IncidentModelType"/>
<xs:element minOccurs="0" name="messages" type="cmn:MessagesType"/>
</xs:sequence>
<xs:attribute name="status" type="cmn:StatusType" use="required"/>
<xs:attribute name="message" type="xs:string" use="required"/>
<xs:attribute name="schemaRevisionDate" type="xs:date" use="required"/>
<xs:attribute name="schemaRevisionLevel" type="xs:int" use="required"/>
</xs:complexType>
</xs:element>
<xs:element name="CreateIncidentRequest">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="model" type="IncidentModelType"/>
    </xs:sequence>
    <xs:attribute name="attachmentInfo" type="xs:boolean" use="optional"/>
    <xs:attribute name="attachmentData" type="xs:boolean" use="optional"/>
    <xs:attribute default="true" name="ignoreEmptyElements" type="xs:boolean" use="optional"/>
  </xs:complexType>
</xs:element>

<xs:element name="CreateIncidentResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="model" type="IncidentModelType"/>
      <xs:element minOccurs="0" name="messages" type="cmn:MessagesType"/>
    </xs:sequence>
    <xs:attribute name="status" type="cmn:StatusType" use="required"/>
    <xs:attribute name="message" type="xs:string" use="required"/>
    <xs:attribute name="schemaRevisionDate" type="xs:date" use="required"/>
    <xs:attribute name="schemaRevisionLevel" type="xs:int" use="required"/>
    <xs:attribute name="returnCode" type="xs:decimal" use="optional"/>
    <xs:attribute name="query" type="xs:string" use="optional"/>
  </xs:complexType>
</xs:element>

<xs:element name="UpdateIncidentRequest">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="model" type="IncidentModelType"/>
    </xs:sequence>
    <xs:attribute name="attachmentInfo" type="xs:boolean" use="optional"/>
    <xs:attribute name="attachmentData" type="xs:boolean" use="optional"/>
    <xs:attribute default="true" name="ignoreEmptyElements" type="xs:boolean" use="optional"/>
  </xs:complexType>
</xs:element>

<xs:element name="UpdateIncidentResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="model" type="IncidentModelType"/>
      <xs:element minOccurs="0" name="messages" type="cmn:MessagesType"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:attribute name="status" type="cmn:StatusType" use="required"/>
<xs:attribute name="message" type="xs:string" use="required"/>
<xs:attribute name="schemaRevisionDate" type="xs:date" use="required"/>
<xs:attribute name="schemaRevisionLevel" type="xs:int" use="required"/>
<xs:attribute name="returnCode" type="xs:decimal" use="optional"/>
<xs:attribute name="query" type="xs:string" use="optional"/>
</xs:complexType>
</xs:element>
</xs:schema>
<message name="RetrieveIncidentRequest">
<part element="ns:RetrieveIncidentRequest" name="RetrieveIncidentRequest"/>
</message>
<message name="RetrieveIncidentResponse">
<part element="ns:RetrieveIncidentResponse" name="RetrieveIncidentResponse"/>
</message>
<message name="CreateIncidentRequest">
<part element="ns:CreateIncidentRequest" name="CreateIncidentRequest"/>
</message>
<message name="CreateIncidentResponse">
<part element="ns:CreateIncidentResponse" name="CreateIncidentResponse"/>
</message>
<message name="UpdateIncidentRequest">
<part element="ns:UpdateIncidentRequest" name="UpdateIncidentRequest"/>
</message>
<message name="UpdateIncidentResponse">
<part element="ns:UpdateIncidentResponse" name="UpdateIncidentResponse"/>
</message>
<portType name="IncidentManagement">
<operation name="RetrieveIncident">
<documentation/>
<input message="ns:RetrieveIncidentRequest"/>
<output message="ns:RetrieveIncidentResponse"/>
</operation>
<operation name="CreateIncident">
<documentation/>
<input message="ns:CreateIncidentRequest"/>
<output message="ns:CreateIncidentResponse"/>
</operation>
<operation name="UpdateIncident">
<documentation/>
<input message="ns:UpdateIncidentRequest"/>
<output message="ns:UpdateIncidentResponse"/>
</operation>
</portType>
<binding name="IncidentManagement" type="ns:IncidentManagement">
<soap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>
<operation name="RetrieveIncident">
<soap:operation soapAction="Retrieve" style="document"/>
<input>
<soap:body use="literal"/>
</input>
<output>
<soap:body use="literal"/>
</output>
</operation>
<operation name="CreateIncident">
<soap:operation soapAction="Create" style="document">
<input>
<soap:body use="literal"/>
</input>
<output>
<soap:body use="literal"/>
</output>
</operation>
<operation name="UpdateIncident">
<soap:operation soapAction="Update" style="document">
<input>
<soap:body use="literal"/>
</input>
<output>
<soap:body use="literal"/>
</output>
</operation>
</binding>
<service name="IncidentManagement">
<port binding="ns:IncidentManagement" name="IncidentManagement">
<soap:address location="http://hpsm710c:13080/sc62server/ws"/>
</port>
</service>
</definitions>

Example D–2  Common.xsd File

<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    attributeFormDefault="unqualified"
    elementFormDefault="qualified"
    targetNamespace="http://servicecenter.peregrine.com/PWS/Common"
    version="2008-09-11 Rev 0"
    xmlns="http://servicecenter.peregrine.com/PWS/Common"
    xmlns:cmn="http://servicecenter.peregrine.com/PWS/Common">
<xsd:complexType name="StringType">
    <xsd:simpleContent>
        <xsd:extension base="xsd:string">
            <xsd:attribute fixed="String" name="type" type="xsd:string" use="required"/>
            <xsd:attribute name="mandatory" type="xsd:boolean" use="optional"/>
            <xsd:attribute name="readonly" type="xsd:boolean" use="optional"/>
        </xsd:extension>
    </xsd:simpleContent>
</xsd:complexType>
<xsd:complexType name="DecimalType">
    <xsd:simpleContent>
        <xsd:extension base="xsd:decimal">
            <xsd:attribute fixed="Decimal" name="type" type="xsd:string" use="required"/>
            <xsd:attribute name="mandatory" type="xsd:boolean" use="optional"/>
            <xsd:attribute name="readonly" type="xsd:boolean" use="optional"/>
        </xsd:extension>
    </xsd:simpleContent>
</xsd:complexType>
<xsd:complexType name="BooleanType">
    <xsd:simpleContent>
<xs:extension base="xs:short">
    <xs:attribute fixed="Short" name="type" type="xs:string"
        use="required"/>
    <xs:attribute name="mandatory" type="xs:boolean" use="optional"/>
    <xs:attribute name="readonly" type="xs:boolean" use="optional"/>
</xs:extension>
</xs:simpleContent>
</xs:complexType>

<xs:complexType name="LongType">
    <xs:simpleContent>
        <xs:extension base="xs:long">
            <xs:attribute fixed="Long" name="type" type="xs:string"
                use="required"/>
            <xs:attribute name="mandatory" type="xs:boolean" use="optional"/>
            <xs:attribute name="readonly" type="xs:boolean" use="optional"/>
        </xs:extension>
    </xs:simpleContent>
</xs:complexType>

<xs:complexType name="ByteType">
    <xs:simpleContent>
        <xs:extension base="xs:byte">
            <xs:attribute fixed="Byte" name="type" type="xs:string"
                use="required"/>
            <xs:attribute name="mandatory" type="xs:boolean" use="optional"/>
            <xs:attribute name="readonly" type="xs:boolean" use="optional"/>
        </xs:extension>
    </xs:simpleContent>
</xs:complexType>

<xs:complexType name="FloatType">
    <xs:simpleContent>
        <xs:extension base="xs:float">
            <xs:attribute fixed="Float" name="type" type="xs:string"
                use="required"/>
            <xs:attribute name="mandatory" type="xs:boolean" use="optional"/>
            <xs:attribute name="readonly" type="xs:boolean" use="optional"/>
        </xs:extension>
    </xs:simpleContent>
</xs:complexType>

<xs:complexType name="DoubleType">
    <xs:simpleContent>
        <xs:extension base="xs:double">
            <xs:attribute fixed="Double" name="type" type="xs:string"
                use="required"/>
            <xs:attribute name="mandatory" type="xs:boolean" use="optional"/>
            <xs:attribute name="readonly" type="xs:boolean" use="optional"/>
        </xs:extension>
    </xs:simpleContent>
</xs:complexType>

<xs:complexType name="Base64Type">
    <xs:simpleContent>
        <xs:extension base="xs:base64Binary">
            <xs:attribute fixed="Base64" name="type" type="xs:string"
                use="required"/>
            <xs:attribute name="mandatory" type="xs:boolean" use="optional"/>
            <xs:attribute name="readonly" type="xs:boolean" use="optional"/>
        </xs:extension>
    </xs:simpleContent>
</xs:complexType>

<xs:complexType name="ArrayType">
    <xs:attribute fixed="Array" name="type" type="xs:string" use="required"/>
</xs:complexType>
</xs:complexType>
<xs:complexType name="StructureType">
  <xs:attribute fixed="Structure" name="type" type="xs:string"
    use="required"/>
</xs:complexType>
<xs:complexType name="AttachmentType">
  <xs:attribute name="href" type="xs:string" use="optional"/>
  <xs:attribute name="contentId" type="xs:string" use="optional"/>
  <xs:attribute name="action" type="xs:string" use="optional"/>
  <xs:attribute name="name" type="xs:string" use="required"/>
  <xs:attribute name="type" type="xs:string" use="required"/>
  <xs:attribute name="len" type="xs:int" use="optional"/>
  <xs:attribute name="charset" type="xs:string" use="optional"/>
  <xs:attribute name="attachmentType" type="xs:string" use="optional"/>
</xs:complexType>
<xs:complexType name="AttachmentsType">
  <xs:sequence>
    <xs:element maxOccurs="unbounded" minOccurs="0" name="attachment"
      type="AttachmentType"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="MessageType">
  <xs:simpleContent>
    <xs:extension base="StringType">
      <xs:attribute name="severity" type="xs:int" use="optional"/>
      <xs:attribute name="module" type="xs:string" use="optional"/>
    </xs:extension>
  </xs:simpleContent>
</xs:complexType>
<xs:complexType name="MessagesType">
  <xs:sequence>
    <xs:element maxOccurs="unbounded" minOccurs="0" name="message"
      type="MessageType"/>
  </xs:sequence>
</xs:complexType>
<xs:simpleType name="StatusType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="SUCCESS"/>
    <xs:enumeration value="FAILURE"/>
  </xs:restriction>
</xs:simpleType>
</xs:schema>
This appendix contains examples that show the XML format of incidents from Enterprise Manager that conform to the schemas defined in Appendix C. You can use these examples to help identify the fields to map when generating custom templates. You can also use them to test your custom templates after they have been built.

Examples provided in this appendix are as follows:

- Create Example
- Update Example
- Clear Example
- Reopen Example

E.1 Create Example

The following example shows the XML format Enterprise Manager generates for HPSM create operations.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<EMIncident xmlns="http://xmlns.oracle.com/sysman/connector">
  <ConnectorGUID>5F8E3F54D2164AA8B4D3701656FF2524</ConnectorGUID>
  <TicketID/>
  <HDUser>iwave</HDUser>
  <NotificationRuleOwner>SYSMAN</NotificationRuleOwner>
  <NotificationRuleName>HPSM 7.1 Autoclose Rule</NotificationRuleName>
  <ReopenTicket>No</ReopenTicket>
  <ConnectorVariable>
    <VariableName>TICKET_ID</VariableName>
    <VariableValue>IM10237</VariableValue>
  </ConnectorVariable>
  <Property>
    <Name>AuthenticationType</Name>
    <Value>HTTPBasicAuthentication</Value>
  </Property>
  <Property>
    <Name>IsNewTargetType</Name>
    <Value>no</Value>
  </Property>
  <SystemAttributes>
    <IncidentID>B6096FBDB6FEC905E040020A780122F7</IncidentID>
    <SourceInfo>
      <SourceObjInfo>
        <ObjID>D93A2E4E1622013D74D9534ECB090944</ObjID>
        <ObjName>orcsvr1.iwavesoftware.com</ObjName>
        <ObjOwner>SYSMAN</ObjOwner>
      </SourceObjInfo>
    </SourceInfo>
  </SystemAttributes>
</EMIncident>
```
Create Example

<SourceObjType>Targets</SourceObjType>
<SourceObjSubType>host</SourceObjSubType>
</SourceObjInfo>

<TargetInfo>
<TargetGUID>D93A2E4E1622013D74D9534ECB090944</TargetGUID>
<TargetName>orcsvr1.iwavesoftware.com</TargetName>
<TargetType>host</TargetType>
<TargetTypeLabel>Host</TargetTypeLabel>
<TargetURL>https://orcsvr1.iwavesoftware.com:7801/em/redirect?pageType=TARGET_HOMEPAGE&amp;targetName=orcsvr1.iwavesoftware.com&amp;amp;targetType=host</TargetURL>
</TargetInfo>

 TargetProperty>
 <Name>Target_Host</Name>
 <Value>orcsvr1.iwavesoftware.com</Value>
 </TargetProperty>
 <TargetProperty>
 <Name>Target Version</Name>
 <Value>5.5.0.0.0</Value>
 </TargetProperty>
 <TargetProperty>
 <Name>Line of Business</Name>
 <Value>Software</Value>
 </TargetProperty>
 <TargetProperty>
 <Name>Location</Name>
 <Value>Frisco, TX</Value>
 </TargetProperty>
 <TargetProperty>
 <Name>Comment</Name>
 <Value>Testing target properties</Value>
 </TargetProperty>
</TargetInfo>

<IncidentURL>https://orcsvr1.iwavesoftware.com:7801/em/redirect?pageType=sdk-core-event-console-detailIncident&amp;issueID=B6096FBDB6FEC905E040020A780122F7</IncidentURL>

<AutoClose>true</AutoClose>
<Owner/>
<ResolutionState>new</ResolutionState>
<Acknowledge>false</Acknowledge>
<Escalated>false</Escalated>
<EscalationLevel>0</EscalationLevel>
<Priority>None</Priority>
<Summary>Memory Utilization is 81.988%, crossed warning (40) or critical (60) threshold.</Summary>
<CreationDate>2012-01-10T16:07:54.000-06:00</CreationDate>
<LastUpdatedDate>2012-01-10T16:07:54.000-06:00</LastUpdatedDate>
<Category>Capacity</Category>
<Severity>Critical</Severity>
<SeverityCode>CRITICAL</SeverityCode>
</SystemAttributes>
<HasEMEvent>true</HasEMEvent>
<EMEvent>
 <ConnectorGUID>5F8B3F54D2164AA8B4D3701656FP2524</ConnectorGUID>
 <NotificationRuleOwner>SYSMAN</NotificationRuleOwner>
 <NotificationRuleName>HPSM 7.1 Autoclose Rule</NotificationRuleName>
 <ConnectorVariable>
 <VariableName>TICKET_ID</VariableName>
 <VariableValue>IM10237</VariableValue>
<Property>
  <Name>AuthenticationType</Name>
  <Value>HTTPBasicAuthentication</Value>
</Property>

<Property>
  <Name>IsNewTargetType</Name>
  <Value>no</Value>
</Property>

<SystemAttributes>
  <EventClass>metric_alert</EventClass>
  <EventID>B609743F7D2DA971E040020A78012529</EventID>
  <SequenceID>B609743F7D2EA971E040020A78012529</SequenceID>
  <ReportedDate>2012-01-10T16:07:53.000-06:00</ReportedDate>
  <DisplayTZ>America/Chicago</DisplayTZ>
  <EventName>Load:memUsedPct</EventName>
  <Severity>Critical</Severity>
  <SeverityCode>CRITICAL</SeverityCode>
  <SourceInfo>
    <objId>D93A2E4E1622013D74D9534ECB090944</objId>
    <ObjOwner>SYSMAN</ObjOwner>
    <SourceObjType>TARGET</SourceObjType>
    <SourceObjSubType>host</SourceObjSubType>
  </SourceInfo>
  <TargetInfo>
    <TargetGUID>D93A2E4E1622013D74D9534ECB090944</TargetGUID>
    <TargetType>host</TargetType>
    <TargetTypeLabel>Host</TargetTypeLabel>
  </TargetInfo>
  <Message>Memory Utilization is 81.988%, crossed warning (40) or critical (60) threshold.</Message>
</SystemAttributes>
<nt-console-detail:Event&amp;issueID=B609743F7D2EA971E040020A78012529</EventURL>
  <AutoClose>true</AutoClose>
  <EventCategory>Capacity</EventCategory>
</SystemAttributes>
<EventClassSpecificAttributes>
  <StringAttribute>
    <Name>is_thresholdable</Name>
    <Value>1</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>coll_name</Name>
    <Value>LoadLinux</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>is_metric_extension</Name>
    <Value>0</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>metric_column_resbundle</Name>
    <Value>oracle.sysman.eml.rsc.gen.hostMsg</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>metric_description_resbundle</Name>
    <Value>oracle.sysman.eml.rsc.gen.hostMsg</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>unit_resbundle</Name>
    <Value>oracle.sysman.eml.rsc.gen.hostMsg</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>cycles_guid</Name>
    <Value>B609743F7D2AA971E040020A78012529</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>is_remote</Name>
    <Value>0</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>metric_type</Name>
    <Value>0</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>metric_guid</Name>
    <Value>86821B5F0CE858D6E4A7F7390E88B73C</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>num_keys</Name>
    <Value>0</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>key_value</Name>
    <Value></Value>
  </StringAttribute>
  <StringAttribute>
    <Name>metric_description_nlsid</Name>
  </StringAttribute>
  <StringAttribute>
    <Name>value</Name>
    <Value>81.988</Value>
  </StringAttribute>
</EventClassSpecificAttributes>
The following example shows the XML format Enterprise Manager generates for HPSM update operations.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<EMIncident xmlns="http://xmlns.oracle.com/sysman/connector">
  <ConnectorGUID>5F8B3F54D2164AA8B4D3701656FF2524</ConnectorGUID>
  <TicketID>IM10258</TicketID>
  <HDUser>iwave</HDUser>
  <NotificationRuleOwner>SYSMAN</NotificationRuleOwner>
  <NotificationRuleName>HPSM 7.1 Autoclose Rule</NotificationRuleName>
  <ReopenTicket>No</ReopenTicket>
  <StringAttribute>
    <Name>is_long_running</Name>
    <Value>0</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>metric_group</Name>
    <Value>Load</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>is_udm</Name>
    <Value>0</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>metric_description</Name>
  </StringAttribute>
  <StringAttribute>
    <Name>metric_column_nlsid</Name>
    <Value>host_load_memUsedPct</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>metric_column</Name>
    <Value>memUsedPct</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>unit_nlsid</Name>
    <Value>em__sys__standard_percent</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>unit</Name>
    <Value>%</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>metric_group_nlsid</Name>
    <Value>host_load</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>metric_group_resbundle</Name>
    <Value>oracle.sysman.eml.rsc.gen.hostMsg</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>severity_guid</Name>
    <Value>B609743F7D2AA971E040020A78012529</Value>
  </StringAttribute>
</EMIncident>
```
<ConnectorVariable>
  <VariableName>TICKET_ID</VariableName>
  <VariableValue>IM10237</VariableValue>
</ConnectorVariable>

<Property>
  <Name>AuthenticationType</Name>
  <Value>HTTPBasicAuthentication</Value>
</Property>

<Property>
  <Name>InNewTargetType</Name>
  <Value>no</Value>
</Property>

<SystemAttributes>
  <IncidentID>B6096FDB6FEC905E040020A780122F7</IncidentID>
  
  <SourceInfo>
    <SourceObjInfo>
      <ObjID>D93A2E4E1622013D74D9534ECB090944</ObjID>
      <ObjName>orcsvr1.iwavesoftware.com</ObjName>
      <ObjOwner>SYSMAN</ObjOwner>
      <SourceObjType>Targets</SourceObjType>
      <SourceObjSubType>host</SourceObjSubType>
    </SourceObjInfo>
    <TargetInfo>
      <TargetGUID>D93A2E4E1622013D74D9534ECB090944</TargetGUID>
      <TargetName>orcsvr1.iwavesoftware.com</TargetName>
      <TargetType>host</TargetType>
      <TargetTypeLabel>Host</TargetTypeLabel>
      <TargetURL>https://orcsvr1.iwavesoftware.com:7801/em/redirect?pageType=TARGET_HOMEPAGE&amp;targetName=orcsvr1.iwavesoftware.com&amp;targetType=host</TargetURL>
      <TargetProperty>
        <Name>Target_Host</Name>
        <Value>orcsvr1.iwavesoftware.com</Value>
      </TargetProperty>
      <TargetProperty>
        <Name>Target_Version</Name>
        <Value>5.5.0.0.0</Value>
      </TargetProperty>
      <TargetProperty>
        <Name>Line of Business</Name>
        <Value>Software</Value>
      </TargetProperty>
      <TargetProperty>
        <Name>Location</Name>
        <Value>Frisco, TX</Value>
      </TargetProperty>
      <TargetProperty>
        <Name>Comment</Name>
        <Value>Testing target properties</Value>
      </TargetProperty>
    </TargetInfo>
  </SourceInfo>
</SystemAttributes>

<IncidentURL>https://orcsvr1.iwavesoftware.com:7801/em/redirect?pageType=sdk-core-event-console-detailIncident&amp;issueID=B6096FDB6FEC905E040020A780122F7</IncidentURL>

<AutoClose>true</AutoClose>

<Owner/>

<ResolutionState>new</ResolutionState>

<Acknowledge>false</Acknowledge>
Memory Utilization is 81.988%, crossed warning (40) or critical (99) threshold.

Creation Date: 2012-01-10T16:07:54.000-06:00
Last Updated Date: 2012-01-10T16:09:31.000-06:00
Category: Capacity
Severity: Warning
Severity Code: WARNING

Connector GUID: 5F8B3F54D2164AA8B4D3701656FF2524
Notification Rule Owner: SYSMAN
Notification Rule Name: HPSM 7.1 Autoclose Rule
Connector Variable:
Variable Name: TICKET_ID
Variable Value: IM10237

Property:
Name: Authentication Type
Value: HTTPBasicAuthentication

Property:
Name: IsNew Target Type
Value: no

System Attributes:
Event Class: metric_alert
Event ID: B60974257B042B09E040020A7801251A
Sequence ID: B609743F7D2EA971E040020A78012529
Reported Date: 2012-01-10T16:09:30.000-06:00
Display TZ: America/Chicago
Event Name: Load: memUsedPct
Severity: Warning
Severity Code: WARNING

Source Info:
Obj ID: D93A2E4E1622011D74D9534EBC090944
Obj Name: orcsvr1.iwavesoftware.com
Obj Owner: SYSMAN
Source Obj Type: TARGET
Source Obj Sub Type: host

Target Info:
Target GUID: D93A2E4E1622011D74D9534EBC090944
Target Name: orcsvr1.iwavesoftware.com
Target Type: host
Target Type Label: Host

Target URL: https://orcsvr1.iwavesoftware.com:7801/em/redirect?pageType=TARGET_HOMEPAGE&targetName=orcsvr1.iwavesoftware.com&targetType=host
<TargetProperty>
  <Name>Line of Business</Name>
  <Value>Software</Value>
</TargetProperty>

<TargetProperty>
  <Name>Location</Name>
  <Value>Frisco, TX</Value>
</TargetProperty>

<TargetProperty>
  <Name>Comment</Name>
  <Value>Testing target properties</Value>
</TargetProperty>
<StringAttribute>
  <Name>metric_guid</Name>
  <Value>86821B5F0CE858D6E4A7F7390E88B73C</Value>
</StringAttribute>

<StringAttribute>
  <Name>num_keys</Name>
  <Value>0</Value>
</StringAttribute>

<StringAttribute>
  <Name>key_value</Name>
  <Value> </Value>
</StringAttribute>

<StringAttribute>
  <Name>metric_description_nlsid</Name>
</StringAttribute>

<StringAttribute>
  <Name>value</Name>
  <Value>81.988</Value>
</StringAttribute>

<StringAttribute>
  <Name>is_long_running</Name>
  <Value>0</Value>
</StringAttribute>

<StringAttribute>
  <Name>metric_group</Name>
  <Value>Load</Value>
</StringAttribute>

<StringAttribute>
  <Name>is_udm</Name>
  <Value>0</Value>
</StringAttribute>

<StringAttribute>
  <Name>metric_description</Name>
</StringAttribute>

<StringAttribute>
  <Name>metric_column_nlsid</Name>
  <Value>host_load_memUsedPct</Value>
</StringAttribute>

<StringAttribute>
  <Name>metric_column</Name>
  <Value>memUsedPct</Value>
</StringAttribute>

<StringAttribute>
  <Name>unit_nlsid</Name>
  <Value>em__sys__standard_percent</Value>
</StringAttribute>

<StringAttribute>
  <Name>unit</Name>
  <Value>%</Value>
</StringAttribute>

<StringAttribute>
  <Name>metric_group_nlsid</Name>
  <Value>host_load</Value>
</StringAttribute>

<StringAttribute>
  <Name>metric_group_resbundle</Name>
  <Value>oracle.sysman.eml.rsc.gen.hostMsg</Value>
</StringAttribute>

<StringAttribute>
  <Name>severity_guid</Name>
</StringAttribute>
Clear Sample
Listed below is a sample of the XML format generated by Enterprise Manager for HPSM clear operations.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<EMIncident xmlns="http://xmlns.oracle.com/sysman/connector">
  <ConnectorGUID>5F8B3F54D2164AA8B4D3701656FF2524</ConnectorGUID>
  <TicketID>IM10258</TicketID>
  <HDUser>iwave</HDUser>
  <NotificationRuleOwner>SYSMAN</NotificationRuleOwner>
  <NotificationRuleName>HPSM 7.1 Autoclose Rule</NotificationRuleName>
  <ReopenTicket>No</ReopenTicket>
  <ConnectorVariable>
    <VariableName>TICKET_ID</VariableName>
    <VariableValue>IM10237</VariableValue>
  </ConnectorVariable>
  <Property>
    <Name>AuthenticationType</Name>
    <Value>HTTPBasicAuthentication</Value>
  </Property>
  <Property>
    <Name>IsNewTargetType</Name>
    <Value>no</Value>
  </Property>
  <SystemAttributes>
    <IncidentID>B6096FBDB6FEC905E040020A780122F7</IncidentID>
    <SourceInfo>
      <SourceObjInfo>
        <ObjID>D93A2E4E1622013D74D9534ECB090944</ObjID>
        <ObjName>orcsvr1.iwavesoftware.com</ObjName>
        <ObjOwner>SYSMAN</ObjOwner>
        <SourceObjType>Targets</SourceObjType>
        <SourceObjSubType>host</SourceObjSubType>
      </SourceObjInfo>
      <TargetInfo>
        <TargetGUID>D93A2E4E1622013D74D9534ECB090944</TargetGUID>
        <TargetName>orcsvr1.iwavesoftware.com</TargetName>
        <TargetType>host</TargetType>
        <TargetTypeLabel>Host</TargetTypeLabel>
      </TargetInfo>
      <TargetURL>https://orcsvr1.iwavesoftware.com:7801/em/redirect?pageType=TARGET_HOMEPAGE&amp;targetName=orcsvr1.iwavesoftware.com&amp;targetType=host</TargetURL>
    </SourceInfo>
    <TargetProperty>
      <Name>Target_Host</Name>
      <Value>orcsvr1.iwavesoftware.com</Value>
    </TargetProperty>
    <TargetProperty>
      <Name>Target_Version</Name>
      <Value>5.5.0.0.0</Value>
    </TargetProperty>
    <TargetProperty>
      <Name>Line of Business</Name>
      <Value>Software</Value>
    </TargetProperty>
  </SystemAttributes>
</EMIncident>
```
<Name>Location</Name>
<Value>Frisco, TX</Value>
</TargetProperty>
<Name>Comment</Name>
<Value>Testing target properties</Value>
</TargetProperty>
</TargetInfo>
</SourceInfo>

<IncidentURL>https://orcsvr1.iwavesoftware.com:7801/em/redirect?pageType=sdk-core-event-console-detailIncident&amp;issueID=B6096FBDB6FEC905E040020A780122F7</IncidentURL>

<AutoClose>true</AutoClose>
<Owner/>
<ResolutionState>closed</ResolutionState>
<Acknowledge>false</Acknowledge>
<Escalated>false</Escalated>
<EscalationLevel>0</EscalationLevel>
Priority=None

<Summary>Memory Utilization is 81.791%, fallen below warning (98) and critical (99) thresholds.</Summary>

<CreationDate>2012-01-10T16:07:54.000-06:00</CreationDate>
>LastUpdatedDate>2012-01-10T16:11:01.000-06:00</LastUpdatedDate>
<Category>Capacity</Category>
<Severity>Clear</Severity>
<SeverityCode>CLEAR</SeverityCode>
</SystemAttributes>

<HasEMEvent>true</HasEMEvent>
<EMEvent>
  <ConnectorGUID>5F8B3F54D2164A8B4D3701656FF2524</ConnectorGUID>
  <NotificationRuleOwner>SYSMAN</NotificationRuleOwner>
  <NotificationRuleName>HPSM 7.1 Autoclose Rule</NotificationRuleName>
  <ConnectorVariable>
    <VariableName>TICKET_ID</VariableName>
    <VariableValue>IM10237</VariableValue>
  </ConnectorVariable>
  <SystemAttributes>
    <EventClass>metric_alert</EventClass>
    <EventID>B609743F7D2E971E040020A780122F7</EventID>
    <SequenceID>B609743F7D2E971E040020A780122F7</SequenceID>
    <ReportedDate>2012-01-10T16:11:00.000-06:00</ReportedDate>
    <DisplayTZ>America/Chicago</DisplayTZ>
    <EventName>Load:memUsedPct</EventName>
    <Severity>Clear</Severity>
    <SeverityCode>CLEAR</SeverityCode>
  </SystemAttributes>
</EMEvent>
Memory Utilization is 81.791%, fallen below warning (98) and critical (99) thresholds.


System Attributes:
- is_thresholdable: 1
- coll_name: LoadLinux
- is_metric_extension: 0
- metric_column_resbundle: oracle.sysman.eml.rsc.gen.hostMsg
- metric_description_resbundle: oracle.sysman.eml.rsc.gen.hostMsg
<StringAttribute>
  <Name>unit_resbundle</Name>
  <Value>oracle.sysman.eml.rsc.gen.hostMsg</Value>
</StringAttribute>
<StringAttribute>
  <Name>cycle_guid</Name>
  <Value>B609743F7D2AA971E040020A78012529</Value>
</StringAttribute>
<StringAttribute>
  <Name>is_remote</Name>
  <Value>0</Value>
</StringAttribute>
<StringAttribute>
  <Name>metric_type</Name>
  <Value>0</Value>
</StringAttribute>
<StringAttribute>
  <Name>metric_guid</Name>
  <Value>86821B5F0CE858D6E4A7F7390E88B73C</Value>
</StringAttribute>
<StringAttribute>
  <Name>num_keys</Name>
  <Value>0</Value>
</StringAttribute>
<StringAttribute>
  <Name>key_value</Name>
  <Value> </Value>
</StringAttribute>
<StringAttribute>
  <Name>metric_description_nlsid</Name>
</StringAttribute>
<StringAttribute>
  <Name>value</Name>
  <Value>81.791</Value>
</StringAttribute>
<StringAttribute>
  <Name>is_long_running</Name>
  <Value>0</Value>
</StringAttribute>
<StringAttribute>
  <Name>metric_group</Name>
  <Value>Load</Value>
</StringAttribute>
<StringAttribute>
  <Name>is_udm</Name>
  <Value>0</Value>
</StringAttribute>
<StringAttribute>
  <Name>metric_description</Name>
</StringAttribute>
<StringAttribute>
  <Name>metric_column_nlsid</Name>
</StringAttribute>
<StringAttribute>
  <Name>metric_column</Name>
  <Value>memUsedPct</Value>
</StringAttribute>
<StringAttribute>
  <Name>unit_nlsid</Name>
</StringAttribute>
E.3 Clear Example

The following example shows the XML format Enterprise Manager generates for HPSM clear operations.

```xml
<EMIncident xmlns="http://xmlns.oracle.com/sysman/connector">
  <ConnectorGUID>5F883BF54D2164AA8B4D701656FF2524</ConnectorGUID>
  <TicketID>IM10258</TicketID>
  <HDUser>iwave</HDUser>
  <NotificationRuleOwner>SYSMAN</NotificationRuleOwner>
  <NotificationRuleName>HPSM 7.1 Autoclose Rule</NotificationRuleName>
  <ReopenTicket>No</ReopenTicket>
  <ConnectorVariable>
    <VariableName>TICKET_ID</VariableName>
    <VariableValue>IM10237</VariableValue>
  </ConnectorVariable>
  <Property>
    <Name>AuthenticationType</Name>
    <Value>HTTPBasicAuthentication</Value>
  </Property>
  <Property>
    <Name>IsNewTargetType</Name>
    <Value>no</Value>
  </Property>
  <SystemAttributes>
    <IncidentID>B609742578012B09E040020A7801251A</IncidentID>
    <SourceInfo>
      <SourceObjInfo>
        <ObjID>D93A2E4E1622013D74D9534ECB090944</ObjID>
        <ObjName>orcsvr1.iwavesoftware.com</ObjName>
        <ObjOwner>SYSMAN</ObjOwner>
        <SourceObjType>Targets</SourceObjType>
        <SourceObjSubType>host</SourceObjSubType>
      </SourceObjInfo>
      <TargetInfo>
        <TargetGUID>D93A2E4E1622013D74D9534ECB090944</TargetGUID>
        <TargetName>orcsvr1.iwavesoftware.com</TargetName>
      </TargetInfo>
    </SourceInfo>
  </SystemAttributes>
</EMIncident>
```
<TargetType>host</TargetType>
<TargetTypeLabel>Host</TargetTypeLabel>

<TargetURL>https://orcsvr1.iwavesoftware.com:7801/em/redirect?pageType=TARGET_HOMEPAGE&amp;targetName=orcsvr1.iwavesoftware.com&amp;targetType=host</TargetURL>
<TargetProperty>
<Name>Target_Host</Name>
<Value>orcsvr1.iwavesoftware.com</Value>
</TargetProperty>
<TargetProperty>
<Name>Target Version</Name>
<Value>5.5.0.0.0</Value>
</TargetProperty>
<TargetProperty>
<Name>Line of Business</Name>
<Value>Software</Value>
</TargetProperty>
<TargetProperty>
<Name>Location</Name>
<Value>Frisco, TX</Value>
</TargetProperty>
<TargetProperty>
<Name>Comment</Name>
<Value>Testing target properties</Value>
</TargetProperty>
</TargetInfo>
</SourceInfo>

<IncidentURL>https://orcsvr1.iwavesoftware.com:7801/em/redirect?pageType=sdk-core-event-console-detailIncident&amp;issueID=B6096FBDB6FEC905E040020A780122F7</IncidentURL>
<AutoClose>true</AutoClose>
<ResolutionState>closed</ResolutionState>
<Acknowledge>false</Acknowledge>
<Escalated>false</Escalated>
<EscalationLevel>0</EscalationLevel>
<Priority>None</Priority>
<Summary>Memory Utilization is 81.791%, fallen below warning (98) and critical (99) thresholds.</Summary>
<CreationDate>2012-01-10T16:07:54.000-06:00</CreationDate>
>LastUpdatedDate>2012-01-10T16:11:01.000-06:00</LastUpdatedDate>
<Category>Capacity</Category>
<Severity>Clear</Severity>
<SeverityCode>CLEAR</SeverityCode>
</SystemAttributes>
<HasEMEvent>true</HasEMEvent>
<EMEvent>
<ConnectorGUID>5F8B3F54D2164AA8B4D3701656FF2524</ConnectorGUID>
<NotificationRuleOwner>SYSMAN</NotificationRuleOwner>
<NotificationRuleName>HPSM 7.1 Autoclose Rule</NotificationRuleName>
<ConnectorVariable>
<VariableName>TICKET_ID</VariableName>
<VariableValue>IM10237</VariableValue>
</ConnectorVariable>
<Property>
<Name>AuthenticationType</Name>
<Value>HTTPBasicAuthentication</Value>
</Property>
<Property>
<Name>IsNewTargetType</Name>
  <Value>no</Value>
</Property>
<SystemAttributes>
  <EventClass>metric_alert</EventClass>
  <EventID>B609743F7D12A971E040020A78012529</EventID>
  <SequenceID>B609743F7D2EA971E040020A78012529</SequenceID>
  <ReportedDate>2012-01-10T16:11:00.000-06:00</ReportedDate>
  <DisplayTZ>America/Chicago</DisplayTZ>
  <EventName>Load:memUsedPct</EventName>
  <Severity>Clear</Severity>
  <SeverityCode>CLEAR</SeverityCode>
  <SourceInfo>
    <SourceObjInfo>
      <ObjID>D93A2E4E1622013D74D9534ECB090944</ObjID>
      <ObjName>orcsvr1.iwavesoftware.com</ObjName>
      <ObjOwner>SYSMAN</ObjOwner>
      <SourceObjType>TARGET</SourceObjType>
      <SourceObjSubType>host</SourceObjSubType>
    </SourceObjInfo>
    <TargetInfo>
      <TargetGUID>D93A2E4E1622013D74D9534ECB090944</TargetGUID>
      <TargetName>orcsvr1.iwavesoftware.com</TargetName>
      <TargetType>host</TargetType>
      <TargetTypeLabel>Host</TargetTypeLabel>
      <TargetURL>https://orcsvr1.iwavesoftware.com:7801/em/redirect?pageType=TARGET_HOMEPAGE&amp;targetName=orcsvr1.iwavesoftware.com&amp;targetType=host</TargetURL>
      <TargetProperty>
        <Name>Target_Host</Name>
        <Value>orcsvr1.iwavesoftware.com</Value>
      </TargetProperty>
      <TargetProperty>
        <Name>Target_Version</Name>
        <Value>5.5.0.0</Value>
      </TargetProperty>
      <TargetProperty>
        <Name>Line of Business</Name>
        <Value>Software</Value>
      </TargetProperty>
      <TargetProperty>
        <Name>Location</Name>
        <Value>Frisco, TX</Value>
      </TargetProperty>
      <TargetProperty>
        <Name>Comment</Name>
        <Value>Testing target properties</Value>
      </TargetProperty>
    </TargetInfo>
    <TargetURL>https://orcsvr1.iwavesoftware.com:7801/em/redirect?pageType=sdk-core-event-console-detailEvent&amp;issueID=B609743F7D2EA971E040020A78012529</TargetURL>
  </SourceInfo>
  <Message>Memory Utilization is 81.791%, fallen below warning (98) and critical (99) thresholds.</Message>
</SystemAttributes>
<Name>is_thresholdable</Name>
<Value>1</Value>
</StringAttribute>
<StringAttribute>
<Name>coll_name</Name>
<Value>LoadLinux</Value>
</StringAttribute>
<StringAttribute>
<Name>is_metric_extension</Name>
<Value>0</Value>
</StringAttribute>
<StringAttribute>
<Name>metric_column_resbundle</Name>
<Value>oracle.sysman.eml.rsc.gen.hostMsg</Value>
</StringAttribute>
<StringAttribute>
<Name>metric_description_resbundle</Name>
<Value>oracle.sysman.eml.rsc.gen.hostMsg</Value>
</StringAttribute>
<StringAttribute>
<Name>unit_resbundle</Name>
<Value>oracle.sysman.eml.rsc.gen.hostMsg</Value>
</StringAttribute>
<StringAttribute>
<Name>cycle_guid</Name>
<Value>B609743F7D2AA971E040020A78012529</Value>
</StringAttribute>
<StringAttribute>
<Name>is_remote</Name>
<Value>0</Value>
</StringAttribute>
<StringAttribute>
<Name>metric_type</Name>
<Value>0</Value>
</StringAttribute>
<StringAttribute>
<Name>metric_guid</Name>
<Value>86821B5F0CE858D6E4A7F7390B88B73C</Value>
</StringAttribute>
<StringAttribute>
<Name>num_keys</Name>
<Value>0</Value>
</StringAttribute>
<StringAttribute>
<Name>key_value</Name>
<Value> </Value>
</StringAttribute>
<StringAttribute>
<Name>metric_description_nlsid</Name>
</StringAttribute>
<StringAttribute>
<Name>value</Name>
<Value>81.791</Value>
</StringAttribute>
<StringAttribute>
<Name>is_long_running</Name>
<Value>0</Value>
</StringAttribute>
<StringAttribute>
<Name>metric_group</Name>
</StringAttribute>
E.4 Reopen Example

The following example shows the XML format Enterprise Manager generates for HPSM reopen operations.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<EMIncident xmlns="http://xmlns.oracle.com/sysman/connector">
  <ConnectorGUID>5F8B3F54D2164AA8B4D3701656FF2524</ConnectorGUID>
  <TicketID>IM10257</TicketID>
  <HDUser>iwave</HDUser>
  <NotificationRuleOwner>SYSMAN</NotificationRuleOwner>
  <NotificationRuleName>HPSM 7.1 Autoclose Rule</NotificationRuleName>
  <ReopenTicket>Yes</ReopenTicket>
  <ConnectorVariable>
    <VariableName>TICKET_ID</VariableName>
    <VariableValue>IM10237</VariableValue>
  </ConnectorVariable>
  <Property>
    <Name>AuthenticationType</Name>
    <Value>Load</Value>
  </Property>
  <Property>
    <Name>is_udm</Name>
    <Value>0</Value>
  </Property>
  <Property>
    <Name>metric_description</Name>
    <Value>host_load_memUsedPct</Value>
  </Property>
  <Property>
    <Name>metric_column_nlsid</Name>
    <Value>host_load_memUsedPct</Value>
  </Property>
  <Property>
    <Name>metric_column_nlsid</Name>
    <Value>memUsedPct</Value>
  </Property>
  <Property>
    <Name>unit_nlsid</Name>
    <Value>em__sys__standard_percent</Value>
  </Property>
  <Property>
    <Name>unit</Name>
    <Value>%</Value>
  </Property>
  <Property>
    <Name>metric_group_nlsid</Name>
    <Value>host_load</Value>
  </Property>
  <Property>
    <Name>metric_group_resbundle</Name>
    <Value>oracle.sysman.eml.rsc.gen.hostMsg</Value>
  </Property>
  <Property>
    <Name>severity_guid</Name>
    <Value>B609743F7D30A971E040020A78012529</Value>
  </Property>
</EMIncident>
```
Reopen Example

<IncidentID>B6096FBDB700C905E040020A780122F7</IncidentID>

<SourceInfo>
  <SourceObjInfo>
    <ObjID>D93A2E4E1622013D74D9534ECB090944</ObjID>
    <ObjName>orcsvr1.iwavesoftware.com</ObjName>
    <ObjOwner>SYSMAN</ObjOwner>
    <SourceObjType>Targets</SourceObjType>
    <SourceObjSubType>host</SourceObjSubType>
  </SourceObjInfo>
</SourceInfo>

<IncidentURL>https://orcsvr1.iwavesoftware.com:7801/em/redirect?pageType=TARGET_HOMEPAGE&amp;targetName=orcsvr1.iwavesoftware.com&amp;targetType=host</IncidentURL>

<AutoClose>true</AutoClose>

<ResolutionState>New</ResolutionState>

<Owner/>

<Priority>None</Priority>

<Summary>Memory Utilization is 81.65%, crossed warning (44) or critical (66) threshold.</Summary>

<CreationDate>2012-01-10T16:13:04.000-06:00</CreationDate>
Memory Utilization is 81.65%, crossed warning (44) or critical (66) threshold.

EventURL: https://orcsvr1.iwavesoftware.com:7801/em/redirect?pageType=dk-core-event-console-detailEvent&amp;issueID=B609743F16C30220E040020A78012524

AutoClose: true

EventCategory: Capacity
<EventClassSpecificAttributes>
  <StringAttribute>
    <Name>key_value</Name>
    <Value> </Value>
  </StringAttribute>
  <StringAttribute>
    <Name>metric_description_nlsid</Name>
  </StringAttribute>
  <StringAttribute>
    <Name>value</Name>
    <Value>81.65</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>is_long_running</Name>
    <Value>0</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>metric_group</Name>
    <Value>Load</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>is_udm</Name>
    <Value>0</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>metric_description</Name>
  </StringAttribute>
  <StringAttribute>
    <Name>metric_column_nlsid</Name>
    <Value>host_load_memUsedPct</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>metric_column</Name>
    <Value>memUsedPct</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>unit_nlsid</Name>
    <Value>em__sys__standard_percent</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>unit</Name>
    <Value>%</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>metric_group_nlsid</Name>
    <Value>host_load</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>metric_group_resbundle</Name>
    <Value>oracle.sysman.eml.rsc.gen.hostMsg</Value>
  </StringAttribute>
  <StringAttribute>
    <Name>severity_guid</Name>
    <Value>B609743F16BF0220E040020A78012524</Value>
  </StringAttribute>
</EventClassSpecificAttributes>
Index

A
Auto Ticketing
   HP Service Manager Connector, 1-1

G
grace period
   HP Service Manager Connector, 1-2

H
HP Service Manager
   Auto Ticketing, 1-1
   HP Service Manager Connector
      grace period, 2-1
      installing, 2-2
      manual ticketing, 1-2
      out-of-box templates, 5-1
      overview, 1-1
      prerequisites, 1-3
      ticket templates, 1-2
      uninstalling, 2-3
HP Service Manager HelpDesk
   6.1, 1-3
      web services, 1-3

I
install
   offline mode, 2-2
installing
   HP Service Manager Connector, 2-1

M
manual ticketing
   HP Service Manager Connector, 1-2

O
offline mode, 2-2

P
prerequisites
   HP Service Manager Connector, 1-3

T
ticket templates
   HP Service Manager Connector, 1-2
   transformation style sheets
      HP Service Manager Connector, 1-2

U
uninstalling the HP Service Manager Connector, 2-3