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Configuration Guide for BMC Remedy Service Desk 7 Connector

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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

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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 Framework, Host, and Services Metric Reference Manual*
- *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

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Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Introduction to the Connector

The Oracle Management Connector for BMC Remedy Service Desk 7 integrates BMC Remedy Service Desk v7 with Enterprise Manager through either an HTTP or HTTPS connection. Using this connector, you can create, update, close, or reopen a ticket for any incident created in Enterprise Manager.

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 Manger, the ticket ID, ticket status, and link to the BMC Remedy console is the 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.

> **Note:** Before proceeding, see the "Incident Management" chapter in the *Oracle Enterprise Manager Administrator's Guide* to understand the event and incident management concepts.

The following sections explain various Remedy Service Desk Connector concepts that you must understand before you start using the Remedy Service Desk Connector.

- Versions Supported
- Ticket Generation Contents
- Auto Ticketing
- Manual Ticketing
- Ticket Templates
- Grace Period
- Retry
- Ticket Status Changes
- Recommended Protocol

1.1 Versions Supported

The Remedy Service Desk Connector communicates via webservices with the IT Service Management component of Remedy Service Desk. The following versions are supported:

- Remedy Service Desk 7.0.03 patch 008 with:

  - IT Service Management 7.0.03 with the Incident Management patch “IT Service Management Patch 008”
  - Action Request Server 7.1 (AR Server 7.1) Patch 002
- Remedy Service Desk, which is part of IT Service Management Suite 7.5.00 with Incident Management. This also includes Action Request Server 7.5 (AR Server 7.5).

1.2 Ticket Generation Contents

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 help desk analysts leverage Enterprise Manager's diagnostic and resolution features to resolve the incident.

In Enterprise Manger, the ticket ID, ticket status, and link to the Remedy Service Desk 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.

1.3 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 Remedy to close the ticket.

> **See Also:** Section 3.1, "Automatically Creating a Ticket"

1.4 Manual Ticketing

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

> **See Also:** Section 3.2, "Manually Creating a Ticket"

1.5 Ticket Templates

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

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 Remedy Help Desk System. For manual ticketing, you have to select a connector instance and ticket template before submitting a request for ticket creation.

The Remedy Service Desk Connector includes some out-of-box default ticket templates. You can customize default templates according to your functional needs. Oracle recommends that you back up these factory-built templates before customizing them.

See Also: Chapter 4, "Using Default Templates"

1.6 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 example, an event is raised and causes an incident to be created in Enterprise Manager. The rule defined to create the ticket enforces the ticket to be created on the Remedy Help Desk system. If the grace period is one hour and the event is cleared at 10:00 a.m., this clears the incident and ticket. If the same event reoccurs before 11:00 a.m. and enforces creation of another incident, the grace period functionality stops creation of a new ticket for this, and reopens the same ticket instead.

Note: In Remedy, 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 Remedy Service Desk Connector to reopen the ticket if the same incident reoccurs within the grace period.

1.7 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.

1.8 Ticket Status Changes

Any changes to the ticket status on Remedy Help Desk can be propagated back to Enterprise Manager through an EM CLI call. The ticket status update operation requires configuration changes in Remedy Help Desk.

For more information, see Chapter 6, "Advanced Ticketing Configuration."

1.9 Recommended Protocol

Oracle recommends that you use HTTPS as the protocol for the communication between Enterprise Manager and Remedy AR server.

Use HTTP only if a secure connection is not required and the data can be transferred in clear text between the two systems.

2

Creating and Configuring the Connector

This chapter provides the following information for setting up and configuring the Remedy Service Desk Connector and related tasks:

- Prerequisites
- Creating a Connector Instance
- Configuring the Connector
- Enabling or Disabling the Connector
- Providing General Settings
- Working with Ticket Templates
- Deleting the Connector

2.1 Prerequisites

The Remedy Service Desk Connector communicates through webservices with the IT Service Management component of Remedy Service Desk. Before using Remedy Service Desk Connector, ensure that you meet the following prerequisites:

- One of the following:
  - Remedy Service Desk 7.0.03 patch 008 with:
    - IT Service Management 7.0.03 with the Incident Management patch "IT Service Management Patch 008" is installed and configured.
    - Action Request Server 7.1 (AR Server 7.1) Patch 002.
  - Remedy Service Desk, which is part of IT Service Management Suite 7.5.00 with Incident Management, is installed and configured. This also includes Action Request Server 7.5 (AR Server 7.5).
- Remedy Service Desk web services are up and running.
- Remedy User exists with all necessary permissions and personnel information.

2.1.1 Installing the Definition Files

The Remedy Action Request Server (ARS) customizations for Enterprise Manager 12*c* definition files can be extracted from the following .jar file:

`<$OMS_HOME>/sysman/connector/remedy7connector.jar`

`OMS_HOME` is the file system location where the OMS is deployed.

These customization files assume a fresh installation of Remedy ARS. When integrating with a production instance of Remedy, exercise care that these customizations are compatible with any previous customizations that have been made to the Remedy instance.

The definition files to import are:

- `HPD_IncidentInterface_CustomWS.def`
- `HelpDesk_Query_Service_getIncident.def`

Install both definition files (`.def`) files in the running Remedy environment by completing the steps in the following sections for AR Server 7.1 and AR Server 7.5:

- Import Steps for AR Server 7.1
- Import Steps for AR Server 7.5

2.1.1.1 Import Steps for AR Server 7.1

1. Log in to the Remedy Administrator tool.
2. Select the Remedy instance from the hierarchy on the left.
3. Click the **Tools** menu, select **Import Definitions**, then **From Definition File...**
4. Select the definition file to import from the list above.
5. Check the box labeled **Replace Objects on the Destination Server**.
6. Choose the drop-down option **Replace With New Type**.
7. Click **Import**.

   You should not encounter any errors during this process. At the end of the import, an Import Complete message should appear.
8. When done, repeat the procedure for the rest of the customization files.

2.1.1.2 Import Steps for AR Server 7.5

> **Note:** Back up the `HPD_IncidentInterface_WS` Web Service before importing `HPD_IncidentInterface_CustomWS.def`.

1. Log in to the BMC Remedy Developer Studio, then open a workspace.
2. Select the Remedy instance from the left pane.
3. From the File menu, select **Import**.
4. Select **Object Definition** in the Import window, then click **Next**.
5. Select the **AR System Server Instance**, then click **Next**.
6. Click **Browse** and select the definition file (for example, `HPD_IncidentInterface_CustomWS.def`), then click **Next**.
7. Click **Finish** in the Import Objects window.

   You should not encounter any errors during this process. At the end of the import, an Import Complete message should appear.

2.1.1.3 Displaying the New Objects

After importing, the new objects are shown under the Remedy instance. You can access them as follows:

1. Select the **Remedy Instance** from the left pane of the Developer studio.
2. Select **All Objects**, then **Web Services**.

   You should be able to see a new Web service called **HPD_IncidentInterface_get_WS**.
3. Select **All Objects**, then **Web Services**, then **HPD_IncidentInterface_WS**.
4. Click **WSDL Ports**, then **Ports**, then **WSDL Operations**.

   You should see 'HelpDesk_Modify_status_service' and 'HelpDesk_Modify_ Service' under WSDL Operations.

`HelpDesk_Modify_status_service` and `HelpDesk_Modify_Service` WSDL Operations should appear under `HPD_IncidentInterface_WS`.

2.1.2 Forms Customization

Customizing the `HPD:IncidentInterface_Create`, `HPD:IncidentInterface`, and `HPD:HelpDesk` forms are needed to add the `ConnectorGUID` field on these forms. The purpose of this field is to track a ticket/incident created by Oracle Enterprise Manager 12*c*.

2.1.2.1 Forms Customization for AR Server 7.1

1. Log in to the Remedy Administrator tool.
2. Select **Forms**.
3. Open the `HPD:HelpDesk` form.
4. Create a Character field and place the field as required.

   Note: In the `HPD:HelpDesk` form, you can place the new field next to Create Request radio button.

5. Open the Field Properties dialog box for the character field that you create.
6. Click the **Display** tab. Enter **ConnectorGUID** on the Label Field.
7. Click the **Database** Tab. In the ID field enter **500000021**. In Name Field, enter **ConnectorGUID**.
8. Click the **Permissions** tab and then assign Public Permission.

   Note: You can also enable the **Allow Any User to Submit** check box.

9. Close the Field Properties page.
10. Save the form.

Repeat steps 3 to 10 for the `HPD:IncidentInterface_Create` and `HPD:IncidentInterface` forms in order to add the `ConnectorGUID` field for all forms.

Update the `HPD:HII:CreateIncident_100'!` filter as follows so that it pushes values from the `HPD:IncidentInerface_Create` form to the `HPD:HelpDesk` form:

1. Log in to the BMC Remedy Administrator.
2. Click **Filters**.
3. Open the `HPD:HII:CreateIncident_100`!` filter.
4. Click the **If-Action(1)** tab.
5. In the Fields region:
   - From the Name menu, select **ConnectorGUID**.
   - From the Value menu, select **ConnectorGUID**.
6. Save the filter and close.

2.1.2.2 Forms Customization for AR Server 7.5

1. Log in to the BMC Remedy Developer Studio, then open a workspace.
2. Select the Remedy instance from the pane that appears in the left side of the window.
3. Select **All Objects**, then **Forms**.
4. Open the **HPD:HelpDesk** form.
5. Right-click and create a **New Character** field.
6. In the Field Properties window under Display property, provide **ConnectorGUID** as the Label.
7. Click the **Permissions** tab, then assign **Public Permission**.

> **Note:** You can also enable the Allow Any User to Submit check box.

8. Save the form.

Repeat steps 4 through 8 for `HPD:IncidentInterface_Create` to add the `ConnectorGUID` field.

Add a new field in the HPD:IncidentInterface form as follows:

1. Open the **HPD:IncidentInterface** form.
2. Do not create a new field. Instead, right-click on the form.
3. Select **Add Fields from HPD:HelpDesk**.
4. Select **ConnectorGUID** from the list.
5. Save the form.

Update the HPD:HII:CreateIncident_100'! filter as follows so that it pushes values from the HPD:IncidentInerface_Create form to the HPD:HelpDesk form:

1. Log in to the BMC Remedy Developer Studio, then open a workspace.
2. Select the Remedy instance from the left pane.
3. Select **All Objects**, then **Filters**.
4. Click the **If-Action(1)** tab.
5. In the Fields region:
   a. From the Name menu, select **ConnectorGUID**.

b. From the Value menu, select **ConnectorGUID**.

6. Save the filter and close.

2.1.3 Web Services Customization

The following sections explain how to include the `ConnectorGUID` field in the Web services. This section assumes that the `*.def` files are imported/installed as mentioned in previous sections.

2.1.3.1 Web Services Customization For AR Server 7.1

1. Log in to the Remedy Administrator tool.
2. Select **Webservices**, then select **HPD_IncidentInterface_Create_WS**. Right-click and select **Open**.
3. Select **Input Mapping**.
4. Add a new element (right-click on the **ROOT** element). A new element will be added at the end.
5. Rename the element as **ConnectorGUID**.
6. Map `ConnectorGUID` with `ConnectorGUID` from the left window.
7. Click **OK** to save.
8. Select the **WSDL** tab and perform the following steps:
   a. In the input on top, modify the `midtier_server` and `servername` values in the WSDL Handler URL.
   b. If mid-tier is on localhost, you can enter localhost right after `http://`.
   c. If the mid-tier uses port 80, you can omit the port. Otherwise, include the port number after the server name.
   d. For the server name after `public/`, enter the name of the Remedy server.
   e. Click the **View** button.
   f. If you see the XML content after clicking **View**, then close this window and save the changes.

   Note: You should see XML representing the web service WSDL file for the web service.

   If you see an error, check the midtier_server name, port, or servername. Also, you can try adding/removing the domain part of the servername.

9. Open the **HPD_IncidentInterface_WS** web service.
10. Select **HelpDesk_Modify_Service** from Operations List.
11. Select the **Input Mapping...** item. (XML Data Type windows are mapped with `HPD:IncidentInterface`.)
12. Map `Incident_Number` (on the right window) to "Incident Number" (On left window). Select both XML elements and click **Map**.
13. Add a new element (right-click on the **ROOT** element). A new element will be added at the end.

14. Rename the element as **ConnectorGUID**.
15. Map `ConnectorGUID` with `ConnectorGUID` from the left window.
16. Click **OK** to save.
17. Select **HelpDesk_Modify_Status_service** from Operations List. Repeat steps 11 through 16.
18. Select the **WSDL** tab and perform the following steps:
    a. In the input on top, modify the `midtier_server` and `servername` values in the WSDL Handler URL.
    b. If mid-tier is on localhost, you can enter localhost right after `http://`.
    c. If the mid-tier uses port 80, you can omit the port. Otherwise, include the port number after the server name.
    d. For the server name after `public/`, enter the name of the Remedy server.
    e. Click the **View** button.
    f. If you see the XML content after clicking **View**, close this window and save the changes.

Note: You should see XML representing the web service WSDL file for the web service.

If you see an error, check the midtier_server name, port, or servername. Also, you can try adding/removing the domain part of the servername.

2.1.3.2 Web Services Customization For AR Server 7.5

1. Log in to the BMC Remedy Developer Studio, then open a workspace.
2. Select the Remedy instance from the left pane.
3. Select **All Objects**, then **Web Services**, then **HPD_IncidentInterface_Create_WS**.
4. Select **WSDL Ports**, then **Port**, then **WSDL Operations**, then **Create Operation**.
5. In the Input Mapping section, select and right-click **ROOT** under the XML Data Type column.
6. From the New menu, select **Element**, then **Field**.

   A New Field Element is added as the last element, which appears under the XML Data Type column.
7. Click the element and rename it as **ConnectorGUID**.
8. Click on the **Form/Field** column.

   The Field Selector window appears.
9. Select **ConnectorGUID** from the list of available fields.
10. Click **OK** to save.
11. Click the **WSDL Publishing Location** tab and perform the following steps:
    a. In the input area at the top of the window, modify the `midtier_server` and `servername` values in the WSDL Handler URL.
    b. If mid-tier is on `localhost`, you can enter `localhost` directly after `http://`.

c. If the mid-tier uses port 80, you can omit the port. Otherwise, include the port number after the server name.

d. For the server name after `public/`, enter the name of the Remedy server.

e. Click **View**.

f. If you see the XML content after clicking View, close this window and save the changes.

You should now see XML representing the web service WSDL file for the Web service. If you see any error or no XML content, check the `midtier_server` name, port, or server name. You can also try adding/removing the domain portion of the server name.

Adding ConnectorGUID on the HPD_IncidentInterface_WS Web Service

1. Open the **HPD_IncidentInterface_WS** Web service.
2. Select **HelpDesk_Modify_Service** from the WSDL Operations list.
3. In the Input Mapping section, select the **Incident_Number** field under ROOT.
4. Click on the **Form/Field** column.

   The Field Selector window appears.
5. Select **Incident_Number** from the list of available fields.
6. Click **OK** to save.
7. In the Input Mapping section, select and right-click **ROOT** under the XML Data Type column. A new element is added at the end.
8. From the New menu, select **Element**, then **Field**.

   A New Field Element is added as the last element, which appears under the XML Data Type column.
9. Click the element and rename it as **ConnectorGUID**.
10. Click on the **Form/Field** column.

    The Field Selector window appears.
11. Select **ConnectorGUID** from the list of available fields.
12. Click **OK** to save.
13. Select **HelpDesk_Modify_Status_Service** from WSDL Operations.
14. Repeat steps 3 through 12 to map the Incident_Number and ConnectorGUID fields on HelpDesk_Modify_Status_Service.
15. Click the **WSDL Publishing Location** tab and perform the following steps:

    a. In the input area at the top of the window, modify the `midtier_server` and `servername` values in the WSDL Handler URL.

    b. If mid-tier is on `localhost`, you can enter `localhost` directly after `http://`.

    c. If the mid-tier uses port 80, you can omit the port. Otherwise, include the port number after the server name.

    d. For the server name after `public/`, enter the name of the Remedy server.

    e. Click **View**.

f. If you see the XML content after clicking View, close this window and save the changes.

2.2 Creating a Connector Instance

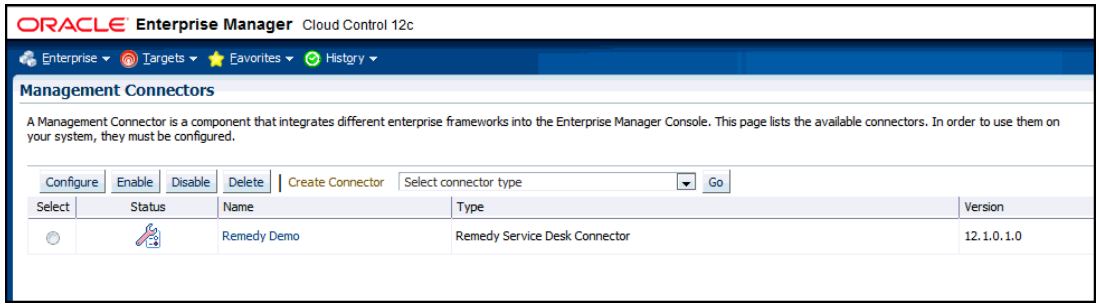
The Remedy Service Desk Connector 12.1.0.2 connector type is deployed out-of-box with Enterprise Manager. To use this connector, you need to create one or more instances of this connector type. A connector instance refers to the configured instance of the connector with specific details, such as connector name, web-service end-points, username/password, and so forth of the Remedy Help Desk system. Multiple connector instances for the same connector type are supported, which provides the flexibility to configure multiple Remedy Help Desk systems with Enterprise Manager.

For example, you could have a production database and test database that Enterprise Manager monitors, and you can create two different connector instances and configure these with two different help desk systems to create tickets.

To create a connector instance:

1. From the Enterprise Manager console, click **Setup**.
2. Select **Extensibility** in the pane.
3. Select **Management Connectors** in the left pane.
4. Select a connector type from the Create Connector drop-down list and click the **Go** button.
5. Enter the connector name and description on the next screen and click the **OK** button.
6. The connector instance appears as unconfigured on the Management Connectors page, shown in Figure 2–1.

Figure 2–1 Management Connectors Page



2.3 Configuring the Connector

Perform the following steps for basic configuration:

1. As Super Administrator, from the Enterprise Manager console, click **Setup.**
2. Click **Extensibility**, then **Management Connectors**.

   The Management Connectors page appears that list all created connector instances.

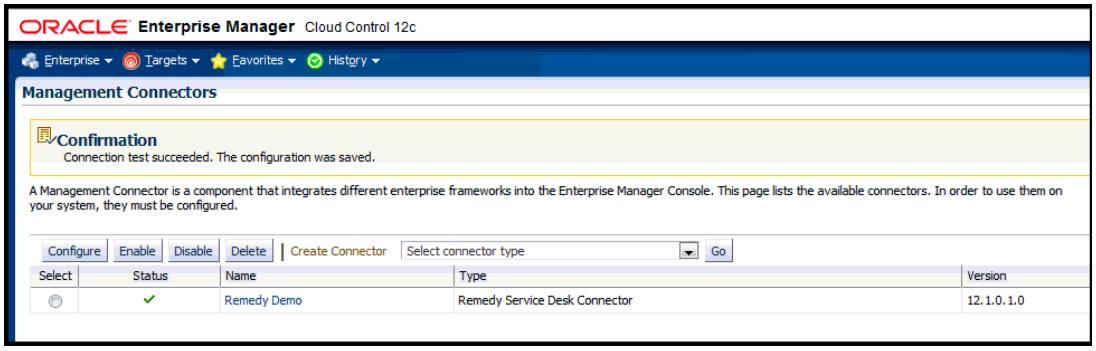
Note: The status column with a green tick mark indicates that the connector is already configured.

3. Click the **Configure** button for the Remedy Service Desk Connector. The General tab of the Configure Management Connector page appears.
4. Provide the required settings. See "Providing General Settings" for details.
5. Click **OK.**

   The Management Connectors page reappears. The row for the Remedy Service Desk Connector should have a check mark in the Status column, as shown in Figure 2–2.
6. **Optional:** Register any customized templates using the emctl command from the `ORACLE_HOME/bin` directory, where `ORACLE_HOME` is the Oracle home directory of OMS.

   You can view all ticket templates by clicking the Ticket Templates tab.
7. If you choose HTTPS as the protocol to establish a connection between Remedy and Enterprise Manager, see Chapter 5, "Enabling SSL for HTTPS".

Figure 2–2 Configuration Confirmation



2.4 Enabling or Disabling the Connector

You can enable or disable a connector instance without needing to reconfigure or remove the connector from the system.

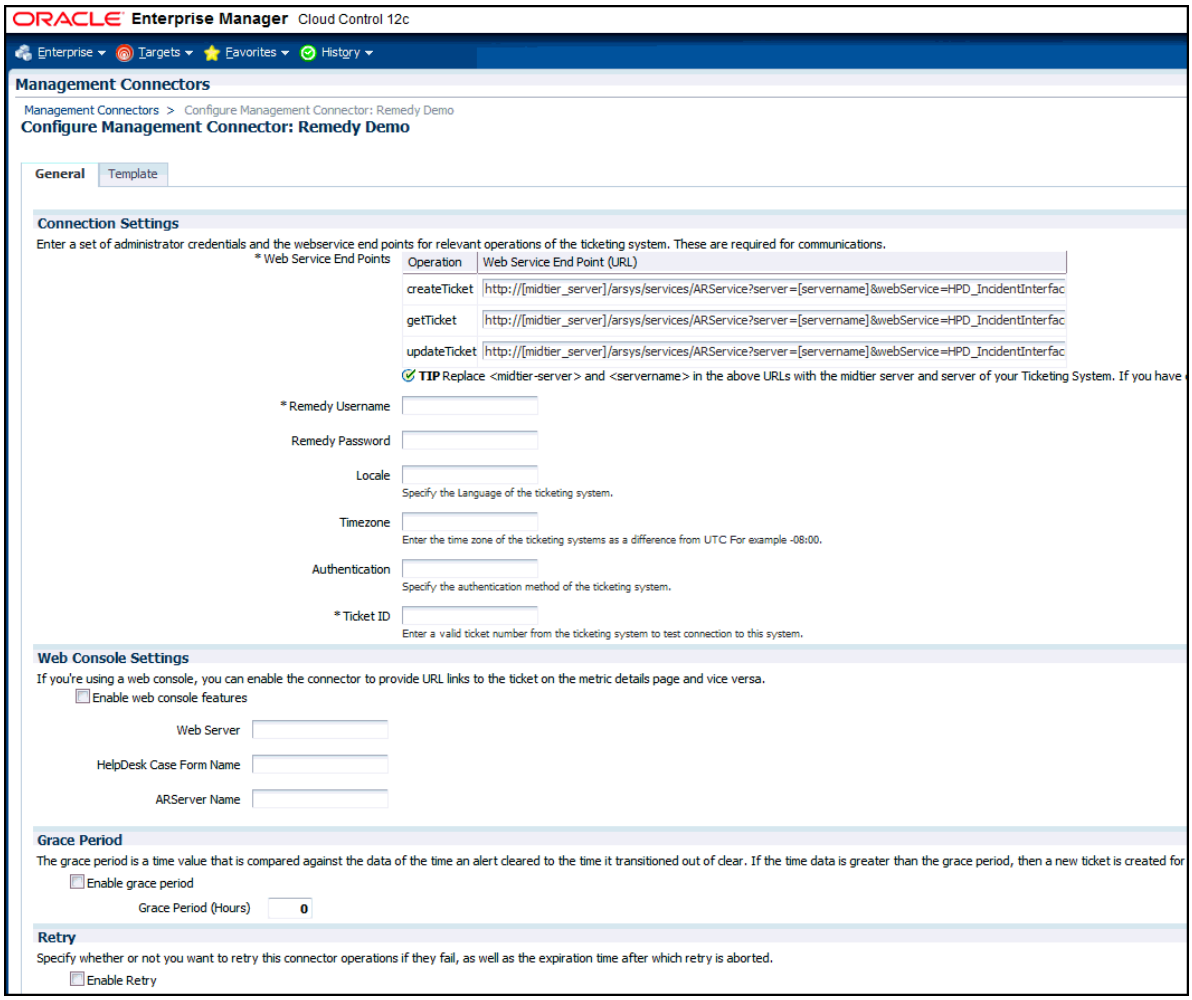
You can enable or disable a connector from the Management Connector page by selecting the connector and clicking either the **Enable** or **Disable** button. After a connector is disabled, you will see a red cross icon under the Status column. By default, the connector instance is enabled as soon as it is configured.

Note: Only enabled connectors are available for ticketing operations.

2.5 Providing General Settings

The following sections explain how to provide various configuration details for the General tab of the Configure Management Connector page, shown in Figure 2–3.

Figure 2–3 Configure Management Connector Page



2.5.1 Connection Settings

The Remedy Service Desk Connector communicates with the Service Desk through their Web services. Mandatory fields are indicated with an asterisk (*).

- **Web Service End Points** — End points to `createTicket`, `updateTicket`, and `getTicket` web services exposed by Remedy Service Desk.
- **Remedy Username** — User with the privilege to create, update, and query tickets in Remedy.
- **Remedy Password** (optional) — Password associated with the supplied Remedy user.
- **Authentication** (optional) — String that a Remedy administrator sets for additional security. Applies only if the Remedy Administrator has configured it on the Remedy AR server.
- **Locale** (optional) — Language of the Remedy system.
- **Time Zone** (optional) — Time zone of the Remedy AR System Server.
- **Ticket Number** (required) — Enter a valid ticket number to test 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 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 the mandatory field is missing, you will see the following message:

  "Missing mandatory field(s) - <*actual field name*>."

  For example, if web service points are missing, you will see the following message:

  "Missing mandatory field(s) - Web Service End Points"

2.5.2 Web Console Settings

Web Console settings are required if you want the connector to provide links to Remedy Service Desk tickets created by Enterprise Manager in the context of an incident.

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

- **Enable web console** — Check this box to enable launching of the Remedy ticket page within context from Enterprise Manager.
- **ARServer Name** — Remedy AR Server name.
- **HelpDesk Case Form Name** — Remedy form name that the Remedy Web Services (you configured the connector to use) is based on. The Remedy default Service Desk Web services, for example, use the form `HPD:IncidentInterface`.
- **Web Server** — The name or IP address of the server that hosts Remedy Mid-Tier.

2.5.3 Grace Period

You can enable and disable the grace period and configure its value. By default, the grace period is disabled. See Section 1.6, "Grace Period" for details. This setting applies to all incidents the Remedy Service Desk Connector processes. The grace period interval accepts the number of hours as any integer value. For example, - 1 or 2.

2.5.4 Retry

You can enable and disable the Retry option and configure its interval value. By default, the Retry is disabled. See Section 1.7, "Retry" for details. This setting applies to all incidents in the Remedy Service Desk Connector processes. The retry period interval accepts the number of hours as any integer value. For example, - 1 or 2.

2.6 Working with Ticket Templates

When a connector instance is created in Enterprise Manager, all associated templates are available for ticket create/update operations. There are three default Remedy templates:

- `Remedy_DefaultCategory_AutoResolve.xsl`

- Remedy_DefaultCategory_AutoClose.xsl
- Remedy_DefaultCategory.xsl

> **Tip:** See Section 4.1, "Template Process" for detailed information about these templates.

The following sections provide information about adding, viewing, removing, and replacing ticket templates.

2.6.1 Adding Ticket Templates

You need to add ticket templates before they are recognized in Enterprise Manager.

For each template above, 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.xml>]
[-repos_pwd <repos password>]
[-cname <connectorName>]
[-iname <internalName>]
[-tname <templateName>]
[-ttype <templateType>]
[-d <description>]
```

Where:

```
-t           Template(full path)
-repos_pwd   Enterprise Manager Root (SYSMAN) Password
-cname       Connector Name
-iname       Template Internal Name
-tname       Template Name Displayed
-ttype       Template Type
             <templateType> 1 - inbound transformation
             <templateType> 2 - outbound transformation
             <templateType> 3 - XML outbound transformation
-d           Description
```

For example: This command adds a new outbound template (new`Template.xsl`) for a connector instance with the name Remedy Connector Instance:

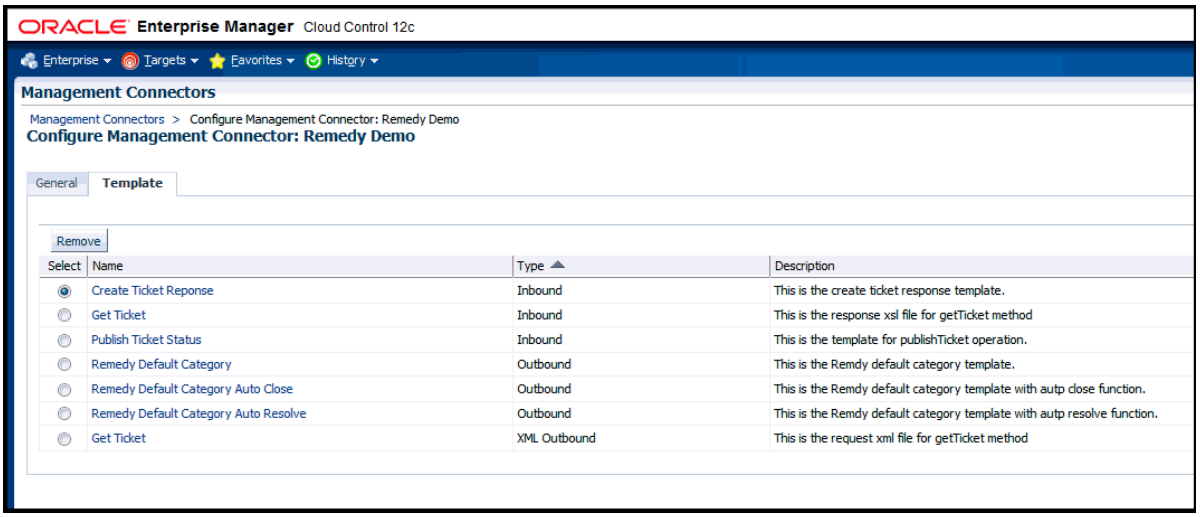
```
emctl register_template connector
-t <template.xml>
-repos_pwd <repos password>
-cname "Remedy Connector Instance"
-iname "newTemplate"
-tname "newTemplateOutbound"
-ttype 2
-d "Demo template"
```

2.6.2 Viewing Template Code

1. Select the connector instance and go to the connector configuration page.
2. Select the Template tab, as shown in Figure 2–4.
3. Click a template name 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.

Figure 2–4 Template Tab



2.6.3 Removing a Template

1. Select the connector instance and go to the connector configuration page.
2. Select the template tab.
3. Select the template and click the **Remove** button.
4. Click **OK** for the deletion to take effect.

> **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.

2.6.4 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 2.6.1, "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.

2.6.5 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 have may 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.

2.7 Deleting the Connector

You can delete a connector from the Management Connector page by selecting the connector and clicking the **Delete** button. After a connector is deleted, all associated incident rules are no longer configured for ticketing operations.

Additionally, if the connector deleted is the only connector instance of that connector type, the corresponding connector type is also deleted.

Note: The above rule is not applicable to the out-of-box connector type.

3

Creating Remedy Tickets

You can create tickets automatically or manually. The following sections explain how to create both types.

- Automatically Creating a Ticket
- Manually Creating a Ticket

> **Note:** At least one ticketing connector must be configured and enabled in order to create a ticket using either method.

3.1 Automatically Creating a Ticket

To automatically create a ticket in Remedy Help Desk, you need to create a rule that specifies the event or incident condition on which the ticket should be created. In this rule, you also specify the ticket template to be used with the Remedy Help Desk connector.

To create a rule to automatically create a ticket in Remedy Help Desk:

1. From the Enterprise Manager console, click **Setup**, then **Incidents** and **Incident Rules**.
2. Click **Create Rule Set**. On the Create Rule Set page, enter a name and description.
3. Click the **Rules** tab.

   As you proceed below, the wizard interface explains various rules and their usage. For detailed information, refer to the "Incident Management" chapter in the *Oracle Enterprise Manager Cloud Control Administrator's Guide.*

   - For **events** —

     This is the typical option to choose to create a ticket for an event, such as a target down availability event.

     Click **Create** and select **Incoming events or updates to events** as a type of rule to create from the pop-up window. Follow the steps below to create a rule.

   - 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. Follow the steps below to create a rule.
4. While configuring the above rule under the Add Actions page:

   - For **events** —

Select the **Create Incident** check box. This makes the Create Ticket option visible. Then, select the **Create Ticket** checkbox. It will display the combo box to select Connector Type, name, and template.

- For **incidents** —

  You can use this option to create tickets based on incident attributes, such as priority 1 incidents or incidents based on fatal or critical severity.

  Select the **Create Ticket** check box. It will display the combo box to select Connector Type, name, and template.

Figure 3–1 shows the Add Actions page for events, and Figure 3–2 shows the Add Actions page for incidents.

Figure 3–1 Add Actions Page for Events

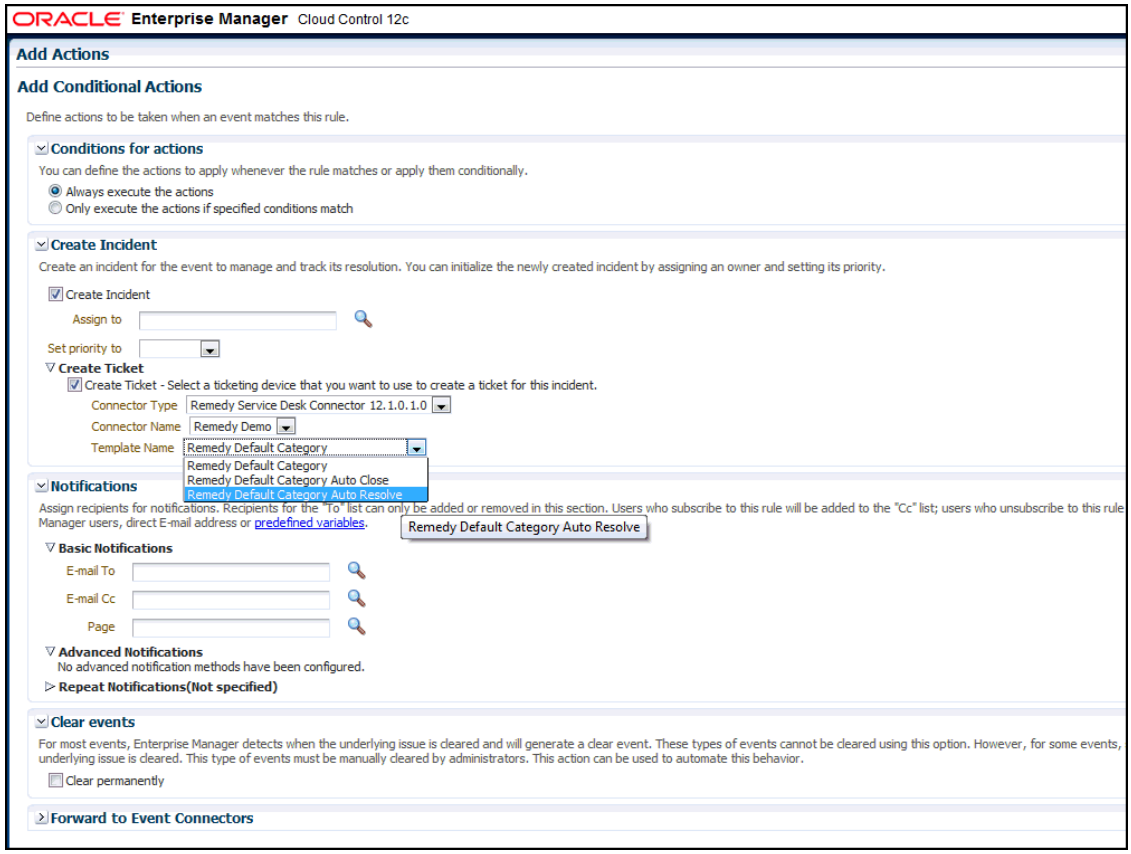
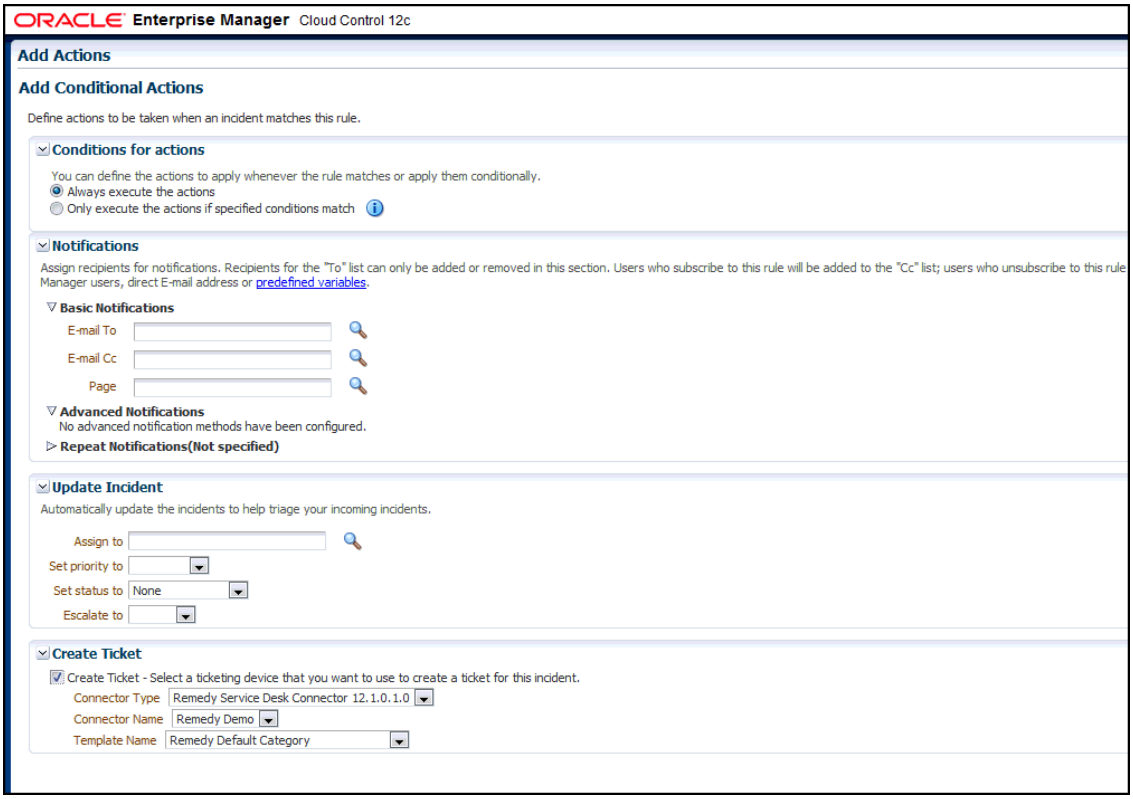


Figure 3–2 Add Actions Page for Incidents



5. After selecting an appropriate connector and template, click **Save**.

The following process occurs after you create the event or incident rule:

- A request is sent to the Remedy Service Desk Connector when a incident is created due to an event that matches your rule.
- The ticket is created or updated on the Remedy Ticket system.
- In Enterprise Manager, the incident is annotated with a comment on the Updates tab to indicate that a ticket was created or updated, as shown in Figure 3–3. Additionally, the incident is updated with the ticket ID, ticket status, and ticket URL under the Incident Tracking section.

A ticket is updated if there is an existing active ticket for an incident. Figure 3–4 shows the ticket in the Remedy console.

To configure Remedy to return the ticket status to Enterprise Manager, see Chapter 6, "Advanced Ticketing Configuration."

Figure 3–3 Incident Comments

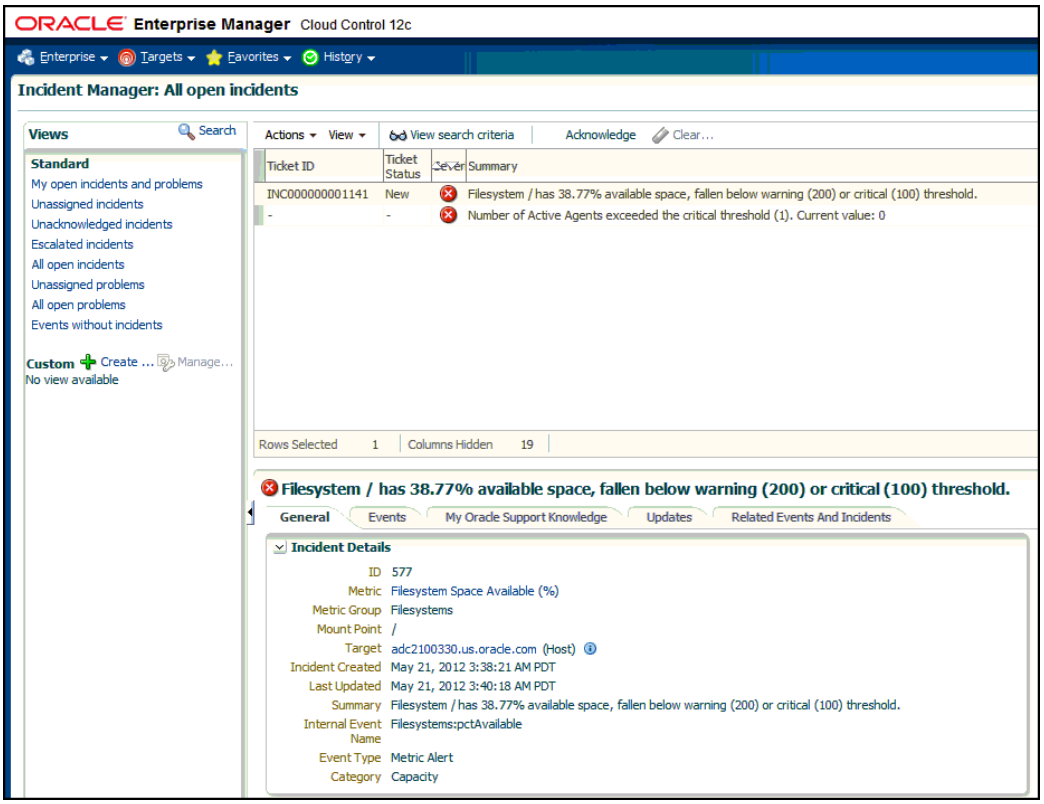
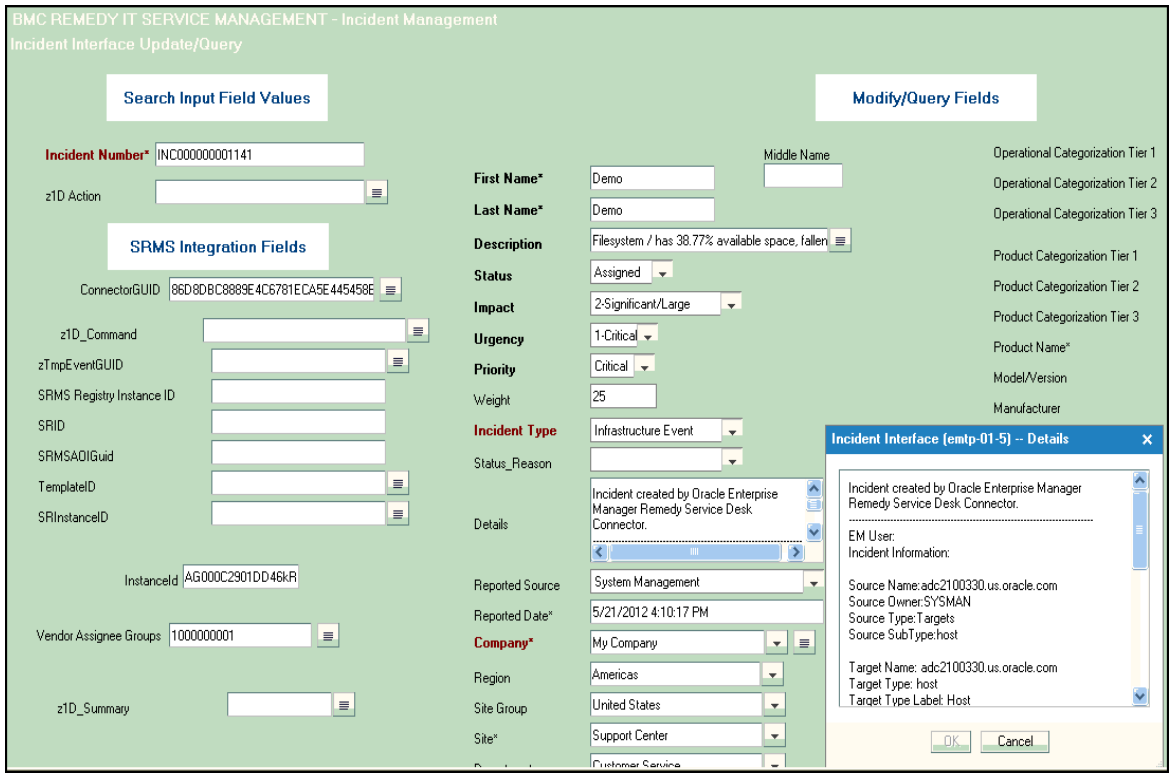


Figure 3–4 Remedy Console Ticket



3.2 Manually Creating a Ticket

Perform the following steps to manually create a ticket:

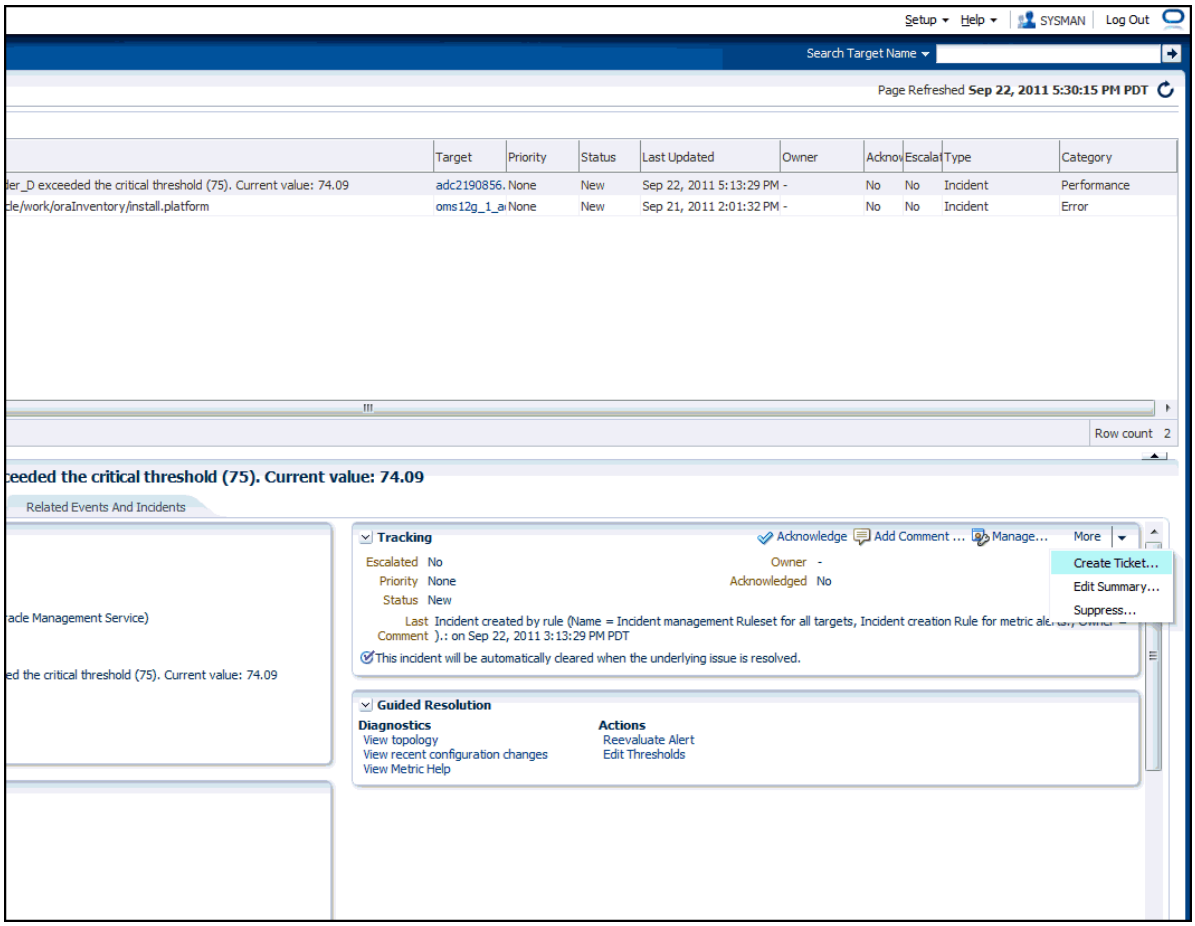
1. From the Enterprise menu of the Enterprise Manager console, select **Monitoring**, then **Incident Manager**.

   The Incident Manager page appears, showing all open incidents.

2. Select any incident from the list in the table.

3. In the Tracking section, click **More**, then **Create Ticket**, as shown in Figure 3–5.

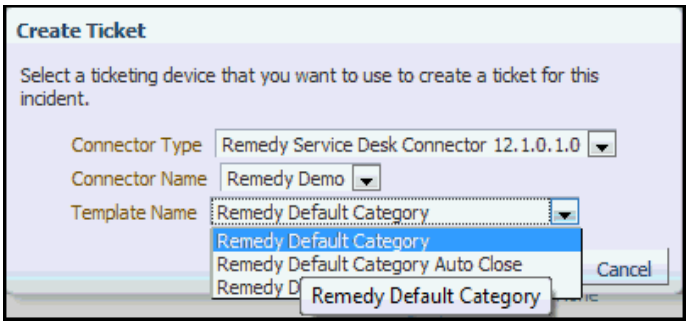
Figure 3–5 Tracking Section of Incident Manager



4. In the Create Ticket pop-up window, select a ticket template from the Template Name drop-down menu as shown in Figure 3–6, then click **OK**.

   If you do not see the desired template, you can add one using the emctl command. See Section 2.6.1, "Adding Ticket Templates".

Figure 3–6 Create Ticket Pop-up Window



If creating ticket is successful, the ticket ID appears in the tracking section for the incident. If the Web console settings are configured and enabled, the ticket ID appears as a link to the ticket page in the Remedy Service Desk.

Note: You cannot manually update the ticket using the Remedy Service Desk Connector. You need to manually update the ticket in Remedy for any subsequent incident severity change.

4

Using Default Templates

This chapter provides details on the default ticket templates shipped along with the Remedy Service Desk Connector. The ticket templates specify the mappings between an Enterprise Manager incident and underlying event attributes and Remedy ticket attributes.

- Template Process
- Ensuring Web Services for Default Templates
- Reading Ticket Templates
- Customizing Ticket Templates
- Defining New Templates

4.1 Template Process

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

- Write incident information to `Description` (Remedy ticket description).
- Set the Remedy ticket summary based on the incident message. During updating, the ticket summary field is updated to include the latest incident message information.

The out-of-box templates are as follows:

- `Remedy_DefaultCategory_AutoResolve.xsl`
- `Remedy_DefaultCategory_AutoClose.xsl`
- `Remedy_DefaultCategory.xsl`

Remedy_DefaultCategory_AutoResolve.xsl

The `Remedy_DefaultCategory_AutoResolve.xsl` template sets the ticket status to Resolved when the event severity value becomes clear. When the same event with a Critical or Warning severity occurs within the grace period time, the following occurs:

- The ticket is reopened.
- The status field is set as Assigned.
- The ticket Summary, Notes, Work Info Summary, and Work Info Notes fields are updated with the latest event information. If you leave an incident as resolved, the Incident Management application closes the incident after 15 days. See the *BMC Remedy Service Desk: Incident Management 7.0 User's Guide* for more information.

Remedy_DefaultCategory_AutoClose.xsl

The `Remedy_DefaultCategory_AutoClose.xsl` template sets the ticket status to Closed when the event severity value becomes Clear. After the Ticket Status is closed, it cannot be reassigned to other values. When the same event with critical or warning severity occurs within the grace period time, the following occurs:

- The ticket is not reopened.
- The status field remains Closed, but the ticket Summary, Notes, Work Info Summary, and Work Info Notes fields are updated with the latest event information.

Note: Oracle recommends that you do not select `Remedy_DefaultCategory_AutoClose.xsl` if you want tickets to be reopened when a critical or warning event has occurred within the grace period.

If you want tickets to be reopened, then select `Remedy_DefaultCategory_AutoResolve.xsl`.

Remedy_DefaultCategory.xsl

The `Remedy_DefaultCategory.xsl` template does not close the ticket when the event severity value becomes clear. When the same event with a Critical or Warning severity occurs within the grace period time, the ticket Summary, Notes, Work Info Summary, and Work Info Notes fields are updated with the latest event information.

4.2 Ensuring Web Services for Default Templates

If you choose default ticket templates, ensure that the following HPD:HelpDesk related Web services are up and running on the Remedy AR server:

- `HPD_IncidentInterface_Create_WS`
- `HPD_IncidentInterface_WS`

4.3 Reading Ticket Templates

Table 4–1 and Table 4–2 illustrate the creation of a ticket using `Remedy_DefaultCategory_AutoResolve.xsl`. This illustration will help you to read a ticket template. In the tables, * denotes a literal string and ** indicates `if the attribute applies.`

Ticket creation mappings are the same for `Remedy_DefaultCategory_AutoResolve.xsl`, `Remedy_DefaultCategory_AutoClose.xsl`, and `Remedy_DefaultCategory.xsl`.

Table 4–1 shows Remedy ticket attributes and corresponding Enterprise Manager incident values for ticket creation mappings.

Note: Remedy Ticket Attributes for which no values are needed are not mentioned in the table.

Table 4–1 Ticket Creation Mappings (for all templates)

Remedy Ticket Attributes	Enterprise Manager incident Attributes	Value
First_Name	HDUser	User name provided in the "Remedy Username" field during the configuration.
Impact	SeverityCode — Applies to incident severity	For incidents: ■ If severity is Fatal, set Impact to 1-Extensive/ Widespread. ■ If severity is Critical, set Impact to 2-Significant/Large. ■ Otherwise, set Impact to 3-Moderate/Limited.
Last_Name	HDUser	User name provided in the "Remedy Username" field during the configuration. It is assumed the same user exists in Remedy people form. Example: First_ Name=admin, Last_ Name=admin and the same user “admin admin” exists in Remedy server.
Reported_Source		"Systems Management" *
Service_Type		"Infrastructure Event" *
Status		New *
Action		CREATE *
Create_Request		Blank
Summary	Summary - Example: Memory Utilization is 59.024%, crossed warning (0.01)	

Table 4–1 (Cont.) Ticket Creation Mappings (for all templates)

Remedy Ticket Attributes	Enterprise Manager incident Attributes	Value
Notes	**For incidents:** EMUser — Incident or event 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. Other Incident information includes: Source Name Source Owner - Example: Sysman Source Type Source SubType TargetName TargetType TargetProperties** — name:value pairs of defined target properties. For example: Line of business: Finance Owner: Finance-DB Team Severity Priority Creation Date - Incident Creation Date LastUpdatedDate Owner - Incident Owner URL - Incident URL IncidentRuleName	Values from the EM Incident context.
Urgency	Based on SeverityCode	For metric incidents: ■ If severity is Fatal or Critical, set Urgency to 1-Critical. ■ If severity is Warning, set Urgency to 2-High ■ Otherwise, set Urgency to 3-Medium.
Work_Info_Summary	Summary. Example: Memory Utilization is 59.024%, crossed warning (0.01)	
Work_Info_Notes	Severity — Example: Incident created by Oracle Enterprise Manager Remedy Service Desk Connector for Critical severity	
Work_Info_Type		"Incident Task/Action" *
Work_Info_Source		"System Assignment" *
Work_Info_View_ Access		"Public" *

Table 4–1 (Cont.) Ticket Creation Mappings (for all templates)

Remedy Ticket Attributes	Enterprise Manager incident Attributes	Value
ConnectorGUID	ConnectorGUID	

Table 4–2 shows Remedy ticket attributes and corresponding Enterprise Manager incident attributes and values for `Remedy_DefaultCategory_AutoResolve.xsl` mappings.

Table 4–2 Ticket Updates (Remedy_DefaultCategory_AutoResolve.xsl Mappings)

Remedy Ticket Attributes	Enterprise Manager incident Attributes	Value
Company		"My Company" *
Summary	Summary - Example: Memory Utilization is 59.024%, crossed warning (0.01)	
Notes	**For incidents:** EMUser — Incident 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. Other Incident information includes: Source Name Source Owner - Example: Sysman Source Type Source SubType TargetName TargetType TargetProperties** — name:value pairs of defined target properties. For example: Line of business: Finance Owner: Finance-DB team Severity Priority Creation Date - Incident Creation date LastUpdatedDate Owner - Incident Owner CollectionTime URL - Incident URL IncidentRuleName	Values from the EM Incident context.

Table 4–2 (Cont.) Ticket Updates (Remedy_DefaultCategory_AutoResolve.xsl Mappings)

Remedy Ticket Attributes	Enterprise Manager incident Attributes	Value
Impact	SeverityCode — Applies to incidents severity	For metric incidents: ■ If severity is Fatal, set Impact to 1-Extensive/ Widespread. ■ If severity is Critical, set Impact to 2-Significant/Large. ■ Otherwise, set Impact to 3-Moderate/Limited.
Incident_Number	TicketID — The connector adds this into the incident context before handling the ticketing action. Required by the Remedy Web Service to identify the ticket that must be updated.	
Reported_Source		"Systems Management" *
Resolution	Severity, Summary	If the severity is Clear, add the Resolution with Summary.
Service_Type		"Infrastructure Event" *
Status	Based on Severity	If severity is Clear, set the ticket to the status Resolved. Otherwise set ticket to status Assigned.
Status_Reason	Based on Severity	If severity is Clear, set the Status_Reason to "Automated Resolution Reported."
Urgency	Based on SeverityCode	For metric incidents: ■ If severity is Fatal or Critical, set Urgency to 1-Critical. ■ If severity is Warning, set Urgency to 2-High ■ Otherwise, set Urgency to 3-Medium.
Action		MODIFY*
Work_Info_Type		"Incident Task/Action" *
Work_Info_Source		"System Assignment" *
Work_Info_Notes	Based on Severity – inforamtion text is added	
Work_Info_Locked		"No" *
Work_Info_View_Access		"Public" *
Work_Info_Summary	Summary	
ConnectorGUID	ConnectorGUID	

Use the mapping table (Table 4–1) as a reference to read the XSLT file in Example 4–1.

Example 4–1 Remedy_DefaultCategory_ AutoResolve.xsl Source Code with Annotations

```
  <?xml version="1.0" encoding="UTF-8" ?>
- <xsl:transform version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
xmlns:ns0="http://xmlns.oracle.com/sysman/connector"
targetNamespace="http://xmlns.oracle.com/sysman/connector"
elementFormDefault="qualified">
- <!--
 This template creates an incident type ticket within Remedy Service
 Desk with default settings. On update, the worklog is updated with the latest
 incident message and severity information. The ticket is set to status Resolved
 if the associated alert has cleared. Ticket can be reopend if a severity
 occured with in the grace period. If the ticket is not reopened for 15 days,
 ticket will be closed by incident management.


  -->
- <xsl:template match="ns0:EMIncident">
- <xsl:choose>
- <xsl:when test="normalize-space(ns0:TicketID) = ''">
- <urn:HelpDesk_Submit_Service xmlns:urn="urn:HPD_IncidentInterface_Create_WS">
- <!--
 EDIT THE TAG VALUES BELOW TO CHANGE HOW A TICKET IS FILLED
    DURING TICKET CREATION. REFER TO THE REMEDY SERVICE DESK MANUAL
    FOR DESCRIPTION OF THESE HELPDESK SUPPORT DATAFIELDS

  -->
  <urn:Assigned_Group />
  <urn:Assigned_Group_Shift_Name />
  <urn:Assigned_Support_Company />
  <urn:Assigned_Support_Organization />
  <urn:Assignee />
  <urn:Categorization_Tier_1 />
  <urn:Categorization_Tier_2 />
  <urn:Categorization_Tier_3 />
  <urn:CI_Name />
  <urn:Closure_Manufacturer />
  <urn:Closure_Product_Category_Tier1 />
  <urn:Closure_Product_Category_Tier2 />
  <urn:Closure_Product_Category_Tier3 />
  <urn:Closure_Product_Model_Version />
  <urn:Closure_Product_Name />
  <urn:Department />
- <!-- FIRST_NAME,LAST_NAME VALUES ARE PICKED FROM THE USERNAME VALUE GIVEN DURING
REMEDY SERVICE DESK CONNECTOR CONFIGURATION. EXAMPLE USERNAME:Demo.
  -->
- <urn:First_Name>
  <xsl:value-of select="ns0:HDUser" />
  </urn:First_Name>
- <xsl:choose>
- <xsl:when test="(ns0:SystemAttributes/ns0:SeverityCode = 'FATAL')">
  <urn:Impact>1-Extensive/Widespread</urn:Impact>
  </xsl:when>
- <xsl:when test="(ns0:SystemAttributes/ns0:SeverityCode = 'CRITICAL')">
  <urn:Impact>2-Significant/Large</urn:Impact>
  </xsl:when>
- <xsl:otherwise>
  <urn:Impact>3-Moderate/Limited</urn:Impact>
  </xsl:otherwise>
  </xsl:choose>
- <urn:Last_Name>
```

```
  <xsl:value-of select="ns0:HDUser" />
  </urn:Last_Name>
  <urn:Lookup_Keyword />
  <urn:Manufacturer />
  <urn:Product_Categorization_Tier_1 />
  <urn:Product_Categorization_Tier_2 />
  <urn:Product_Categorization_Tier_3 />
  <urn:Product_Model_Version />
  <urn:Product_Name />
  <urn:Reported_Source>Systems Management</urn:Reported_Source>
  <urn:Resolution />
  <urn:Resolution_Category_Tier_1 />
  <urn:Resolution_Category_Tier_2 />
  <urn:Resolution_Category_Tier_3 />
  <urn:Service_Type>Infrastructure Event</urn:Service_Type>
  <urn:Status>New</urn:Status>
  <urn:Action>CREATE</urn:Action>
  <urn:Create_Request />
- <urn:Summary>
  <xsl:value-of select="substring(ns0:SystemAttributes/ns0:Summary, 0, 100)" />
  </urn:Summary>
- <urn:Notes>
  Incident created by Oracle Enterprise Manager Remedy Service Desk Connector.
------------------------------------------------------------------------------ EM
User:
  <xsl:value-of select="ns0:NotificationRuleOwner" />
  Incident Information: Source Name:
  <xsl:value-of select="ns0:SystemAttributes/ns0:SourceInfo/
ns0:SourceObjInfo/ns0:ObjName" />
- <xsl:choose>
- <xsl:when test="normalize-space(ns0:SystemAttributes/ns0:SourceInfo/
ns0:SourceObjInfo/ns0:ObjOwner) != ''">
  Source Owner:
  <xsl:value-of select="ns0:SystemAttributes/ns0:SourceInfo/
ns0:SourceObjInfo/ns0:ObjOwner" />
  </xsl:when>
  </xsl:choose>
  Source Type:
  <xsl:value-of select="ns0:SystemAttributes/ns0:SourceInfo/
ns0:SourceObjInfo/ns0:SourceObjType" />
  Source SubType:
  <xsl:value-of select="ns0:SystemAttributes/ns0:SourceInfo/
ns0:SourceObjInfo/ns0:SourceObjSubType" />
  Target Name:
  <xsl:value-of select="ns0:SystemAttributes/ns0:SourceInfo/
ns0:TargetInfo/ns0:TargetName" />
  Target Type:
  <xsl:value-of select="ns0:SystemAttributes/ns0:SourceInfo/
ns0:TargetInfo/ns0:TargetType" />
  Target Type Label:
  <xsl:value-of select="ns0:SystemAttributes/ns0:SourceInfo/
ns0:TargetInfo/ns0:TargetTypeLabel" />
  Target URL:
  <xsl:value-of select="ns0:SystemAttributes/ns0:SourceInfo/
ns0:TargetInfo/ns0:TargetURL" />
- <!--  LIST ALL THE TARGET PROPERTIES
  -->
  Target Properties:
- <xsl:for-each select="ns0:SystemAttributes/ns0:SourceInfo/ns0:TargetInfo/
ns0:TargetProperty">
```

```
  <xsl:text></xsl:text>
  <xsl:value-of select="./ns0:Name" />
  :
  <xsl:value-of select="./ns0:Value" />
  </xsl:for-each>
- <!--
 EDIT THE FOLLOWING CODE TO LIST A SPECIFIC TARGET PROPERTY,
        SUCH AS "Line of Business"
        <xsl:choose>
            <xsl:when test="ns0:SystemAttributes/ns0:SourceInfo/ns0:TargetInfo/
                            ns0:TargetProperty/ns0:Name='Line of Business'">
            Line of Business: <xsl:value-of select="ns0:ns0:SystemAttributes/
                                ns0:SourceInfo/ns0:TargetInfo/ns0:TargetProperty
                                /ns0:value"/>
            </xsl:when>
        </xsl:choose>


  -->
  Severity:
  <xsl:value-of select="ns0:SystemAttributes/ns0:Severity" />
  Priority:
  <xsl:value-of select="ns0:SystemAttributes/ns0:Priority" />
  CreationDate:
  <xsl:value-of select="ns0:SystemAttributes/ns0:CreationDate" />
  LastUpdatedDate:
  <xsl:value-of select="ns0:SystemAttributes/ns0:LastUpdatedDate" />
  Owner:
  <xsl:value-of select="ns0:SystemAttributes/ns0:Owner" />
- <xsl:choose>
- <xsl:when test="normalize-space(ns0:NotificationRuleName) != ''">
  Notification Rule:
  <xsl:value-of select="ns0:NotificationRuleName" />
  </xsl:when>
  </xsl:choose>
  URL:
  <xsl:value-of select="ns0:SystemAttributes/ns0:IncidentURL" />
  </urn:Notes>
- <xsl:choose>
- <xsl:when test="(ns0:SystemAttributes/ns0:SeverityCode = 'FATAL') or
(ns0:SystemAttributes/ns0:SeverityCode = 'CRITICAL')">
  <urn:Urgency>1-Critical</urn:Urgency>
  </xsl:when>
- <xsl:when test="(ns0:SystemAttributes/ns0:SeverityCode = 'WARNING')">
  <urn:Urgency>2-High</urn:Urgency>
  </xsl:when>
- <xsl:otherwise>
  <urn:Urgency>3-Medium</urn:Urgency>
  </xsl:otherwise>
  </xsl:choose>
- <urn:Work_Info_Summary>
  <xsl:value-of select="substring(ns0:SystemAttributes/ns0:Summary, 0, 100)" />
  </urn:Work_Info_Summary>
- <urn:Work_Info_Notes>
  Incident created by Oracle Enterprise Manager Remedy Service Desk Connector for
  <xsl:value-of select="ns0:SystemAttributes/ns0:Severity" />
  severity.
  </urn:Work_Info_Notes>
  <urn:Work_Info_Type>Incident Task / Action</urn:Work_Info_Type>
  <urn:Work_Info_Date />
```

```
  <urn:Work_Info_Source>System Assignment</urn:Work_Info_Source>
  <urn:Work_Info_Locked />
  <urn:Work_Info_View_Access>Public</urn:Work_Info_View_Access>
  <urn:Middle_Initial />
- <urn:ConnectorGUID>
  <xsl:value-of select="ns0:ConnectorGUID" />
  </urn:ConnectorGUID>
  </urn:HelpDesk_Submit_Service>
  </xsl:when>
- <xsl:otherwise>
- <urn:HelpDesk_Modify_Status_Service xmlns:urn="urn:HPD_IncidentInterface_WS">
  <urn:Categorization_Tier_1 />
  <urn:Categorization_Tier_2 />
  <urn:Categorization_Tier_3 />
  <urn:Closure_Manufacturer />
  <urn:Closure_Product_Category_Tier1 />
  <urn:Closure_Product_Category_Tier2 />
  <urn:Closure_Product_Category_Tier3 />
  <urn:Closure_Product_Model_Version />
  <urn:Closure_Product_Name />
- <!-- EDIT THE Company TAG BELOW TO ADD A Company NAME THAT IS ASSOCIATED WITH
FIRST_NAME,LAST_NAME TAGS ON THE REMEDY
  -->
  <urn:Company>My Company</urn:Company>
- <urn:Summary>
  <xsl:value-of select="substring(ns0:SystemAttributes/ns0:Summary, 0, 100)" />
  </urn:Summary>
- <urn:Notes>
  Incident updated by Oracle Enterprise Manager Remedy Service Desk Connector.
---------------------------------------------------------------------------- EM
User:
  <xsl:value-of select="ns0:NotificationRuleOwner" />
  Incident Information: Source Name:
  <xsl:value-of select="ns0:SystemAttributes/ns0:SourceInfo/
ns0:SourceObjInfo/ns0:ObjName" />
- <xsl:choose>
- <xsl:when test="normalize-space(ns0:SystemAttributes/ns0:SourceInfo/
ns0:SourceObjInfo/ns0:ObjOwner) != ''">
  Source Owner:
  <xsl:value-of select="ns0:SystemAttributes/ns0:SourceInfo/
ns0:SourceObjInfo/ns0:ObjOwner" />
  </xsl:when>
  </xsl:choose>
  Source Type:
  <xsl:value-of select="ns0:SystemAttributes/ns0:SourceInfo/
ns0:SourceObjInfo/ns0:SourceObjType" />
  Source SubType:
  <xsl:value-of select="ns0:SystemAttributes/ns0:SourceInfo/
ns0:SourceObjInfo/ns0:SourceObjSubType" />
  Target Name:
  <xsl:value-of select="ns0:SystemAttributes/ns0:SourceInfo/
ns0:TargetInfo/ns0:TargetName" />
  Target Type:
  <xsl:value-of select="ns0:SystemAttributes/ns0:SourceInfo/
ns0:TargetInfo/ns0:TargetType" />
  Target Type Label:
  <xsl:value-of select="ns0:SystemAttributes/ns0:SourceInfo/
ns0:TargetInfo/ns0:TargetTypeLabel" />
  Target URL:
  <xsl:value-of select="ns0:SystemAttributes/ns0:SourceInfo/
```

```
ns0:TargetInfo/ns0:TargetURL" />
- <!--  LIST ALL THE TARGET PROPERTIES
  -->
  Target Properties:
- <xsl:for-each select="ns0:SystemAttributes/ns0:SourceInfo/ns0:TargetInfo/
ns0:TargetProperty">
  <xsl:text></xsl:text>
  <xsl:value-of select="./ns0:Name" />
  :
  <xsl:value-of select="./ns0:Value" />
  </xsl:for-each>
- <!--
 EDIT THE FOLLOWING CODE TO LIST A SPECIFIC TARGET PROPERTY,
        SUCH AS "Line of Business"
        <xsl:choose>
            <xsl:when test="ns0:SystemAttributes/ns0:SourceInfo/ns0:TargetInfo/
                            ns0:TargetProperty/ns0:Name='Line of Business'">
            Line of Business: <xsl:value-of select="ns0:ns0:SystemAttributes/
                                ns0:SourceInfo/ns0:TargetInfo/ns0:TargetProperty
                                /ns0:value"/>
            </xsl:when>
        </xsl:choose>


  -->
  Severity:
  <xsl:value-of select="ns0:SystemAttributes/ns0:Severity" />
  Priority:
  <xsl:value-of select="ns0:SystemAttributes/ns0:Priority" />
  CreationDate:
  <xsl:value-of select="ns0:SystemAttributes/ns0:CreationDate" />
  LastUpdatedDate:
  <xsl:value-of select="ns0:SystemAttributes/ns0:LastUpdatedDate" />
  Owner:
  <xsl:value-of select="ns0:SystemAttributes/ns0:Owner" />
- <xsl:choose>
- <xsl:when test="normalize-space(ns0:NotificationRuleName) != ''">
  Notification Rule:
  <xsl:value-of select="ns0:NotificationRuleName" />
  </xsl:when>
  </xsl:choose>
  URL:
  <xsl:value-of select="ns0:SystemAttributes/ns0:IncidentURL" />
  </urn:Notes>
- <xsl:choose>
- <xsl:when test="(ns0:SystemAttributes/ns0:SeverityCode = 'FATAL')">
  <urn:Impact>1-Extensive/Widespread</urn:Impact>
  </xsl:when>
- <xsl:when test="(ns0:SystemAttributes/ns0:SeverityCode = 'CRITICAL')">
  <urn:Impact>2-Significant/Large</urn:Impact>
  </xsl:when>
- <xsl:otherwise>
  <urn:Impact>3-Moderate/Limited</urn:Impact>
  </xsl:otherwise>
  </xsl:choose>
- <urn:Incident_Number>
  <xsl:value-of select="ns0:TicketID" />
  </urn:Incident_Number>
  <urn:Manufacturer />
  <urn:Product_Categorization_Tier_1 />
```

```
  <urn:Product_Categorization_Tier_2 />
  <urn:Product_Categorization_Tier_3 />
  <urn:Product_Model_Version />
  <urn:Product_Name />
  <urn:Reported_Source>Systems Management</urn:Reported_Source>
- <xsl:choose>
- <xsl:when test="(ns0:SystemAttributes/ns0:SeverityCode = 'CLEAR')">
- <urn:Resolution>
  Incident resolved by Oracle Enterprise Manager Remedy Service Desk Connector due
to change in severity of the associated alert. Severity:
  <xsl:value-of select="ns0:SystemAttributes/ns0:Severity" />
  Message:
  <xsl:value-of select="substring(ns0:SystemAttributes/ns0:Summary, 0, 100)" />
  </urn:Resolution>
  </xsl:when>
- <xsl:otherwise>
  <urn:Resolution />
  </xsl:otherwise>
  </xsl:choose>
  <urn:Resolution_Category />
  <urn:Resolution_Category_Tier_2 />
  <urn:Resolution_Category_Tier_3 />
  <urn:Resolution_Method />
  <urn:Service_Type>Infrastructure Event</urn:Service_Type>
- <xsl:choose>
- <xsl:when test="(ns0:SystemAttributes/ns0:SeverityCode = 'CLEAR')">
  <urn:Status>Resolved</urn:Status>
  </xsl:when>
- <xsl:otherwise>
  <urn:Status>Assigned</urn:Status>
  </xsl:otherwise>
  </xsl:choose>
- <xsl:choose>
- <xsl:when test="(ns0:SystemAttributes/ns0:SeverityCode = 'CLEAR')">
  <urn:Status_Reason>Automated Resolution Reported</urn:Status_Reason>
  </xsl:when>
- <xsl:otherwise>
  <urn:Status_Reason />
  </xsl:otherwise>
  </xsl:choose>
- <xsl:choose>
- <xsl:when test="(ns0:SystemAttributes/ns0:SeverityCode = 'FATAL') or
(ns0:SystemAttributes/ns0:SeverityCode = 'CRITICAL')">
  <urn:Urgency>1-Critical</urn:Urgency>
  </xsl:when>
- <xsl:when test="(ns0:SystemAttributes/ns0:SeverityCode = 'WARNING')">
  <urn:Urgency>2-High</urn:Urgency>
  </xsl:when>
- <xsl:otherwise>
  <urn:Urgency>3-Medium</urn:Urgency>
  </xsl:otherwise>
  </xsl:choose>
  <urn:Action>MODIFY</urn:Action>
  <urn:Work_Info_Type>Incident Task / Action</urn:Work_Info_Type>
  <urn:Work_Info_Date />
  <urn:Work_Info_Source>System Assignment</urn:Work_Info_Source>
- <xsl:choose>
- <xsl:when test="(ns0:SystemAttributes/ns0:SeverityCode = 'CLEAR')">
- <urn:Work_Info_Notes>
  Incident resolved by Oracle Enterprise Manager Remedy Service Desk Connector due
```

```
to change in associated Incident:
  <xsl:value-of select="ns0:SystemAttributes/ns0:Severity" />
  severity.
  </urn:Work_Info_Notes>
  </xsl:when>
- <xsl:when test="ns0:ReopenTicket = 'Yes'">
- <urn:Work_Info_Notes>
  Incident reopened because the associated alert re-triggered within the grace
period:
  <xsl:value-of select="ns0:SystemAttributes/ns0:Severity" />
  severity.
  </urn:Work_Info_Notes>
  </xsl:when>
- <xsl:otherwise>
- <urn:Work_Info_Notes>
  Incident updated due to change in associated Incident:
  <xsl:value-of select="ns0:SystemAttributes/ns0:Severity" />
  severity.
  </urn:Work_Info_Notes>
  </xsl:otherwise>
  </xsl:choose>
  <urn:Work_Info_Locked>No</urn:Work_Info_Locked>
  <urn:Work_Info_View_Access>Public</urn:Work_Info_View_Access>
- <urn:Work_Info_Summary>
  <xsl:value-of select="substring(ns0:SystemAttributes/ns0:Summary, 0, 100)" />
  </urn:Work_Info_Summary>
- <urn:ConnectorGUID>
  <xsl:value-of select="ns0:ConnectorGUID" />
  </urn:ConnectorGUID>
  </urn:HelpDesk_Modify_Status_Service>
  </xsl:otherwise>
  </xsl:choose>
  </xsl:template>
  </xsl:transform>
```

4.4 Customizing Ticket Templates

If the out-of-box ticket templates do not satisfy your requirements, you can modify them. To do this, Oracle recommends that you use one of the existing templates as the base template. Copy this ticket template to a new file, modify, and register the new ticket template.

In most cases, when you modify the ticket template, you might only be changing the mappings. The following examples illustrate this concept:

Example 4–2 Creating a Template to Mark the <Company/> Element to MyCompany

To create a template to mark the category to `MyCompany`, modify the following attribute in the template:

```
<urn:Company>MyCompany</urn:Company>
```

Example 4–3 Altering the Message Type

If you only want the incident message to appear as a ticket summary instead of both message and severity, modify the following attribute:

```
<urn:Summary><xsl:value-of select="ns0:Message"/></urn:Summary>
```

The templates are highly customizable. Oracle recommends that only users with advanced knowledge of XSLT make complex changes.

You can use incident or event rules as a filter to associate proper ticket templates with incidents. You can have as many tickets templates as desired. One incident or event rule can have only one ticket template.

4.5 Defining New Templates

The out-of-box templates are based on the default `HPD:IncidentInterface_Create,HPD:IncidentInterface` forms. If the new ticket templates you define are based on these forms, Customizing Ticket Templates applies.

However, if you use a different form, you need to define a new ticket template.

Enterprise Manager Attributes

Table 4–3 provides the Enterprise Manager fields that you can map when using the default Remedy Service Desk Web services:

Table 4–3 Enterprise Manager Attributes

Data Fields	Description
EMUser	▪ For auto-ticketing, this is the incident rule owner. ▪ For manual ticketing, this is the console user that triggered the ticket creation.
HDUser	Service Desk user registered with the Connector; this is the same as the user name specified for the WS authentication.
TicketID	Identifies the ticket associated with the current incident (available after ticket creation).
ConnectorID	Identifies the connector that processed the incident and issued the ticket creation or ticket update. This is the ID for the Remedy Service Desk Connector.
TargetType	Type of target that the incident is associated with, such as `host`.
TargetName	Name of the target that the incident is associated with. For example, `Database1` or `stadc40.us.oracle.com`.
TargetProperties	TargetProperties store environmental or usage context information specific to the target. For example, for Host Target, the name /value pair of TargetProperties are: ▪ Comment — Host running the management service and repository. ▪ Contact — John Doe ▪ Deployment Type — Production ▪ Line of Business — Development ▪ Location — Redwood Shores These are out-of-box user-defined target properties. If additional target properties are added, they are displayed with ticket information.
Summary	Description of the incident. For example: CPU Utilization is 100%, crossed warning (80) or critical (95) threshold.
Severity	Severity of the incident: `critical, warning, clear,` or `down.`
CollectionTime	Timestamp of an incident occurrence.
IncidentURL	URL to the incident details page of the incident.

Table 4–3 (Cont.) Enterprise Manager Attributes

Data Fields	Description
NotificationRuleName	Name of the incident rule that generated the notification during auto-ticketing.
TargetTimezone	Timezone of the target associated with the incident.
ReopenTicket	Value `Yes` indicates that the incident is cleared since the last update or creation, but is within the configured grace period.

Format for Creating Ticket Templates

To create ticket templates for custom Remedy forms, adhere to the following format:

Example 4–4 Template Format for Custom Remedy Forms

```
<?xml version='1.0' encoding='UTF-8'?>
<xsl:transform version="1.0"
               xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
                xmlns:ns0="http://xmlns.oracle.com/sysman/connector"
                targetNamespace="http://xmlns.oracle.com/sysman/connector"
                elementFormDefault="qualified">

<!--This template creates an incident type ticket with default categorization.
    The ticket priority is based on event severity. On update,the ticket summary
    is updated with the latest incident message and severity information.   -->

<xsl:template match="ns0:EMIncident">
<xsl:choose>
<xsl:when test="normalize-space(ns0:TicketID) = ''">

*[Insert your mappings from EMIncident into your custom Create Ticket Webservice
SOAP Document] *

</xsl:when>
<xsl:otherwise>

* [Insert your mappings from EMIncident schema into your Custom Update Ticket
Webservice SOAP Document]*

</xsl:otherwise>
</xsl:choose>
</xsl:template>
</xsl:transform>
```

5

Enabling SSL for HTTPS

Follow the steps provided in this section if you choose HTTPS as the protocol to establish a connection between the external ticketing system and Enterprise Manager.

5.1 Generating a Certificate Request File

Generate a certificate request file for the external ticketing system and send it to the Certificate authority, such as VeriSign.

Note: The certificate request file is dependent on the Web server used by the external ticketing system.

5.2 Importing the Certificate from the Certificate Authority

After you get the certificate, import it to the Web server the external ticketing system uses. The import mechanism varies depending on the Web server the external ticketing system uses.

Note: Make sure `https://<webserver>:port` is enabled and working on the external ticketing system.

5.3 Importing the Server Certificate on Enterprise Manager

Import the Server certificate (the certificate you got from Certificate Authority) using the following steps:

1. Append the external Certificate Authority's certificate to:

   ```
   $INSTANCE_HOME/sysman/config/b64LocalCertificate.txt
   ```

2. Ensure that only the following is appended to the `b64LocalCertificate.txt` file (that is, do not include blank lines or comments or any other special characters):

   ```
   -----BEGIN CERTIFICATE-----
   <<<Certificate in Base64 format>>>
   -----END CERTIFICATE-----
   ```

3. Restart the OMS. Run the following commands:

   ```
   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, then repeat the steps 1 through 3 to make sure the external certificate exists on the `b64certificate.txt` file.

6

Advanced Ticketing Configuration

6.1 Customizing to Support a Ticketing Inbound Operation

Ticketing Inbound is a new feature added in Enterprise Manager 12*c*. This feature enables you to update the ticket status in Enterprise Manager for any ticket status change on the Remedy Help Desk system.

When a ticket/incident, which is created by Enterprise Manager, is updated manually in the Remedy Service Desk Incident Management console, the same ticket status is updated on Enterprise Manager through EM CLI by using Remedy Active Links.

6.1.1 Steps to Set Up EM CLI

Install the Enterprise Manager `EMCLI_Client` on the same host that Remedy is installed on. This will need to be able to communicate to your OMS.

1. Log in to the Enterprise Manager console.
2. Select **Setup**, then select **Command Line Interface**.
3. Click the **Download the EM CLI kit to your workstation** link and download the `.jar` file in the Remedy server.
4. Follow the steps given in the page to install the EM CLI client on the Remedy server.

> **Note:** EM CLI should be installed on the Remedy server in order to communicate to your OMS.

6.1.2 ActiveLinks Customization

Invoking EM CLI is done by triggering Remedy Active links. Perform the following steps in the following sections to customize ActiveLinks to call EM CLI.

6.1.2.1 ActiveLinks Customization for Remedy 7.1

1. Log in to the Remedy administrator tool.
2. Select **ActiveLinks** on the server window.
3. Right-click and select **New ActiveLink**.
4. Provide the following input on the Basic tag:

a. ActiveLink name on the Name Field. (Example. `Update_ticket_status_OEM`).

b. Select **Enable, Execution Order:250**.

c. Select **Form Name:**

```
HPD:HelpDesk,HPD:IncidentInterface,HPD:IncidentInterface_Create
```

d. Select **Execute On:**

```
Submit,After Submit,After Modify,Menu/Row/Level Choice
```

e. Select Field: Status

f. Add Run if:

```
('ConnectorGUID' !=  $NULL$ ) AND ( 'Status' <= "Closed")
```

5. Provide on - If Action tag.

a. Select **New Action: Message**.

```
Text:   Invoking Active link To send ticket status to EM.
Type:   Note
Number: 10000
```

b. Select **New Action: Run Process**. Enter the following on the command line:

```
"<PATH OF EMCLI>\emcli.bat" update_ticket_status -ticket_guid="$Incident
Number$" -connector_guid=$ConnectorGUID$ -status="$Status$"  -last_updated_
date="$Last Modified Date$" -date_format="MM/dd/yyyy hh:mm:ss"
```

Important: the `-date_format` is the date format used in the ticketing system (Remedy Help Desk).

This should be the same format of Reported Date/Last Modified Date/Submit Date used in the HPD:HelpDesk or HPD:IncidentInterface forms.

To get help about EM CLI arguments, enter `help` followed by the verb name, as shown in the following example:

```
"<PATH OF EMCLI>\emcli.bat" help update_ticket_status
```

---

6. Provide the necessary permissions for ActiveLink. For example, select **Public** or **Unrestricted Access**.

7. Save the ActiveLink.

6.1.2.2 ActiveLinks Customization for Remedy 7.5

1. Log in to the BMC Remedy Developer Studio, then open a workspace.

2. Select the Remedy instance from the pane that appears in the left side of the window.

3. Select **All Objects**, then **Active Links**.

4. Right-click and select **New ActiveLink**.

5. Click the **Associated Forms** tab, then add the **HPD:Help Desk** and **HPD:IncidentInterface** form names.

6. Select the **Execution Options** tab, then provide the following input:

- For State, select Enabled.
- For Execution Order, provide a valid number (example: 990).

7. Select **Submit** and **Modify** check boxes, and select **Status** for Field.
8. Add **Run** if:

```
'ConnectorGUID' != $NULL$ ) AND ( 'Status' <= "Closed")
```

9. Provide **On - If Action** tag:
   a. Select **New Action: Message**.

```
Text: Invoking Active link To send ticket status to EM.

Type: Note

Number: 10000
```

   b. Select **New Action: Run Process**, and enter the following input on the command line:

```
"<PATH OF EMCLI>\emcli.bat" update_ticket_status -ticket_guid="$Incident
Number$" -connector_guid=$ConnectorGUID$ -status="$Status$" -last_updated_
date="$Last Modified Date$" -date_format="MM/dd/yyyy hh:mm:ss"
```

   Note: The `-date_format` is the date format used in the ticketing system (Remedy Help Desk). This should be the same format as Reported Date/Last Modified Date/Submit Date used in the HPD:HelpDesk or HPD:IncidentInterface forms.

10. Save and provide the **ActiveLink** name on the **Name** field. (Example: `Update_ticket_status_OEM`)
11. Provide the necessary permissions for ActiveLink. For example, select **Public** or **Unrestricted Access**.