HP Release Control

for the Windows® operating systems

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Deployment Guide

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To find more information about access levels, go to:

http://h20230.www2.hp.com/new_access_levels.jsp

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Welcome to This Guide

Welcome to the *HP Release Control Deployment Guide*, which explains how to install and deploy HP Release Control software and how to upgrade to the latest version. HP Release Control provides a common platform of decision support for Change Advisory Board members and implementation teams during the release life cycle. HP Release Control analyzes each change request in the system and provides real-time information and alerts during implementation. In addition, HP Release Control enables collaboration, feedback, and review throughout the release life cycle.

This chapter includes:

- How This Guide Is Organized on page 8
- Who Should Read This Guide on page 8
- HP Release Control Documentation on page 8
- Additional Online Resources on page 10

How This Guide Is Organized

This guide contains the following parts:

Chapter 1 Installing and Deploying HP Release Control

Provides instructions on how to install and deploy HP Release Control.

Chapter 2 Configuring the Conversion of Requests

Describes how to convert change requests that originate in various service desk applications to generic requests that can be processed by HP Release Control.

Chapter 3 Upgrading HP Release Control

Provides instructions on how to upgrade to the latest version of HP Release Control.

Who Should Read This Guide

This guide is intended for the HP service engineers who are responsible for installing and deploying or upgrading HP Release Control.

HP Release Control Documentation

HP Release Control comes with the following documentation:

HP Release Control Deployment Guide explains how to install and deploy HP Release Control. This guide is accessible in the following formats, from the following locations:

- in PDF format on the HP Release Control DVD
- in PDF format by selecting **Help** > **HP Release Control Documentation Library** from the HP Release Control application

HP Release Control Configuration Guide explains how to configure the various parts of the HP Release Control system. This guide is accessible in the following formats, from the following locations:

- in PDF format on the HP Release Control DVD
- in both PDF format and online HTML help format by selecting **Help** > **HP Release Control Documentation Library** from the HP Release Control application
- in HTML help format, from specific HP Release Control application windows, by clicking in the window and pressing F1, or by selecting **Help** from the main menu

HP Release Control User Guide explains how to use the HP Release Control application. This guide is accessible in the following formats, from the following locations:

- in PDF format on the HP Release Control DVD
- in both PDF format and online HTML help format by selecting **Help** > **HP Release Control Documentation Library** from the HP Release Control application
- in HTML help format, from specific HP Release Control application windows, by clicking in the window and pressing F1, or by selecting **Help** from the main menu

HP Release Control API Reference explains how to work with HP Release Control's API. The API Reference is available in CHM format on the HP Release Control DVD, or from the HP Release Control application by selecting **Help** > **HP Release Control Documentation Library.**

HP Release Control Readme provides information on what's new in the current version of the product as well as comprehensive information on known problems and limitations. The Readme is available in HTML format on the HP Release Control DVD, or from the HP Release Control application by selecting **Help** > **HP Release Control Documentation Library.**

Note: Anything published in PDF format can be read and printed using Adobe Reader, which can be downloaded from the Adobe Web site (http://www.adobe.com).

Additional Online Resources

HP Software Support accesses the HP Software Support Web site. This site enables you to browse the Self-solve knowledge base. You can also post to and search user discussion forums, submit support requests, download patches and updated documentation, and more. Choose **Help** > **HP Software Support**. The URL for this Web site is www.hp.com/go/hpsoftwaresupport.

Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract.

To find more information about access levels, go to:

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http://h20229.www2.hp.com/passport-registration.html

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1

Installing and Deploying HP Release Control

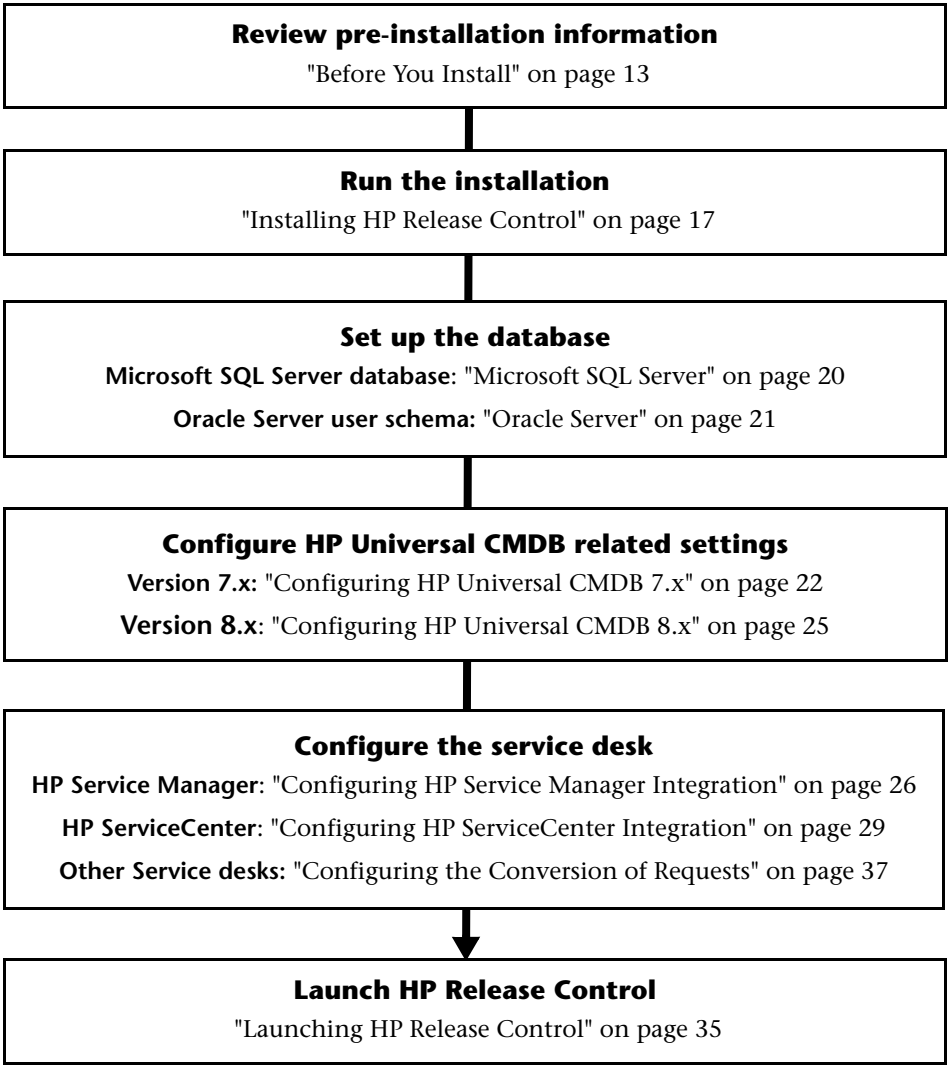
This chapter provides instructions on how to install and deploy HP Release Control.

This chapter includes:

- The Deployment Process: Basic Steps on page 12
- Before You Install on page 13
- Installing HP Release Control on page 17
- Configuring the Database or User Schema on page 19
- Configuring the HP Universal CMDB on page 22
- Configuring the Service Desk Application on page 26
- Launching HP Release Control on page 35

The Deployment Process: Basic Steps

This following diagram describes the basic steps involved in getting your HP Release Control environment up and running:



Before You Install

Before you install HP Release Control, review the information in this section, including the system requirements. This section includes:

- "Supported Service Desks" on page 13
- "System Requirements" on page 14
- "HP Release Control Data Flow" on page 16
- "System Architecture" on page 17

Supported Service Desks

The Service Desk Integration module supports the following service desk applications:

Application	Version
HP Project and Portfolio Management/ Mercury IT Governance Center	➤ 6.0 SP 14 ➤ 7.1 SP6 ➤ 7.5 SP2
HP Service Manager/Center	➤ 6.2.4 ➤ 6.2.5.1 ➤ 7.0 ➤ 7.01 with IIA ➤ 7.10 ➤ 7.11
HP Server Automation	7.1
HP Network Automation	7.0
HP Service Desk	4.5
BMC Remedy Action Request System	➤ 5.0 ➤ 7.0

System Requirements

The following table describes the system requirements for working with HP Release Control:

CPU	Intel Pentium 4
Memory (RAM)	Minimum of 2 GB
Free Disk Space	Minimum of 5 GB
Machine	➤ VMware ➤ Physical
Operating System	The following 32/64-bit Windows operating systems are supported: ➤ Windows 2003 Server Enterprise Edition Service Pack 2 ➤ Windows Server 2008
Database	➤ Microsoft SQL Server 2005 SP2; 2005 Compatibility Mode 80; (Enterprise Editions for all) ➤ Oracle 9.2.0.6, 10.2.0.x.0, 11.1.0.x
HP Universal CMDB	➤ HP Universal CMDB version 7.0x, 7.5x, 8.0x (Typical CMDB Installation) For a full list of system requirements for each of these versions, refer to the HP Universal CMDB documentation.
Browser	➤ Mozilla Firefox 3.06 ➤ Microsoft Internet Explorer 6.0, 7.0 ➤ Requires Flash Player 9 or later
Screen Resolution	➤ Minimum 1024x768 ➤ Recommended 1280x1024

Web Server Software

If you want to configure HP Release Control to work with a Web server, you need to install one of the following Web servers on the same machine as HP Release Control:

- Microsoft Internet Information Services (IIS) 5.x or 6.x
- Apache HTTP Server

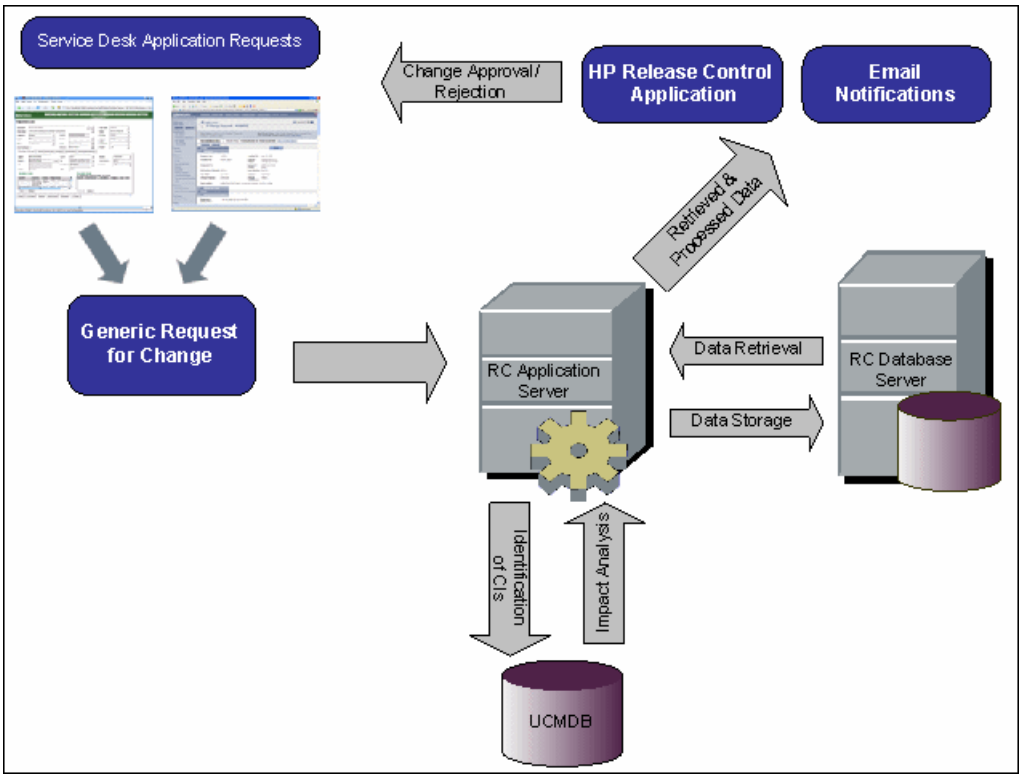
  The Apache installation is available on the HP Release Control installation disk in the **OpenSource\Apache** directory.

You can also configure HP Release Control to work without a Web server.

Note: After installation, you can use the **WebServerConfigurer** utility to select a different Web server, configure a Web server, or remove a server configuration. For more information about this utility, see the *HP Release Control Configuration Guide*.

HP Release Control Data Flow

The following diagram illustrates the data flow when running HP Release Control:



- Change requests originate in the Service Desk Application and are converted into generic requests.
- HP Release Control takes the requests and sends them to HP Universal CMDB to analyze the request and determine the relationships between configuration items (CIs).
- HP Release Control takes the data from HP Universal CMDB and performs impact analysis.
- HP Release Control further analyzes change requests, performing calculations such as risk and collision analysis.
- The information is stored on the RC Database Server.

➤ Email notifications are sent according to configuration settings to decision makers and changes are approved or rejected.

System Architecture

HP Release Control is a 3-tier application which consists of following:

➤ Flash-based (fat) client, accessed using a Web browser

➤ Application server

➤ Database server

The database server and the HP Release Control application server must sit on the same LAN.

Installing HP Release Control

You install HP Release Control using the InstallShield Wizard for HP Release Control.

To install HP Release Control:

1 Click the **setup.exe** file located in the **Setup** folder of your HP Release Control installation disk. The InstallShield Wizard for HP Release Control opens. Click **Next**.

2 Accept the terms of the software license agreement that is displayed. Click **Next**.

3 Accept the default installation directory or click **Browse** to select a different directory. Note that the directory you select cannot contain spaces. Click **Next**.

4 In the Web Server Configuration screen, select a Web server—**Microsoft IIS** or **Apache**—to be used by HP Release Control. The Web server should already be installed on your machine. If you want to work with HP Release Control without a Web server, select the **Do not use a Web server** option.

Note: After installation, you can use the **WebServerConfigurer** utility to select a different Web server, configure a Web server, or remove a server configuration. For more information about this utility, see the *HP Release Control Configuration Guide*.

- If you select **Do not use a Web server**, the Tomcat server is used, with a default port of 8080. (Note that the Tomcat server is always installed, under the name **Apache Tomcat**.)
- If you are working with HP Release Control's identity management solution, you must select a Web server to be used by HP Release Control.

Click **Next**. If you selected **Microsoft IIS**, proceed to step 5. If you selected **Apache**, proceed to step 6. If you selected **Do not use a Web server**, proceed to step 7.

5 **Perform this step if:** You selected **Microsoft IIS** in the Web Server Configuration screen.

Select the Microsoft IIS Web site under which you want to install the Microsoft IIS Web server virtual directories.

Click **Next** and proceed to step 7

6 **Perform this step if:** You selected **Apache** in the Web Server Configuration screen.

Enter the server port that is configured for Apache and the home directory of the Apache installation. Click **Next**.

7 Select the version of HP Universal CMDB that you want to use with HP Release Control. Note that only versions 7.0x and higher are officially supported. Click **Next**.

8 Ensure that the information in the summary screen is correct.

To review or change any settings, click **Back**. To accept the settings and begin installing HP Release Control, click **Next**.

9 When the installation process has successfully been completed, click **Finish** in the final InstallShield Wizard screen.

10 Continue by creating a database or user schema and configuring database connection properties as described in "Configuring the Database or User Schema" on page 19.

Configuring the Database or User Schema

To work with HP Release Control, you must create either a Microsoft SQL Server database or an Oracle Server user schema. You then configure connection properties for the HP Release Control database or user schema.

➤ To configure a Microsoft SQL Server database, see "Microsoft SQL Server" below.

➤ To configure an Oracle Server user schema, see "Oracle Server" on page 21.

Note: For MS SQL Server and Oracle Server system requirements, see "System Requirements" on page 14.

For information and guidelines about configuring and maintaining MS SQL and Oracle Server databases, see the section about database configuration and maintenance in the *HP Release Control Configuration Guide*.

Microsoft SQL Server

To configure a Microsoft SQL Server database:

1 Configure the database properties.

In the <**HP Release Control installation directory**>**conf****database.properties** file, configure the following properties:

- **hibernate.connection.url.** Specify the connection URL of the JTDS MSSQL. Include a valid MS SQL server name and database name.

  For example:

```
jdbc:mercury:sqlserver://
labm3ccmdb01.devlab.ad:1433;DatabaseName=rc_database_412;sendStringParametersAsUnicode=false
```

  For details about configuring the URL format, see http://jtds.sourceforge.net/faq.html#urlFormat

- **hibernate.connection.username.** Specify the user name required to connect to the MS SQL Server database.
- **hibernate.connection.password.** Specify the password required to connect to the MS SQL Server database. If the password must be encrypted, see the section about password encryption in the *HP Release Control Configuration Guide*.

Note: If you are in the middle of the upgrade procedure, continue with step 6 on page 79.

---

2 Change the command line directory to <**HP Release Control installation directory**>**bin** and run the following command:

```
Populate.bat i
```

3 Continue by configuring the HP Universal CMDB as described in "Configuring the HP Universal CMDB" on page 22.

Oracle Server

To configure an Oracle Server user schema:

1 Configure the database properties.

After you have created an Oracle Server user schema, copy the contents of the file **database.properties.oracle9i** or **database.properties.oracle10g** (depending on your database version) located in **<HP Release Control installation directory>\examples\database-config-examples** directory to the **<HP Release Control installation directory>\conf\database.properties** file and configure the following properties:

- **hibernate.connection.url.** Specify the connection URL of the Oracle native driver. Include a valid Oracle server name and SID. Alternatively, if you are using **Oracle RAC**, specify the Oracle RAC configuration details.
- **hibernate.connection.username.** Specify the user name required to connect to the Oracle Server user schema.
- **hibernate.connection.password.** Specify the password required to connect to the Oracle Server user schema. If the password must be encrypted, see the section about password encryption in the *HP Release Control Configuration Guide*.

Note: If you are in the middle of the upgrade procedure, continue with step 6 on page 79.

---

2 Change the command line directory to **<HP Release Control installation directory>\bin** and run the following command:

```
Populate.bat i
```

3 Continue by configuring the HP Universal CMDB as described in "Configuring the HP Universal CMDB" on page 22.

Configuring the HP Universal CMDB

The configuration of the HP Universal CMDB differs depending on which version you are using:

➤ **For version 7.x**, see "Configuring HP Universal CMDB 7.x" below.

➤ **For version 8.x**, see "Configuring HP Universal CMDB 8.x" on page 25.

If you are working without HP Universal CMDB (Standalone mode), see the section about working in standalone mode in the *HP Release Control Configuration Guide*.

For information on optional HP Universal CMDB configuration settings, see the section about advanced HP Universal CMDB configuration in the *HP Release Control Configuration Guide*.

Configuring HP Universal CMDB 7.x

This section contains mandatory configuration settings for configuring HP Release Control interaction with HP Universal CMDB 7.x.

To configure the HP Universal CMDB 7.x:

1 Deploy the ccm_package.zip file in the HP Universal CMDB.

The **ccm_package.zip** file is located in the **<HP Release Control installation directory>\conf\uCmdb-<HP Universal CMDB version>-extensions** folder. For more information about deploying packages, see the HP Universal CMDB documentation.

2 Configure HP Universal CMDB server properties in HP Release Control:

a Open the **<HP Release Control installation directory>\conf\mam-integration.settings** file.

b Specify the following properties in the **<mam-connection>** section:

Property	Description
mam-server	The name of the HP Universal CMDB server to which HP Release Control should connect.
port	The port through which HP Release Control should connect to HP Universal CMDB.
locator	If you are using a distributed configuration, you must set the locator tag. It can be defined as either **RMI**, **HTTP**, or **HTTPS**. The default value is **RMI**. We recommend that you set the locator tag to be the same as the strategy tag.

c Save your settings and close the **mam-integration.settings** file.

3 Import HP Release Control Business CIs from HP Universal CMDB.

In order to work with business CIs from HP Universal CMDB, they must be imported into HP Release Control. This can be done by importing all business CIs from HP Universal CMDB or selecting them individually. Importing all business CIs is easier to configure and requires less planning. However, it consumes system resources, and once business CIs are imported to HP Release Control, they cannot be removed.

To import all business CIs from HP Universal CMDB:

a Open the **<HP Release Control installation directory>\conf\mam-integration.settings** file.

b Locate the **<applications>** tag. In the **<applications-view>** **<name>** section, type the name **AllApplicationsCIs**. This is the name of the view in HP Universal CMDB that includes all business CI's (comes with the package you deployed above).

c Locate the <**HP Release Control installation directory**> **\conf\mam-integration.settings** file. Locate the <**applications-view**> section and enter the name of the HP Release Control view you created in HP Universal CMDB, as follows:

```
<applications>
    <applications-view>
     <name>[view name]</name>
    </applications-view>
</applications>
```

For more information about HP Universal CMDB views, refer to the HP Universal CMDB documentation.

To import only selected business CIs from HP Universal CMDB:

a Open HP Universal CMDB.

b Put the desired business CI in the **CCMApplications** view, or you can specify a custom view as follows:

c Locate the <**HP Release Control installation directory**> **\conf\mam-integration.settings** file. Locate the <**applications-view**> section and enter the name of the HP Release Control view you created in HP Universal CMDB, as follows:

```
<applications>
    <applications-view>
     <name>[view name]</name>
    </applications-view>
</applications>
```

For more information about HP Universal CMDB views, refer to the HP Universal CMDB documentation.

4 Configure the service desk.

Continue by configuring your service desk as described in "Configuring the Service Desk Application" on page 26.

Configuring HP Universal CMDB 8.x

This section contains mandatory configuration settings for configuring HP Release Control interaction with HP Universal CMDB 8.x.

To configure the HP Universal CMDB 8.x:

1 Deploy the ccm_package.zip file in the HP Universal CMDB.

The **ccm_package.zip** file is located in the **<HP Release Control installation directory>\conf\uCmdb-<HP Universal CMDB version>-extensions** folder. For more information about deploying packages, see the HP Universal CMDB documentation.

2 Configure HP Universal CMDB properties in HP Release Control:

a Open the **<HP Release Control installation directory>\conf\mam-integration.settings** file.

b Specify the following properties in the **<mam-connection>** section:

Property	Description
mam-server	The name of the HP Universal CMDB server to which HP Release Control should connect.
port	The port through which HP Release Control should connect to HP Universal CMDB.
username	The user name required to connect to HP Universal CMDB.
password	The password required to connect to HP Universal CMDB. If the password must be encrypted, see the section about password encryption in the *HP Release Control Configuration Guide*.
locator	If you are using a distributed configuration, you must set the locator tag. It can be defined as either **RMI**, **HTTP**, or **HTTPS**. The default value is **RMI**. We recommend that you set the locator tag to be the same as the strategy tag.

3 Configure the service desk.

Continue by configuring your service desk as described in "Configuring the Service Desk Application" on page 26.

Configuring the Service Desk Application

The configuration of your service desk differs depending on which service desk you are using:

- To configure **HP Service Manager**, see "Configuring HP Service Manager Integration" on page 26.
- To configure **HP ServiceCenter**, see "Configuring HP ServiceCenter Integration" on page 29.
- To configure **all service desks except HP Service Manager/Center**, see Chapter 2, "Configuring the Conversion of Requests." After you have configured the service desk application, you can launch HP Release Control as described in "Launching HP Release Control" on page 35.

Configuring HP Service Manager Integration

This section describes how to configure HP Service Manager as your service desk.

To configure HP Service Manager integration:

1 Verify the following information, which you will need during this configuration process:

- What is the HP Service Manager version?
- For **versions of HP Service Manager earlier than 7.10:** Is IIA (ITSM Implementation Accelerator) content enabled in HP Service Manager?
- Is HP's Lightweight Single Sign On (LW-SSO) used?
- What is the HP Service Manager user name, password, time zone, host name, and port?
- What is the URL suffix for the HP Service Manager WSDL file (by default, sc62server/PWS)?

2. If it is running, stop the HP Release Control service (**Start** > **Programs** > **HP Release Control 4.12** > **Stop Service RC 4.12**).
3. In the HP Service Manager Client (Eclipse Client), go to **System Definition** > **Tables** > **cm3r**. Add the fields **implementationEnd** and **implementationStart**. Set the Data type to **Date/time**.
4. **If you are using a version of HP Service Manager earlier than 7.10, and IIA content is not enabled:** In the HP Service Manager Client, go to **System Definition** > **Tables** > **cm3t**. Add the fields **actualEnd** and **actualStart**. Set the Data type to **Date/time**.
5. Load the HP Release Control unload files as follows:
   a. In the HP Service Manager Client, select the Database Manager.
   b. Select the **Import/Load** option from the drop-down menu.
   c. Load the relevant HP Service Manager files from **<HP Release Control installation directory>\example\service-desk-examples\ ServiceManager\<relevant HP Service Manager version>\unload-files**.

   Caution: If you are using HP Service Manager 7.11 (webtier), the **SMRC1.2_Demo_v6.22.unl** unload file may overwrite previous menu and format customizations. This file enables you to access HP Release Control interfaces, such as the change calendar, directly from HP Service Manager 7.11.

   If you prefer to manually perform the steps carried out by this unload file, instead of loading it, see "Appendix: Manual Steps for SMRC1.2_Demo_v6.22.unl" on page 117.

   ---

   d. For each file, click **Load FG**.
6. **If you are using HP Service Manager 7.11 (webtier):** Copy the contents of **<HP Release Control installation directory>\example\ service-desk-examples\ServiceManager\service-manager-711\webtier\images\obj16** to the corresponding HP Service Manager webtier directory.

7 Configure the HP Release Control server URL in HP Service Manager:

a In HP Service Manager, go to **System Administration** > **Base System Configuration** > **Miscellaneous** > **System Information Record**.

b In the **Active Integrations tab**, select **HP Release Control**.

c In the Server URL box, enter the URL of the HP Release Control server. For example:

```
http://server:8080/ccm
```

8 (Optional) As part of the **SdiConfigurer.bat** utility you will run in the next step, certain HP Service Manager fields will be automatically mapped to HP Release Control fields. If you want to map any additional fields, expose these fields now in the HP Service Manager **ChangeRC/ ChangeTaskRC** External Access object. In step 10, you will map these fields in the conversion scripts.

9 From the command line, run the following command:

```
<HP Release Control installation directory>\bin\SdiConfigurer.bat
```

Answer the questions as they are asked. The default answer for each of the questions appears in square brackets at the end of the question. If you press ENTER without typing in a selection, the default entry is automatically selected.

Type your selections and press ENTER.

10 If you exposed additional fields in step 8, map these fields in the relevant conversion scripts that were created in the **<HP Release Control installation directory\bin\result** directory. For more information about working with conversion scripts, see "Writing the Conversion Scripts" on page 73.

11 From the **<HP Release Control installation directory\bin\result** directory, copy the **conf** and **tomcat** folders and overwrite the existing **conf** and **tomcat** folders in the HP Release Control installation root directory. When asked whether you want to overwrite certain files, click **Yes to all**.

12 Users who will access HP Service Manager from HP Release Control need to have **SOAP API Execute Capabilities** enabled. In HP Service Manager, ensure that this option is enabled for the relevant operators.

13 To launch HP Release Control, see "Launching HP Release Control" on page 35.

Note: For information about advanced HP Service Manager integration options, such as creating links to HP Service Manager tickets from HP Release Control, see the *HP Release Control Configuration Guide*.

Configuring HP ServiceCenter Integration

This section describes how to configure HP Service Manager as your service desk.

To configure HP ServiceCenter integration:

1 Verify the following information, which you will need during this configuration process:

- ➤ What is the HP ServiceCenter version?
- ➤ Is HP's Lightweight Single Sign On (LW-SSO) used?
- ➤ What is the HP ServiceCenter user name, password, time zone, host name, and port?
- ➤ What is the URL suffix for the HP ServiceCenter WSDL file?

2 If it is running, stop the HP Release Control service (**Start** > **Programs** > **HP Release Control 4.12** > **Stop Service RC 4.12**).

3 In the HP ServiceCenter Client (Eclipse Client), go to **System Definition** > **Tables** > **cm3r**. Add the fields **implementationEnd** and **implementationStart**. Set the Data type to **Date/time** and check the **Include in API** box.

4 In the HP ServiceCenter Client, go to **System Definition**>**Tables**>**cm3t**. Add the fields **actualEnd** and **actualStart**. Set the Data type to **Date/time** and check the **Include in API** box.

5 Expose the relevant HP ServiceCenter change fields.

a In HP ServiceCenter, select **Menu Navigation** > **Toolkit** > **WSDL Configuration**.

b In the **name** box, type cm3r and press ENTER.

c In the Data Policy tab, ensure that the following fields with the appropriate properties are included in the list of exposed fields:

Field Name	API Caption	Exclude	API Data Type
approval.structure,approvals.required	ApprovalsRequired	false	
approval.structure,approved.groups	ApprovedGroups	false	
approval.structure,current.pending.groups	CurrentPendingGroups	false	
header,orig.date.entered	OrigDateEntered	false	
implementationEnd	ImplementationEnd	false	DateTimeType
implementationStart	ImplementationStart	false	DateTimeType
sysmodtime	sysmodtime	false	

d Click **Save**.

6 Expose the relevant HP ServiceCenter task fields.

a In HP ServiceCenter, select **Menu Navigation** > **Toolkit** > **WSDL Configuration**.

b In the **name** box, type cm3t and press ENTER.

c In the Data Policy tab, ensure that the following fields with the appropriate properties are included in the list of exposed fields:

Field Name	API Caption	Exclude	API Data Type
actualEnd	ActualEnd	false	DateTimeType
actualStart	ActualStart	false	DateTimeType
approval.structure,approvals.required	ApprovalsRequired	false	
approval.structure,approved.groups	ApprovedGroups	false	
approval.structure,current.pending.groups	CurrentPendingGroups	false	
header,approval.status	ApprovalStatus	false	
header,orig.date.entered	OrigDateEntered	false	
header,priority.code	Priority	false	
header,risk.assessment	RiskAssessment	false	
middle,asset	Asset	false	
sysmodtime	sysmodtime	false	

d Click **Save**.

7 Restart HP ServiceCenter

8 Load the HP Release Control unload files as follows:

a In the HP ServiceCenter Client, select the **Database Manager**.

b Select the **Import/Load** option from the drop-down menu.

c Load the relevant HP ServiceCenter file from **<HP Release Control installation directory>\examples\service-desk-examples\ServiceCenter\<relevant HP ServiceCenter directory>\unload-files**.

d Click **Load FG**.

When you deploy this unload file, the **ccm.check.retract** and **ccm.check.approval** processes are created in HP ServiceCenter.

9 Associate a display action with each of the two new processes, **ccm.check.approval** and **ccm.check.retract**:

a Open the Document Engine in HP ServiceCenter by navigating to **Menu navigation** > **Utilities** > **Tools** > **Document Engine.**

b In the **Objects** menu, in the **File Name** box, type **cm3r**.

c In the **Object Info** tab, next to the **Default State** box, click the **Find** button and add the following values to the table.

Display Action	Process Name	Condition
checkapproval	ccm.check.approval	true
checkretract	ccm.check.retract	true

d Click **Save**.

10 In WSDL Configuration, add the approval and retraction actions.

The following procedure should be carried out twice: Once for cm3r records and once for cm3t records.

a Open the WSDL Configuration tool in HP ServiceCenter by navigating to **Menu navigation** > **Toolkit** > **WSDL Configuration.**

b In the **Name** box, type the record name:

- for cm3r records, type cm3r.
- for cm3t records, type cm3t.

c Add the following actions in the **Allowed Actions** tab:

Allowed Action	Action Name
checkapproval	CanApprove
checkretract	CanRetract

d Click **OK**.

Note: In HP Release Control, assign the role of **Change Approver** to the users who are meant to approve requests. For details, see the section about configuring user settings in the *HP Release Control Configuration Guide*.

---

11 (Optional) As part of the **SdiConfigurer.bat** utility you will run in the next step, certain HP ServiceCenter fields will be automatically mapped to HP Release Control fields. If you want to map any additional fields, expose these fields now in the HP ServiceCenter **Change/ChangeTask** External Access object. In step 13, you will map these fields in the conversion scripts

12 From the command line, run the following command:

```
<HP Release Control installation directory>\bin\SdiConfigurer.bat
```

Answer the questions as they are asked. The default answer for each of the questions appears in square brackets at the end of the question. If you press ENTER without typing in a selection, the default entry is automatically selected.

Type your selections and press ENTER.

13 If you exposed additional fields in step 11, map these fields in the relevant conversion scripts that were created in the **<HP Release Control installation directory\bin\result** directory. For more information about working with conversion scripts, see "Writing the Conversion Scripts" on page 73.

14 From the <**HP Release Control installation directory\bin\result** directory, copy the **conf** and **tomcat** folders and overwrite the existing **conf** and **tomcat** folders in the HP Release Control installation root directory. When asked whether you want to overwrite certain files, click **Yes to all**.

15 Users who will access HP ServiceCenter from HP Release Control need to have **SOAP API Execute Capabilities** enabled. In HP ServiceCenter, ensure that this option is enabled for the relevant operators.

16 To launch HP Release Control, see "Launching HP Release Control" on page 35.

Note: For information about advanced HP ServiceCenter integration options, such as creating links to HP ServiceCenter tickets from HP Release Control, see the *HP Release Control Configuration Guide*.

Launching HP Release Control

This section describes how to launch HP Release Control after you have set up your environment.

To launch HP Release Control:

1. If you are using an Apache Web server, restart your Web server.
2. Start the HP Release Control service (**Start** > **Programs** > **HP Release Control 4.12** > **Start Service RC 4.12**).
3. Enter the appropriate URL to access HP Release Control (depends on the user authentication mode you are using). For example:

```
http://server:8080/ccm
```

4. Log in to HP Release Control with the user name **admin** and the password **admin**. Ensure that you change this password once you log in. For details on changing your password and creating HP Release Control users, see the section about configuring users in the *HP Release Control Configuration Guide*.

Note: If you are working with HP Release Control's identity management solution, see the section about user authentication in the *HP Release Control Configuration Guide* for details on adding an administrator and users to HP Release Control.

2

Configuring the Conversion of Requests

This chapter describes how to convert change requests that originate in various service desk applications to generic requests that can be processed by HP Release Control. It also describes how to customize HP Release Control fields.

This chapter includes:

- Customizing HP Release Control Fields on page 38
- About Converting Requests on page 40
- Overview of Adapter Configuration on page 41
- Location and Naming Conventions of Service Desk Integration Files on page 42
- Configuring the Common Adapter Attributes on page 43
- Configuring the Connector Attributes on page 50
- Configuring the Converter Attributes on page 72
- Writing the Conversion Scripts on page 73

Customizing HP Release Control Fields

Before you can begin converting service desk application requests to HP Release Control requests, you must define the fields you want to include in your HP Release Control requests. These include both standard ITIL, predefined fields and customized fields, which you define in the Fields tab of the HP Release Control application's Administration module. For details on customizing fields, see the section about configuring change request fields settings in the *HP Release Control Configuration Guide*.

In addition, you must define the enumeration fields to be used by HP Release Control in the **<HP Release Control installation directory>\conf\enumerations.settings** file. The **enumerations.settings** file contains a default list of the following:

- status levels
- priority levels
- request (parent/child) levels
- severity levels
- estimated risk levels
- voting options
- request types (a classification of requests that assists HP Release Control in matching actual changes in your environment with scheduled changes)
- action item priority levels

The numeric values determine the order in which the enumeration levels are displayed in the HP Release Control application. You can modify all of the settings in this file as required, except for the request level settings. For example, if you want HP Release Control to use the status **Completed** instead of **Closed**, you would change the following:

```
<entry>
    <name>CLOSED</name>
    <value>4</value>
</entry>
```

to:

```
<entry>
    <name>COMPLETED</name>
    <value>4</value>
</entry>
```

Notes:

- After the HP Release Control server is launched, an **<id>** element is added to each enumeration entry. This element should not be modified or removed.

  If you add or modify an enumeration setting, you must configure the way in which the enumeration setting is displayed in the HP Release Control application. You do so within the **<HP Release Control installation directory>\conf\enumeration-labels.properties** file. For details on configuring the **enumeration-labels.properties** file, see the section about configuring enumeration field display settings in the *HP Release Control Configuration Guide*. If you do not configure the way in which the enumeration setting is displayed, a warning message is recorded in the HP Release Control log files.

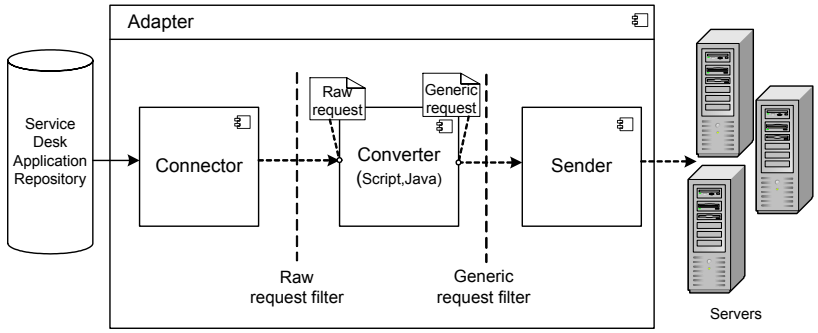
- If you modify an enumeration setting, all the conversion scripts that refer to this enumeration setting must be modified accordingly. For details on referring to enumeration settings within conversion scripts, see "Writing the Conversion Scripts" on page 73. If you modify the way in which the enumeration setting is displayed in the HP Release Control application, you need not modify your conversion scripts.

- If you add or modify a severity enumeration setting, you must modify the corresponding severity enumeration setting in the **<HP Release Control installation directory>\conf\mam-integration.settings** file. For details on configuring the impact severity level settings in the **mam-integration.settings** file, see the section about mapping impact severity levels in the *HP Release Control Configuration Guide*.

About Converting Requests

Change requests are converted from their service desk application formats to a generic format using service desk application-specific adapters. The generic requests are then transferred to the HP Release Control server.

The following diagram illustrates the service desk application request conversion process performed by the Service Desk Integration module:



Each service desk application-specific adapter contains two single-level adapters—one to convert top-level changes, and the other to convert second-level changes. As shown above, each single-level adapter contains the following three subcomponents:

- **Connector**. Collects new top-level/second-level change requests from the service desk applications.
- **Converter**. Converts the top-level/second-level change requests from their service desk application formats to a generic format that HP Release Control can recognize.
- **Sender**. Receives the ticket from the converter and sends it to the server.

Each single-level adapter also contains a **pre-conversion filter** and a **post-conversion filter**. Using these filters, you can control which requests are sent to the HP Release Control server. The pre-conversion filter filters requests before they are converted to a generic format, while the post-conversion filter filters requests after conversion, but before they are transferred to the HP Release Control server.

Overview of Adapter Configuration

To convert service desk application requests, you must configure the appropriate adapter for each service desk application.

To configure an adapter, you must:

- Set up the adapter configuration file
- Write the conversion scripts to be used by the adapter

Notes:

- You can configure more than one adapter per service desk application. This enables you to import requests from several servers of the same service desk application. This does not work when combining HP ServiceCenter and HP Service Manager.
- If you are using HP Service Manager/Center, the adapter configuration is performed automatically when you run the **sdiConfigurer** utility.

Adapter Configuration File

The adapter configuration file is an XML file that contains the following:

- The adapter attributes, such as the adapter name, the name of the service desk application in which the requests were created, the number of requests to be processed at one time, the frequency with which the adapter polls the service desk application, and the request types to be converted.

  For details on configuring the adapter attributes, see "Configuring the Common Adapter Attributes" on page 43.

- The connector attributes, which enable the adapter to connect to the service desk application. You specify the connector attributes separately for each single-level adapter—that is, for each request type included in the adapter configuration file.

  For details on configuring the connector attributes, see "Configuring the Connector Attributes" on page 50.

- The converter attributes, which call the conversion script files where the field mapping and filter functions are defined. The converter attributes differ for each single-level adapter.

For details on configuring the converter attributes, see "Configuring the Converter Attributes" on page 72.

Conversion Scripts

Conversion scripts are called by the adapter and are responsible for the actual conversion of change requests from their service desk application format to a generic format.

Each script must contain certain functions. For a detailed list and explanation of these functions, see "Writing the Conversion Scripts" on page 73.

Location and Naming Conventions of Service Desk Integration Files

The Service Desk Integration files are located in the subdirectories within the **<HP Release Control installation directory>\examples\service-desk-examples** directory. These subdirectories contain the following:

- A configuration file for each adapter. This file must have a **.settings** extension. In addition, it is recommended that the name of the configuration file be identical to the name defined for the adapter within the configuration file, as follows:

```
<adapter name>.settings
```

  For example, if the name defined for the adapter is **servicemanager-adapter**, the configuration file name should be **servicemanager-adapter.settings**.

- A subdirectory for each adapter configuration file. The subdirectory holds the conversion scripts responsible for the actual conversion of requests from their service desk application format to a generic format.

The name of the subdirectory must be identical to the name defined for the adapter in the configuration file and must have a **.ext** extension, as follows:

```
<adapter name>.ext
```

Following the example above, there must be a subdirectory called **servicemanager-adapter.ext** to hold all the conversion script files for the HP Service Manager adapter.

After you have properly named the adapter configuration file and subdirectory, you must copy both of these entities to the <**HP Release Control installation directory**>**conf** directory.

Configuring the Common Adapter Attributes

The top section of the adapter configuration file contains the following adapter attributes, which are common to all service desk applications:

Property Name	Description	Default Value
adapter-name (mandatory)	A logical name that represents the adapter's name within the HP Release Control system. For example: servicemanager-adapter **Note:** This name is also used for the scripts (**.ext**) directory, as explained in "Location and Naming Conventions of Service Desk Integration Files" on page 42. In addition, this name is used to identify the adapter in the log files.	—

Property Name	Description	Default Value
version (mandatory)	The version of the adapter, which is identical to the version of HP Release Control that you are using. **Note:** This property should not be modified.	—
service-desk-application (mandatory)	A unique, logical name for the service desk system that you are using. This can be any name you select. For example: Service Manager **Note:** This is the name that will be used for the service desk within the HP Release Control application.	—
connection-properties	Lists the common properties for request-type levels 1 and 2 so that these properties do not have to be duplicated.	—

Property Name	Description	Default Value
number-of-tickets	Sets the number of requests that are processed at a time, ensuring that HP Release Control and service desk application resources, such as memory and network bandwidth, are not over-used. The **number-of-tickets** can be as high as required, although you should be careful not to overload HP Release Control or your service desk application. It must be high enough to retrieve all requests from the service desk application and must exceed the expected number of requests that the service desk application updates in one measurement time slot. For example, if the service desk application updates 50 requests in one second, the **number-of-tickets** must exceed 50. In processing requests, HP Release Control attempts to use the **number-of-tickets**, but may return more or fewer requests from the service desk application. **Note:** To determine the **number-of-tickets**, consult with the people responsible for the service desk applications within your organization.	**50**

Property Name	Description	Default Value
polling-schedules	A list of cron expressions separated by the new line character. Format: 30 * * * * <new line> 0 * * * * For more information about cron expressions, see http://www.opensymphony.com/quartz/api/org/quartz/CronTrigger.html	—
polling-frequency	The frequency (in seconds) with which the service desk application is polled for change requests.	If **polling-schedules** and **polling-frequency** are undefined, then the default is **30 seconds**.
initial-load-state	If you specify a string date, the adapter collects all requests from the specified creation date through the current date, at one time and does not continue to collect new or updated requests. Format: MM/dd/yy HH:mm:ss z	**null**

Property Name	Description	Default Value
request-types (mandatory)	Lists all request types that the adapter collects, including all request type levels. By default, level 1 is used for changes and level 2 is used for tasks. (For details on configuring request type levels, see "Customizing HP Release Control Fields" on page 38.) For an explanation of the request type properties and operation properties to be included as part of the <**request-type**> element, see "Request Type Properties" on page 48.	—
sender	Specifies where requests should be sent. In the <**sender**> section, you specify where requests should be sent by setting the <**sender-type**> element to one of the following values: ➤ **sender.** Requests are sent to the HP Release Control server. ➤ **xmlSender.** Requests are sent to XML files (used for debugging) rather than the HP Release Control server.	**sender**

Request Type Properties

The <**request-type**> element includes the following properties:

Property Name	Description	Default Value
connection-properties	Lists the common properties for polling and operation connectors so that these properties do not have to be duplicated.	—
connector (under polling-operation) (mandatory)	Includes the **connector-type** and connector **properties**. To configure the **connector-type** and its **properties**, refer to the documentation for the specific service desk application (see "Configuring the Connector Attributes" on page 50).	—
converter (under polling-operation) (mandatory)	Includes the **converter-type** and converter **properties**. The converter properties are defined within a script.	—

The **<operation>** element (under **<operations>** within **<request-type>**) includes the following operation properties:

Property Name	Description	Default Value
name (mandatory)	The operation name to be used in locating the operation. The following operations are currently supported: canApprove, approve, canRetract, retract, canUpdateReview, review, canUpdatePlannedTimes, updatePlannedTimes, canUpdateStatus, updateStatus, canClose, close. For details on these operations, see the section about updating service desk data from HP Release Control in the *HP Release Control Configuration Guide*.	—
operation-type (mandatory)	Defines the type of operation to be performed.	—
connector (under operation) (mandatory)	Defines the operation connector to be used for the execution of the operation.	—
sender-properties	Overrides the default properties that are used when initializing a sender for the operation.	—

Note: For examples of **<request-type>** configuration, see the **.settings** files within the subdirectories of the **<HP Release Control installation directory>\examples\service-desk-examples** directory.

Configuring the Connector Attributes

The connector attributes, which enable the adapter to connect to the service desk application, differ according to the service desk application from which you are converting requests.

Note: You must specify the connector attributes separately for each request type included in the adapter configuration file.

This section describes:

- "BMC Remedy Action Request System Connector Settings" below
- "XML Connector Settings" on page 53
- "HP Service Manager/Center Connector Settings" on page 54
- "HP Service Desk Connector Settings" on page 58
- "HP Project and Portfolio Management/ IT Governance Center Web Services Connector Settings" on page 59
- "HP Server Automation Connector Settings" on page 62
- "HP Network Automation Connector Settings" on page 63
- "Database Connector Settings" on page 64
- "Oracle Database Connector Settings" on page 69

BMC Remedy Action Request System Connector Settings

To connect to the BMC Remedy Action Request System service desk application, you must first ensure that certain BMC Remedy Action Request System files are accessible to the HP Release Control server.

If you are working with BMC Remedy ARS 5.0:

1 Copy **arapi50.jar** and **arutil50.jar** from the BMC Remedy Action Request System installation directory to the **<Tomcat server installation directory>\common\lib** directory.

2 Copy **arapi50.dll**, **arjni50.dll**, **arrpc50.dll**, and **arutl50.dll** from the BMC Remedy Action Request System installation directory to the **<HP Release Control installation directory>\tomcat\webapps\cccm\WEB-INF\os_lib\win32** directory on the HP Release Control server machine.

If you are working with BMC Remedy ARS 7.0:

1 Copy **arapi70.jar** and **arutil70.jar** from the BMC Remedy Action Request System installation directory to the **<Tomcat server installation directory>\common\lib** directory.

2 Copy all the Windows library files (*.dll) from the BMC Remedy Action Request System installation directory to the **<HP Release Control installation directory>\tomcat\webapps\cccm\WEB-INF\os_lib\win32** directory on the HP Release Control server machine.

The following connector attributes must then be configured in the BMC Remedy Action Request System adapter configuration file. By default, the files are **remedy-adapter.settings** for BMC Remedy ARS 5.0 and **remedy7-adapter.settings** for BMC Remedy ARS 7.0:

Property Name	Description	Default Value
connector-type (mandatory)	The logical name of the adapter. This must be set to remedy.	—
serverName (mandatory)	The name of the BMC Remedy Action Request System server.	—
serverTcpPort	The TCP port of the BMC Remedy Action Request System server.	**0**
serverRpcNum	The RPC number of the BMC Remedy Action Request System server.	**0**
userName (mandatory)	The user name with which HP Release Control connects to the BMC Remedy Action Request System server.	—

Property Name	Description	Default Value
userPassword (mandatory)	The password with which HP Release Control connects to the BMC Remedy Action Request System server. Note that the password should be encrypted. For details, see the section about encrypting passwords in the *HP Release Control Configuration Guide*.	—
schemaName (mandatory)	The name of the schema containing the required change requests.	—
field-names (mandatory)	A comma-separated list of request fields to retrieve. Use ***** to collect all request fields.	—
associationSchemaName	The schema that associates the CIs to the tickets in the BMC Remedy ARS server.	—
idFieldNameInTicket	The name of the column that contains the ticket ID to be used in the association schema.	—
associationForeignIdFieldName	The name of the column that contains the foreign ID of the CIs in the association schema.	—
associationResultFieldName	The field name of the ticket (in the Raw Ticket) to contain the array of associated CIs from the association schema.	—

XML Connector Settings

To view an example of XML adapter settings and the XML file structure go to the **<HP Release Control installation directory>\examples\service-desk-examples\Sample\Demo-Excel-XML\conf** directory.

The following XML connector attributes must be configured in the XML adapter configuration file (by default, **demo-xml-adapter.settings**:

Property Name	Description	Default Value
connector-type (mandatory)	This must be set to: xmlFolderWatcher	—
idPropertyName (mandatory)	The property name of the request's ID in each XML file to which service desk application requests are sent.	—
creationDatePropertyName (mandatory)	The property name of the request's **creation-date** value in the XML file. If the **creation-date** is an XML element, use the element's name. For example, you would use the property name **creation-date** for the following: <change-request> <creation-date>01/01/01</creation-date> </change-request> If the **creation-date** is an attribute of the request's XML element, use **@<element name>**. For example, you would use the property name **@creation-date** for the following: <change-request creation-date="01/01/01"> </change-request>	—

Property Name	Description	Default Value
dateFormat (mandatory)	The format of the **creation-date** value in the XML file.	—
directoryName (mandatory)	The path of the shared directory in which the service desk application requests are placed in XML file format.	—
pattern	The file name pattern as a regular expression. For more details, see http://java.sun.com/j2se/1.4.2/docs/api/java/util/regex/Pattern.html	No pattern - all files will be read.

Note: Ensure that the HP Release Control user has read permissions to the directory in which the service desk application requests are placed in XML file format.

HP Service Manager/Center Connector Settings

Caution: You configure HP Service Manager/Center settings using the **SdiConfigurer.bat** utility. For more information, see "Configuring the Service Desk Application" on page 26. If you need to make manual configuration changes, refer to the information in this section.

The following section contains HP Service Manager/Center connector attributes that can be manually configured in the HP Service Manager/Center adapter configuration file (<**HP Release Control installation directory**>**conf****servicemanager-ws-adapter.settings**):

Property Name	Description	Default Value
connector-type (mandatory)	For top-level requests, this is set to ServiceCenterChange if you are working with HP ServiceCenter, and ServiceManagerChange if you are working with HP Service Manager. For second-level requests, this is set to ServiceCenterTask if you are working with HP ServiceCenter, and ServiceManagerTask if you are working with HP Service Manager.	—
idProperty	The property name of the ID field in the instance returned from the HP Service Manager/Center Web service.	—
lastUpdatedPropertyForQuery	The property name of the **last-update** field used to query the HP Service Manager/Center Web service (the field name used in an expert search on the HP Service Manager/Center client machine).	—
creationDatePropertyForQuery	The property name of the **creation-date** field used to query the HP Service Manager/Center Web service.	—
lastUpdatedPropertyForResult	The property name of the **last-update** field in the instance returned from the HP Service Manager/Center Web service (usually the field name exposed as API).	—

Property Name	Description	Default Value
creationDatePropertyForResult	The property name of the **creation-date** field in the instance returned from the HP Service Manager/Center Web service.	—
keyMethodName	The name of the method for request keys (usually the ID field name).	—
timeZone	The HP Service Manager/Center server time zone, used for converting the last updated time of a request from HP Service Manager. **Note:** To handle Daylight Savings Time, use an area time zone instead of specifying a time relative to GMT.	—
wsDateFormatPattern	The date format used in the HP Service Manager/Center Web service answer. For available formats, see: http://java.sun.com/j2se/1.4.2/docs/api/java/text/SimpleDateFormat.html	—
queryDateFormatPattern	The date format used for querying the HP Service Manager/Center system (as used in the UI expert search). For available formats, see: http://java.sun.com/j2se/1.4.2/docs/api/java/text/SimpleDateFormat.html	—
serviceUrl	The Web service URL.	—
userName	The user name with which HP Release Control connects to the HP Service Manager/Center system.	—

Property Name	Description	Default Value
password	The password with which HP Release Control connects to the HP Service Manager/Center system. **Note:** The password should be encrypted. For details, see the section about encrypting passwords in the *HP Release Control Configuration Guide*.	—
workingBulkAllowedDeviation (optional)	The permitted percentage of deviation from the specified working bulk (number of tickets imported from the service desk).	20
additionalConstraintsFor InitialLoad (optional)	An additional filter criteria to allow more flexibility in what changes are fetched in initial load. The syntax for this constraint is the same as the one used by HP Service Manager's Expert Search. **Note:** This is implemented by appending a **& (<constraint>)** to the HP Service Manager/Center query.	
additionalConstraintsForPolling (optional)	An additional filter criteria to allow more flexibility in what changes are fetched in the polling mode. The syntax for this constraint is the same as the one used by HP Service Manager/Center's Expert Search. **Note:** This is implemented by appending a **& (<constraint>)** to the HP Service Manager/Center query.	

HP Service Desk Connector Settings

Caution: To set up the integration with HP Service Desk, copy the **web-api.jar** file from the HP Service Desk **servicepages\webapps\sd-sp45\WEB-INF\lib** directory and paste it into the <**HP Release Control installation directory**>**\tomcat\webapps\ccm\WEB-INF\lib** directory.

The following HP Service Desk connector attributes must be configured in the HP Service Desk adapter configuration file (by default, **hpsd-adapter.settings**):

Property Name	Description	Default Value
connector-type (mandatory)	For top-level requests, this must be set to: hpsdChange For second-level requests, this must be set to: hpsdWorkOrder	—
idProperty (mandatory)	The property name of the ID field in the instance returned from HP Service Desk.	—
lastUpdatedProperty (mandatory)	The property name of the **last-update** field.	—
createdProperty (mandatory)	The property name of the **creation-date** field.	—
serviceUrl (mandatory)	The URL of the Web service. Format: [<HP Service Desk server IP address>:<HP Service Desk server port>] **Note:** The server port is generally 30999	—

Property Name	Description	Default Value
userName (mandatory)	The user name with which HP Release Control connects to HP Service Desk.	—
password (mandatory)	The password with which HP Release Control connects to HP Service Desk. **Note:** The password should be encrypted. For details, see the section about encrypting passwords in the *HP Release Control Configuration Guide*.	—

HP Project and Portfolio Management/ IT Governance Center Web Services Connector Settings

This section describes how to connect to the HP Project and Portfolio Management / IT Governance Center service desk application.

To connect to the HP Project and Portfolio Management/IT Governance Center Web Services service desk application:

1. Copy the contents of the **<HP Release Control installation directory>\examples\ITG\< HP Project and Portfolio Management version>\conf** directory to the **<HP Release Control installation directory>\conf** directory.
2. Copy the contents of the **<HP Release Control installation directory>\examples\ITG\<HP Project and Portfolio Managementversion>\tomcat** directory to the **<HP Release Control installation directory>\tomcat** directory.
3. Go to the Administrator module and select the **Fields** tab.
4. In the **Available Fields** pane, select **Miscellaneous** > **request-id.**

5 In the **Field Attributes** pane, enter the following URL in the **Value display format** field:

```
http://<HP Project and Portfolio Management host:port>/itg/web/knta/crt/
RequestDetail.jsp?REQUEST_ID=%%request-id%%
```

6 Click **Save.**

7 For each change request level (top-level and second-level), the following connector attributes must be configured in the HP Project and Portfolio Management/IT Governance Center Web Services adapter configuration file (by default, **itg-ws-adapter.settings**):

Property Name	Description	Default Value
connector-type (mandatory)	This must be set to: itg	—
requestTypeName (mandatory)	The name of the HP Project and Portfolio Management/ IT Governance Center request type to be retrieved. Note that this field is case-sensitive.	—
parentRequestTypeName (mandatory, if the request is a second-level request with a parent request)	The name of the HP Project and Portfolio Management/ IT Governance Center parent request type to be retrieved, if the request is a second-level request (meaning it has a parent request associated with it).	—
username (mandatory)	The user name with which HP Release Control connects to HP Project and Portfolio Management/IT Governance Center.	—

Property Name	Description	Default Value
password (mandatory)	The password with which HP Release Control connects to HP Project and Portfolio Management/IT Governance Center. Note that the password should be encrypted. For details, see the section about encrypting passwords in the *HP Release Control Configuration Guide*.	—
serviceUrl (mandatory)	The URL of the HP Project and Portfolio Management/ IT Governance Center Web service.	—

8 If your HP Project and Portfolio Management / IT Governance Center Web Services service desk application is synchronized with the CMDB server:

- For HP Project and Portfolio Management version 7.5, add a new change request field named **changed-ci-id-list** of type **text**. Apply the analysis rule **cmdb-object-id** to this field, with the analysis rule level set to both **Change** and **Task**.
- For all other versions, add a new change request field named **mam-ticket-id** of type **text**. Apply the analysis rule **mam-ticket** to this field, with the analysis rule level set to both **Change** and **Task**.

For information about creating new change request fields and applying analysis rules, see see the section about creating or modifying change request fields in the *HP Release Control Configuration Guide*.

9 Map the workflow steps from HP Project and Portfolio Management to status names in HP Release Control. This is done from within the HP Project and Portfolio Management workbench and the convert script in the <**HP Release Control installation directory\conf\ppm-ws-adapter.ext** directory. For more information, refer to the HP Project and Portfolio Management documentation.

HP Server Automation Connector Settings

The following HP Server Automation connector attributes must be configured in the HP Server Automation adapter configuration file (by default, **sa-adapter.settings**):

Property Name	Description	Default Value
saServerUrl (mandatory)	The URL of the HP Server Automation server.	—
saUsername (mandatory)	A valid user name to access the HP Server Automation server.	—
saPassword (mandatory)	A valid password to access the HP Server Automation server.	—
trustCertFile (mandatory)	The location of HP Server Automation's security certificate file. This file may be located at **var/opt/optsware/crypto/coglib/opsware-ca.crt**	—
filterRelevantJobs	A list of the types of jobs that are imported to HP Release Control. For more details, refer to the Opsware Automation Platform Developers Guide for search filter syntax.	All jobs of status **Pending** or **Recurring**.

HP Network Automation Connector Settings

The following HP Network Automation connector attributes must be configured in the HP Network Automation adapter configuration file (by default, **na-adapter.settings**):

Property Name	Description	Default Value
naServerURL (mandatory)	The URL of the HP Network Automation server.	—
naUsername (mandatory)	A valid User Name to access the HP Network Automation server.	—
naPassword (mandatory)	A valid password to access the HP Network Automation server.	—
timeZoneString	The format for determining the time zone when converting requests located in a different timezone. To change this to a specific timezone, use the Java naming conventions for time zones.	UTC
dateFormatString	The date and time format.	—
queryStatus	Tasks are imported only if they have one of the statuses listed in this tag.	
daysBefore	This number determines how many days before the current date tasks are imported from HP Network Automation. (for example, 14 means import all tasks scheduled up to 14 days before today).	

Property Name	Description	Default Value
daysAfter	This number determines how many days after the current date tasks are imported from HP Network Automation. (For example, 7 means import all tasks scheduled up to 7 days after today.)	
excludeTaskTypes	A list of task types which will NOT be imported from HP Network Automation.	

Database Connector Settings

The following database connector attributes must be configured in the appropriate database adapter configuration file:

Property Name	Description	Default Value
connector-type (mandatory)	This must be set to: dbConnector	—
dbUrl (mandatory)	The URL of the database.	—
userName (mandatory)	The user name with which HP Release Control connects to the database.	—
password (mandatory)	The password with which HP Release Control connects to the database. Note that the password should be encrypted. For details, see the section about encrypting passwords in the *HP Release Control Configuration Guide*.	—

Property Name	Description	Default Value
driverClassName (mandatory)	The name of the JDBC driver. Ensure that the driver exists in the **<Tomcat server installation directory>\common\lib** directory.	—
sqlQueryByLastUpdate (mandatory)	The SQL query that returns the change request set according to the requests' **last-update** field values. To make use of a stored procedure, set the value of the **sqlQueryByLastUpdate** property to the procedure name and set the value of the **updatedInputParamName** property as specified below. **Note:** Both SQL queries and stored procedures must have one parameter which is the **last-update** field value. Query results must be sorted according to the **last-update** values. If you are including customized SQL queries, see "Including Customized SQL Queries" on page 68.	—

Property Name	Description	Default Value
sqlQueryByCreationDate (mandatory)	The SQL query that returns the change request set according to the requests' **creation-date** field values. To make use of a stored procedure, set the value of the **sqlQueryByCreationDate** property to the procedure name and set the value of the **createdInputParamName** property as specified below. **Note:** Both SQL queries and stored procedures must have one parameter which is the **creation-date** field value. Query results must be sorted according to the **creation-date** values. If you are including customized SQL queries, see "Including Customized SQL Queries" on page 68.	—
lastUpdatedFieldName (mandatory)	The name of the column in the result set that contains the **last-update** field value.	—
lastUpdatedFieldType (mandatory)	One of the following values: **time**, **timestamp**, **date**, **milliseconds**, or **seconds**	—
creationDateFieldName (mandatory)	The name of the column in the result set that contains the **creation-date** field value.	—
creationDateFieldType (mandatory)	One of the following values: **time**, **timestamp**, **date**, **milliseconds**, or **seconds**	—
idFieldName (mandatory)	The name of the column in the result set that contains the ID field value.	—

Property Name	Description	Default Value
createdInputParamName	The name of the input parameter of the stored procedure if a stored procedure was specified in the **sqlQueryByCreationDate** property.	—
updatedInputParamName	The name of the input parameter of the stored procedure if a stored procedure was specified in the **sqlQueryByLastUpdate** property.	—
dbHelper-class-name	The class name used for the db helper.	**com.mercury.onyx.sdi.sdk.db.DBHelperImpl**
connectionProperties	The database properties, in java.util.Properties format. For example: key1=value1; key2=value2	Empty properties
connectionPoolProperties	The database pool connection properties, in java.util.Properties format. For possible values, see: http://www.mchange.com/projects/c3p0/index.html	—
maxRowsToReturn	A limitation on the number of rows a request query should return. Not currently for use.	The working bulk size set in the adapter.

Note: A sample database adapter configuration file, **sample-db-adapter.settings**, is available in the **<HP Release Control installation directory>\examples\service-desk-examples\DB\SQL Server\conf** directory.

Including Customized SQL Queries

If you add a customized SQL query that includes **greater than** or **less than** symbols, you need to insert the CDATA tag as illustrated in the example below:

```
<connector>
    <connector-type>dbConnector</connector-type>
    <properties>
        <![CDATA[
            dbUrl=jdbc:jtds:sqlserver://[Enter a valid MS SQL Server
            name]:1433/data_base_name
            userName=
            password=
            driverClassName=net.sourceforge.jtds.jdbc.Driver
            sqlQueryByLastUpdate=SELECT crnum, lasteditdate,
                createdate FROM ecmschase WHERE lasteditdate >= ?
                AND rownum < 20 ORDER BY lasteditdate
            sqlQueryByCreationDate= SELECT crnum, createddate,
                createdate FROM ecmschase WHERE createddate >= ?
                AND rownum < 20 ORDER BY createddate
             lastUpdatedFieldName=lasteditdate
            creationDateFieldName= createddate
            creationDateFieldType=milliseconds
            idFieldName=id
            lastUpdatedFieldType=milliseconds
            createdInputParamName=
            updatedInputParamName=
         ]]>
    </properties>
</connector>
```

Oracle Database Connector Settings

The Oracle database connector attributes are identical to the above database connector attributes, except for the following:

Property Name	Description
connector-type (mandatory)	This must be set to: oracleDbConnector
sqlQueryByLastUpdate (mandatory)	The SQL query that returns the change request set according to the requests' **last-update** field values. To make use of a stored procedure, set the value of the **sqlQueryByLastUpdate** property to the procedure name. Set the values of the **updatedInputParamName, updatedOutputParam,** and **catalog** properties as specified below. **Note:** Both SQL queries and stored procedures must have one parameter which is the **last-update** field value. Query results must be sorted according to the **last-update** values. The signature of the stored procedure should have the following format: The first parameter should be of type ref_cursor; the second parameter should be match the last updated field.

Property Name	Description
sqlQueryByCreationDate (mandatory)	The SQL query that returns the change request set according to the requests' **creation-date** field values. To make use of a stored procedure, set the value of the **sqlQueryByCreationDate** property to the procedure name. Set the values of the **createdInputParamName, createdOutputParamName,** and **catalog** properties as specified below. **Note:** Both SQL queries and stored procedures must have one parameter which is the **creation-date** field value. Query results must be sorted according to the **creation-date** values. The signature of the stored procedure should have the following format: The first parameter should be of type ref_cursor, the second parameter should match the creation date field.
catalog	The catalog name of the stored procedure. This is only required if a stored procedure is specified in **sqlQueryByCreationDate** or **sqlQueryByLastUpdate,**
createdInputParamName	The name of the input parameter of the stored procedure if a stored procedure was specified in the **sqlQueryByCreationDate** property.
updatedInputParamName	The name of the input parameter of the stored procedure if a stored procedure was specified in the **sqlQueryByLastUpdate** property.
updatedOutputParamName	The name of the output parameter (cursor) of the stored procedure if a stored procedure was specified in the **sqlQueryByLastUpdate** property.

Property Name	Description
createdOutputParamName	The name of the output parameter (cursor) of the stored procedure if a stored procedure was specified in the **sqlQueryByCreationDate** property.
dbHelper-class-name	The class name used for the db helper. The default value is **com.mercury.onyx.sdi.sdk.db.OracleDBConnectorHelper**

Note: A sample Oracle database adapter configuration file, **sample-db-oracle-adapter.settings**, is available in the **<HP Release Control installation directory>\examples\service-desk-examples\DB\Oracle\conf** directory.

Configuring the Converter Attributes

The converter attributes, which call the conversion script files where the field mapping and filter functions are defined, must be configured separately for each request type included in the adapter configuration file.

You configure the following converter attributes in the adapter configuration file:

Property Name	Description	Default Value
converter-type (mandatory)	This must be set to: scriptConverter	—
scripts (mandatory)	A comma-separated list of script file names. The adapter searches for these files in the adapter's extension subdirectory (**conf\<adapter name>.ext**) or in the **conf** directory. For examples of conversion script files, see the sample scripts located in the subdirectories of the **<HP Release Control installation directory>\examples\service-desk-examples** directory.	—
preFilterMethodName	The name of the pre-filter method in the script.	**preFilter**
postFilterMethodName	The name of the post-filter method in the script.	**postFilter**
convertMethodName	The name of the convert method in the script.	**convert**

Note: If you specify method names, conversion script files can be shared by multiple adapters.

Writing the Conversion Scripts

Conversion scripts are responsible for the field mapping that occurs during the conversion of change requests from their service desk application format to a generic format, as well as for the filtering of requests.

Note: Ensure that no line within a script exceeds 256 characters.

In particular, it is important that the conversion scripts contain a detailed mapping scheme for the service desk application enumeration fields. Each HP Release Control enumeration field appears by default in the conversion scripts in the following format (upper case letters):

```
<enumeration field type>_<HP Release Control enumeration name>
```

For example:

```
genericRFC.setField("priority", PRIORITY_HIGH);
```

If a script refers to an enumeration field that does not exist, an error message is recorded in the script log file (see "Conversion Script Log Files" on page 75).

For details on customizing the HP Release Control enumeration fields to which the service desk application enumeration fields can be mapped, see "Customizing HP Release Control Fields" on page 38.

The functions that each script must contain are explained in detail below. For an explanation of the objects that can or should be included in each function, refer to the **GenericTicketImpl** class in the **API_Reference.chm** file, located in the **<HP Release Control installation directory>\documentation** folder.

➤ **convert.** This function maps the fields of the service desk application to generic request fields. Below is an example of the **convert** function:

```
function convert(remedyRFC, genericRFC)
```

Note: For a list of preconfigured change request fields included in HP Release Control, see the section about preconfigured change request fields in the *HP Release Control Configuration Guide*.

➤ **preFilter.** This function filters the change requests before they are converted, ensuring that no unnecessary requests are converted and sent to the HP Release Control server. The function is written using the terminology of the service desk application. For example, if you do not want to convert requests with a **Low** priority, you could use the following **preFilter** function. This function specifies that BMC Remedy Action Request System requests with a **Low** priority not be converted and that all other requests be converted:

```
function preFilter(remedyRFC){
    if (remedyRFC.get("Request Urgency")==ARS_PRIORITY_LOW)
        return false;
    else
        return true;
```

➤ **postFilter.** This function filters the converted requests, ensuring that only required requests are transferred to the HP Release Control server. The function is written using HP Release Control request terminology. For example, the following **postFilter** function specifies that only generic requests with the status **Approved** be transferred to the HP Release Control server:

```
function postFilter(genericRFC){
    ccmStatus==genericRFC.get("status");
    if (ccmStatus==STATUS_APPROVED)
        return true;
    else
        return false;
```

Notes:

- If you are converting requests from HP Project and Portfolio Management/IT Governance Center, or a database service desk application, refer to all column names using lower case letters.
- If you are converting requests from BMC Remedy Action Request System, or a database service desk application, it is recommended that you optimize network load and space consumption by converting only necessary request columns. Specify these columns in your SELECT query or use the relevant connector property.
- You can use logging objects in the conversion scripts to log statements from the request conversion process. For details, see "Conversion Script Log Files" below.

Conversion Script Log Files

If you want to view log messages describing the activity taking place during the request conversion process, you can include logging objects in your conversion scripts. During the conversion process, you can view the log messages in the conversion script log files, located in the **<HP Release Control installation directory>\script-logs** directory.

A logging object can be included within any of the script functions. Its syntax should be as follows:

```
logger.<type of message>("<log message>");
```

The following message types can be used:

- **info.** Records all processing activity that is performed.
- **warn.** Records warning messages.
- **error.** Records error messages.

For example, you can include a logging object such as the following:

```
logger.info("converting request #3001");
```

If you want the conversion script log files to display a list of all service desk application fields, you can include the following logging object in your conversion script:

```
logger.info(BeanUtils.describe(ticket));
```

If you use the above logging object, ensure that the following line is included at the top of the conversion script:

```
importPackage(Packages.org.apache.commons.beanutils);
```

3

Upgrading HP Release Control

This chapter provides information on how to upgrade from HP Release Control **4.04** to version **4.12**.

To upgrade to version 4.12 from other versions, follow the upgrade path in the table below:

Upgrading from version:	Upgrade path
Earlier than 4.04	**1.** Upgrade to version 4.04. **2.** Follow the instructions in this chapter.
4.10 or 4.10.1	**1.** Upgrade to version 4.11 according to the instructions in the 4.11 patch notes (**PatchNotes.txt**). **2.** Upgrade from 4.11 to 4.12 according to the instructions in the 4.12 patch notes (**PatchNotes.txt**).
4.11	Follow the instruction in the 4.12 patch notes (PatchNotes.txt).

This chapter includes:

- Upgrade Procedure on page 78
- Configuring New HP Service Manager/Center Integration Features on page 84
- Appendix: Manual Steps for SMRC1.2_Demo_v6.22.unl on page 117

Upgrade Procedure

Caution: This section describes how to upgrade version 4.04 to version 4.12.

Some of the new HP Service Manager/Center integration features included in version 4.12 require further configuration. After completing the upgrade, you can configure these new features as described in "Configuring New HP Service Manager/Center Integration Features" on page 84.

To upgrade to HP Release Control version 4.12:

1 Make sure that the change request queue is empty as follows:

a In the **<old HP Release Control installation directory>\conf** directory, open the relevant service desk adapter configuration files (**<service desk>-adapter.settings**). For example, if you are working with HP Service Manager, the relevant file is **servicemanager-ws-adapter.settings**.

b In the adapter configuration file, switch the adapter into init-mode as follows:

➤ Locate the following line:

```
<!--initial-load-state>1/20/2000 00:00:00 PST</initial-load-state-->
```

➤ Uncomment the line and modify the date/time as follows:

```
<initial-load-state>[last polling time]</initial-load-state>
```

Where [**last polling time]** is any time before the last time HP Release Control polled the service desk. Polling occurs every thirty seconds by default.

For more information on the **adapter.settings** file and **polling-schedules**, see "Overview of Adapter Configuration" on page 41.

c Restart HP Release Control and allow it to process all the change requests still in the queue.

d Make sure the queue is empty using the Queue Manager utility located in **<old HP Release Control installation directory>\utilities\QueueManager**.

To view a list of change requests in the queue, run the following command:

```
QueueManager.bat -l
```

If there are no changes in the queue, you can proceed. If there are still changes in the queue, wait until they are processed or use the Queue Manager utility to delete them.

For more information about using the Queue Manager utility, see the *HP Release Control Configuration Guide*.

2 If you are configuring HP Release Control to work with Apache Web server, install the Apache Web server on the same machine as HP Release Control.

Caution: In previous versions of HP Release Control, Apache was installed automatically in the **<old HP Release Control installation directory>\webserver** directory. Do not use this Apache installation with the new version of HP Release Control.

---

3 Back up the database to protect your data in case of an error during the upgrade procedure.

4 Install HP Release Control version 4.12 as described in "Installing HP Release Control" on page 17.

5 Reconfigure the **database.properties** file by following the guidelines in "Configuring the Database or User Schema" on page 19.

6 Configure the **upgrade-settings.xml** file.

a Go to **<HP Release Control 4.12 installation directory>\utilities\upgrade\conf** directory and open the **upgrade-settings.xml** file.

b In the **file-context/source folder** element, specify the path of the old HP Release Control server.

c In the **db-context** element, configure all the sub-elements according to the database properties file (**<HP Release Control 4.12 installation directory>\conf\database.properties)** which you configured in step 5 on page 79.

Note: As a result of the upgrade, the database driver will be changed and the old driver will no longer be supported.

The other elements in the **upgrade-settings.xml** file are set by default. These elements are described in the table below. **It is recommended that you do not modify these elements**.

Element	Description
fail-on-error	Defines whether the upgrade procedure should continue or stop if the procedure encounters an error during one of the steps. Set to stop by default.
target-version	Defines which version of HP Release Control to upgrade to.
file-context/ target-folder	Points to the location where HP Release Control 4.12 is to be installed.

7 In the **<HP Release Control 4.12 installation directory>\bin** directory, double-click **upgrade.bat** to perform the upgrade.

8 If you are using an Apache Web server, restart your Web server.

9 Depending on your configuration, you need to perform the appropriate actions according to the table below:

Perform action if	Action
You made any changes to the **log levels** in the **ccmlog4j.properties** file.	Manually make the same changes again in the new file.
You did not configure the **report templates** in the **conf\reports.ext** directory.	➤ Delete the contents of the **conf\reports.ext** directory. ➤ Copy the contents of the **conf.orig\reports.ext** directory to the **conf\reports.ext** directory.
You configured the **grid.change-single-pager-report.html.jrxml** report template.	➤ Open the **grid.change-single-pager-report.html.jrxml** template in the Jasper iReport editor. ➤ In the **details** node, group the head line elements (ID, ticket image ID, impact severity, impact severity value, impact severity icon, line). **Note:** In HP Release Control versions 4.1 and higher, the PDF template is used for both PDF and html. This upgrade procedure will only modify your original PDF templates.
You did not configure the **notification template**.	➤ Delete the contents of the **conf\notifications.ext** directory. ➤ Copy the contents of the **conf.orig\notifications.ext** directory to the **conf\notifications.ext** directory.

10 Depending on your service desk, perform the appropriate actions according to the table below:

Service desk	Actions
HP Service Manager	➤ Go to <**HP Release Control 4.12 installation directory\examples\service-desk-examples\ServiceManager\<relevant HP Service Manager directory>\wsdd**. ➤ Copy (and overwrite) the contents of the above directory to <**HP Release Control installation directory\tomcat\webapps\ccm\WEB-INF\classes.**
HP ServiceCenter	➤ Go to <**HP Release Control 4.12 installation directory\examples\service-desk-examples\ServiceCenter\<relevant HP ServiceCenter directory>\wsdd** ➤ Copy (and overwrite) the contents of the above directory to <**HP Release Control installation directory\tomcat\webapps\ccm\WEB-INF\classes.**

Service desk	Actions
➤ Database as service desk ➤ HP Project and Portfolio Management/ Mercury IT Governance Center	**1.** If you manually added .jar files to the **<old HP Release Control Installation directory>\tomcat\webapps\ ccm\WEB-INF\lib** directory from a source other than the examples folder, copy the files to the new **lib** directory. **2.** Open your service desk integration file and make the following changes depending on which database you are using: **If you are using an Oracle database:** ➤ Replace the text: com.mercury.jdbc.MercOracleDriver with the text: oracle.jdbc.OracleDriver. ➤ Replace the text: jdbc:mercury:oracle://[Oracle Server name]:1521;ServiceName=[service name] with the text: jdbc:oracle:thin:@[Oracle server name]:1521:[Oracle SID] **If you are using an MS SQL database:** ➤ Replace the text: com.mercury.jdbc.MercSQLServerDriver with the text: net.sourceforge.jtds.jdbc.Driver ➤ Replace the text: jdbc:mercury:sqlserver://[MS SQL Server name]:1433;DatabaseName=[database name];sendStringParametersAsUnicode =false with the text: jdbc:jtds:sqlserver://[MS SQL server name]:1433/ [database name];sendStringParametersAsUnicode=false For information about the location of your service desk integration file, see "Location and Naming Conventions of Service Desk Integration Files" on page 42.
All other Service desks	If you manually added .jar files to the <old HP Release Control Installation directory>\tomcat\ webapps\ccm\WEB-INF\lib directory from a source other than the examples folder (for example, Remedy .jar files), copy the files to the new lib directory.

11 Return the adapter to polling mode.

a In the <**HP Release Control 4.12 installation directory**>**conf** directory, open the relevant service desk adapter configuration files (<**service desk**>-**adapter.settings**). For example, if you are working with HP Service Manager, the relevant file is **servicemanager-ws-adapter.settings**.

b In the adapter configuration file, comment out the following line:

```
<initial-load-state>[last polling time]</initial-load-state>
```

12 Start the HP Release Control 4.12 service.

13 In the <**HP Release Control 4.12 installation directory**>**bin** directory, double-click **IndexBuilder.bat**.

14 If you configured time periods in your previous version of HP Release Control, delete the old time periods and configure them again in the Administration module Time Periods tab.

15 (Recommended) Uninstall the old version of the product.

Configuring New HP Service Manager/Center Integration Features

After you have completed the upgrade procedure (page 78), you can configure new HP Service Manager/Center integration features included in version 4.12. This section includes:

➤ "Adding New Features for HP Service Manager" below

➤ "Adding New Features for HP ServiceCenter" on page 106

Caution: During the procedures described in this section, you may have to copy sections of text into your configuration files. When copying text, ensure that strings in quotation marks (") start and end on the same line.

Adding New Features for HP Service Manager

This section includes instructions for adding the following new features for HP Service Manager:

- "Updating Activity Times from Director/Implementor Module" below
- "Updating Planned Times from Change Planner" on page 91
- "Viewing Approval Status of User Groups" on page 95
- "Updating Approval/Retraction Comments in HP Service Manager" on page 98
- "Configuring HP Service Manager to Authorize Operations in HP Release Control" on page 99
- "Closing HP Service Manager Tickets from HP Release Control" on page 103
- "Creating Dedicated HP Release Control External Access Objects" on page 104
- "HP Service Manager 7.11 (Webtier) Only: Enabling Access to HP Release Control Interfaces" on page 105

Updating Activity Times from Director/Implementor Module

In the Director and Implementor modules, you can update the actual start and end time of an activity. This section describes how to configure your environment so that when these times are updated in HP Release Control, they are automatically updated in the originating HP Service Manager ticket.

For more information about the Director and Implementor modules, see the *HP Release Control User Guide*.

To configure your system to automatically update activity times:

1 Add the **updateStatus** operation for changes and tasks in the **servicemanager-ws-adapter.settings** file.

a Open the **conf\servicemanager-ws-adapter.settings** file.

b In the <**request-type level="1**"> element, under the <**operations**> element, paste the following **operation name** sub-element:

```
<operation name="updateStatus">
        <operation-type>updateStatusOperation</operation-type>
        <properties>
                timeout=30
        </properties>
        <connector>
                <connector-type>ServiceManagerChangeUpdate</connector-type>
                <properties>
                        scriptName=updateOperations.js
                        methodName=updateChangeStatus
                </properties>
        </connector>
</operation>
```

c In the <**request-type level="2**"> element, under the <**operations**> element, paste the following **operation name** sub-element:

```
<operation name="updateStatus">
        <operation-type>updateStatusOperation</operation-type>
        <properties>
                timeout=30
        </properties>
        <connector>
                <connector-type>ServiceManagerTaskUpdate</connector-type>
                <properties>
                        scriptName=updateOperations.js
                        methodName=updateTaskStatus
                </properties>
        </connector>
</operation>
```

2 In the **HP Release Control installation directory\conf\scripts.ext\sdOperations.js** file, add the **canUpdateStatus** function:

```
function canUpdateStatus(genericRFC,userLoginName) {
    var status = genericRFC.getField("status");
    var isStatusNotClosed = (status != STATUS_CLOSED);
    return isStatusNotClosed;
}
```

3 Update the **HP Release Control installation directory\conf\servicemanager-ws-adapter.ext\updateOperations.js** file.

a Verify that the following lines appear at the top of the **updateOperations.js** file. If they do not appear, paste them in.

```
importPackage(java.util);
importPackage(Packages.com.peregrine.servicecenter.PWS.Common);
importPackage(Packages.com.peregrine.servicecenter.PWS);
```

b Add the **updateChangeStatus** function.

```
/**
 * Executed when RC updates change implementation status information back to
Service Manager. This method
 * maps the fields between RC and SM and performs additional logic, if required.
 *
 * @param changeInstance an empty instance of SM change/task to fill with the data.
 * @param {Map<String, Object>} fieldsMap a map of fields that the update values from
RC can be taken from. Available fields: actual-start-time, actual-end-time
 * @param {Collection} updatedFields a collection of the fields updated - any field
updated must be added to this collection.
 */
function updateChangeStatus(changeInstance, fieldsMap, updatedFields) {
    var actualStart = fieldsMap.get("actual-start-time");
    var actualEnd = fieldsMap.get("actual-end-time");

    // update the start date
    if (actualStart == null) {
        changeInstance.setImplementationStart(new DateTimeType());
    } else {
        var startDate = Calendar.getInstance(TimeZone.getTimeZone("UTC"));
        startDate.setTimeInMillis(actualStart);
        changeInstance.setImplementationStart(new DateTimeType(startDate));
    }
    updatedFields.add("actual-start-time");

    // update the end date
    if (actualEnd == null) {
        changeInstance.setImplementationEnd(new DateTimeType());
    } else {
        var endDate = Calendar.getInstance(TimeZone.getTimeZone("UTC"));
        endDate.setTimeInMillis(actualEnd);
        changeInstance.setImplementationEnd(new DateTimeType(endDate));
    }
    updatedFields.add("actual-end-time");
}
```

c Add the **updateTaskStatus** function.

```
/**
 * Executed when RC updates task implementation status information back to Service
Manager. This method
 * maps the fields between RC and SM and performs additional logic, if required.
 *
 * @param changeInstance an empty instance of SM change/task to fill with the data.
 * @param {Map<String, Object>} fieldsMap a map of fields that the update values from
RC can be taken from. Available fields: actual-start-time, actual-end-time
 * @param {Collection} updatedFields a collection of the fields updated - any field
updated must be added to this collection.
 */
function updateTaskStatus(changeInstance, fieldsMap, updatedFields) {
    var actualStart = fieldsMap.get("actual-start-time");
    var actualEnd = fieldsMap.get("actual-end-time");

    // update the start date
    if (actualStart == null) {
        changeInstance.setActualStart(new DateTimeType());
    } else {
        var startDate = Calendar.getInstance(TimeZone.getTimeZone("UTC"));
        startDate.setTimeInMillis(actualStart);
        changeInstance.setActualStart(new DateTimeType(startDate));
    }
    updatedFields.add("actual-start-time");

    // update the end date
    if (actualEnd == null) {
        changeInstance.setActualEnd(new DateTimeType());
    } else {
        var endDate = Calendar.getInstance(TimeZone.getTimeZone("UTC"));
        endDate.setTimeInMillis(actualEnd);
        changeInstance.setActualEnd(new DateTimeType(endDate));
    }
    updatedFields.add("actual-end-time");
}
```

4 In the HP Service Manager Client (Eclipse Client), go to **System Definition > Tables > cm3r**. Add the fields **implementationEnd** and **implementationStart**. Set the Data type to **Date/time**.

5 **If you are using a version of HP Service Manager earlier than 7.10, and IIA content is not enabled:** In the HP Service Manager Client, go to **System Definition** > **Tables** > **cm3t**. Add the fields **actualEnd** and **actualStart**. Set the Data type to **Date/time**.

6 Restart HP Service Manager.

7 If you are working with **Change** and **ChangeTask** external access objects (and not **ChangeRC** and **ChangeTaskRC**), expose the new fields in the External Access Definition form for the **ChangeManagement** Service Name.

   a In the **cm3r** file, ensure that the following fields with the appropriate properties are included in the list of exposed fields:

Field	Caption	Type
implementationEnd	ImplementationEnd	
implementationStart	ImplementationStart	

   b In the cm3t file, ensure that the following fields with the appropriate properties are included in the list of exposed fields:

Field	Caption	Type
actualEnd	ActualEnd	
actualStart	ActualStart	

8 Restart HP Service Manager.

9 Regenerate the Web Services stub file (**.jar**):

   a Run the **ServiceManagerWsdlGen.bat** utility in the <**HP Release Control Installation directory**>**bin** directory.

   b From the <**HP Release Control installation directory**>**bin****result** directory, copy the **tomcat** folder and overwrite the existing **tomcat** folder in the HP Release Control installation root directory. When asked whether you want to overwrite certain files, click **Yes to all**.

10 Restart the HP Release Control service.

Note: By default, the decision whether the ticket may be updated is determined in HP Release Control using the script in **sdOperations.js**.

To enhance your integration with HP Service Manager, you can configure HP Service Manager to also decide whether this operation can be performed in HP Release Control. See "Configuring HP Service Manager to Authorize Operations in HP Release Control" on page 99

Updating Planned Times from Change Planner

The Analysis module Change Planner enables you to simulate the effects of modifying the planned start and end times of a change request. This section describes how to configure your environment so that after you run a simulation, you can save the updated start and end times to the originating service desk.

For more information about the Change Planner, see the *HP Release Control User Guide*.

To configure your system to update times from the Change Planner:

1 Add the **updatePlannedTimes** operation for changes and tasks in the **servicemanager-ws-adapter.settings** file.

a Open the **conf\servicemanager-ws-adapter.settings** file.

b In the <**request-type level**="**1**"> element, under the <**operations**> element, paste the following **operation name** sub-element:

```
<operation name="updatePlannedTimes">
        <operation-type>updatePlannedTimesOperation</operation-type>
        <connector>
                <connector-type>ServiceManagerChangeUpdate</connector-type>
                <properties>
                        scriptName=updateOperations.js
                        methodName=updatePlannedTimes
                </properties>
        </connector>
</operation>
```

c In the <**request-type level**="**2**"> element, under the <**operations**> element, paste the following **operation name** sub-element:

```
<operation name="updatePlannedTimes">
        <operation-type>updatePlannedTimesOperation</operation-type>
        <connector>
                <connector-type>ServiceManagerTaskUpdate</connector-type>
                <properties>
                        scriptName=updateOperations.js
                        methodName=updatePlannedTimes
                </properties>
        </connector>
</operation>
```

2 In the **HP Release Control installation directory\conf\scripts.ext\sdOperations.js** file, add the **canUpdatePlannedTimes** function:

```
function canUpdatePlannedTimes(genericRFC,userLoginName) {
    var status = genericRFC.getField("status");
    var isStatusNotClosed = (status != STATUS_CLOSED);
    return isStatusNotClosed;
}
```

3 Update the **HP Release Control installation directory\conf\servicemanager-ws-adapter.ext\updateOperations.js** file.

a Verify that the following lines appear at the top of the **updateOperations.js** file. If they do not appear, paste them in.

```
importPackage(java.util);
importPackage(Packages.com.peregrine.servicecenter.PWS.Common);
importPackage(Packages.com.peregrine.servicecenter.PWS);
```

b Add the **updatePlannedTimes** function.

```
/**
 * Executed when RC updates planned times back in Service Manager. This method
 * maps the fields between RC and SM and performs additional logic, if required.
 *
 * @param changeInstance an empty instance of SM change/task to fill with the data.
 * @param {Map<String, Object>} fieldsMap a map of fields that the update values from
RC can be taken from. Available fields: planned-start-time, planned-start-end
 * @param {Collection} updatedFields a collection of the fields updated - any field
updated must be added to this collection.
 */
function updatePlannedTimes(changeInstance, fieldsMap, updatedFields) {
    // Get the field values
    var plannedStartTime = fieldsMap.get("planned-start-time");
    var plannedEndTime = fieldsMap.get("planned-end-time");

    // update the start date
    if (plannedStartTime == null) {
        changeInstance.getHeader().setPlannedStartDate(new DateTimeType());
    } else {
        var plannedStartCalendar =
Calendar.getInstance(TimeZone.getTimeZone("UTC"));
        plannedStartCalendar.setTimeInMillis(plannedStartTime);
        changeInstance.getHeader().setPlannedStartDate(new
DateTimeType(plannedStartCalendar));
    }
    updatedFields.add("planned-start-time");

    // update the End date
    if (plannedEndTime == null) {
        changeInstance.getHeader().setPlannedEndDate(new DateTimeType());
    } else {
        var plannedEndCalendar =
Calendar.getInstance(TimeZone.getTimeZone("UTC"));
        plannedEndCalendar.setTimeInMillis(plannedEndTime);
        changeInstance.getHeader().setPlannedEndDate(new
DateTimeType(plannedEndCalendar));
    }
    updatedFields.add("planned-end-time");
}
```

4 Restart the HP Release Control service.

Note: By default, the decision whether the ticket may be updated is determined in HP Release Control using the script in **sdOperations.js**.

To enhance your integration with HP Service Manager, you can configure HP Service Manager to also decide whether this operation can be performed in HP Release Control. See "Configuring HP Service Manager to Authorize Operations in HP Release Control" on page 99.

Viewing Approval Status of User Groups

The approval/retraction of a change request in the Analysis module **Collaborate** > **Resolution** tab, results in an updated status of the request within HP Service Manager.

This section describes how to configure your environment so that you can view the approval status of HP Service Manager user groups in the **Collaborate** > **Resolution** tab. For example, you can view the user groups whose approval is still required.

For more information about change approval, see the *HP Release Control User Guide*.

To configure your system to view the approval status of user groups:

1 If you are working with **Change** and **ChangeTask** external access objects (and not **ChangeRC** and **ChangeTaskRC**), expose the appropriate fields in the External Access Definition form for the **ChangeManagement** Service Name as follows:

In the **cm3r** file and the **cm3t** file, ensure that the following fields with the appropriate properties are included in the list of exposed fields:

Field	Caption	Type
approval.structure,approvals.required	ApprovalsRequired	
approval.structure,approved.groups	ApprovedGroups	
approval.structure,current.pending.groups	CurrentPendingGroups	

2 Restart HP Service Manager.

3 In the <**HP Release Control installation directory**>**conf**\ **servicemanager-ws-adapter.ext**\ directory, update the **convertChange.js** and **convertTask.js** files.

In both of the above files, add a script at the end of the **convert** function that maps between the approval groups in HP Service Manager and HP Release Control. For example:

```
// Approval Process (Approved Groups, Currently Pending and Approvals Required)
      var sm_approved_groups = scRFC.get("approvalStructure.approvedGroups");
      if (sm_approved_groups != null) {
            genericRFC.setField("approved-groups",
webserviceArrayToString(scRFC.get("approvalStructure.approvedGroups.approvedGro
ups")));}

      var sm_pending_groups = scRFC.get("approvalStructure.currentPendingGroups");
      if (sm_pending_groups != null) {
            genericRFC.setField("current-pending-groups",
webserviceArrayToString(scRFC.get("approvalStructure.currentPendingGroups.current
PendingGroups")));
      }

      var sm_approvals_required = scRFC.get("approvalStructure.approvalsRequired");
      if (sm_approvals_required != null) {
            genericRFC.setField("approvals-required",
webserviceArrayToString(scRFC.get("approvalStructure.approvalsRequired.approvals
Required")));  }
```

4 If you exposed additional new fields above, regenerate the Web Services stub file (**.jar**):

a Run the **ServiceManagerWsdlGen.bat** utility in the <**HP Release Control Installation directory**>**bin** directory.

b From the <**HP Release Control installation directory**>**bin****result** directory, copy the **tomcat** folder and overwrite the existing **tomcat** folder in the HP Release Control installation root directory. When asked whether you want to overwrite certain files, click **Yes to all**.

5 Restart the HP Release Control service.

Updating Approval/Retraction Comments in HP Service Manager

The approval/retraction of a change request in the Analysis module **Collaborate** > **Resolution** tab, results in an updated status of the request within HP Service Manager.

This section describes how to configure your environment so that the approval/retraction comments are also exported along with the updated status.

For more information about change approval, see the *HP Release Control User Guide*.

To configure approval/retraction comments to be updated in HP Service Manager:

1. Load the HP Release Control unload files as follows:
   a. In the HP Service Manager Client, select the Database Manager.
   b. Select the **Import/Load** option from the drop-down menu.
   c. Load the two **approvalcomments** files from **<HP Release Control installation directory>\examples\service-desk-examples\ ServiceManager\<relevant HP Service Manager directory>\unload-files**.
   d. For each file, click **Load FG**.
2. Restart HP Service Manager.
3. Regenerate the Web Services stub file (**.jar**):
   a. Run the **ServiceManagerWsdlGen.bat** utility in the **<HP Release Control Installation directory>\bin** directory.
   b. From the **<HP Release Control installation directory>\bin\result** directory, copy the **tomcat** folder and overwrite the existing **tomcat** folder in the HP Release Control installation root directory. When asked whether you want to overwrite certain files, click **Yes to all**.
4. Restart the HP Release Control service.

Configuring HP Service Manager to Authorize Operations in HP Release Control

Before performing certain operations, such as request approval, HP Release Control must determine whether the operation can be performed at the current time by the current user.

To enhance your integration with HP Service Manager, you can configure your environment so that HP Service Manager also determines whether the operation can be performed in HP Release Control.

If you do not perform this configuration, the decision whether to perform the operation is determined in HP Release Control using the script in sdOperations.js.

To configure HP Service Manager to authorize operations performed in HP Release Control:

1. Load the HP Release Control unload file as follows:
   - **a** In the HP Service Manager Client, select the Database Manager.
   - **b** Select the **Import/Load** option from the drop-down menu.
   - **c** Load the **cm3roperatorinfo** file from **<HP Release Control installation directory>\examples\service-desk-examples\ServiceManager\ <relevant HP Service Manager directory>\unload-files**.
   - **d** Click **Load FG**.
2. Regenerate the Web Services stub file (**.jar**):
   - **a** Run the **ServiceManagerWsdlGen.bat** utility in the **<HP Release Control Installation directory>\bin** directory.
   - **b** From the **<HP Release Control installation directory>\bin\result** directory, copy the **tomcat** folder and overwrite the existing **tomcat** folder in the HP Release Control installation root directory. When asked whether you want to overwrite certain files, click **Yes to all**.

3 Ensure that the relevant operations exist in the **servicemanager-ws-adapter.settings** file:

a Open the **conf\servicemanager-ws-adapter.settings** file.

b In the <**request-type level**="**1**"> element, under the <**operations**> element, ensure that the following **operation name** sub-elements exist:

```
<operation name="canUpdateReview">
        <operation-type>canUpdateReviewOperation</operation-type>
        <connector>
                <connector-type>ServiceManagerChangeCanUpdate</connector-type>
        </connector>
</operation>

<operation name="canUpdatePlannedTimes">
        <operation-type>canUpdatePlannedTimesOperation</operation-type>
        <connector>
                <connector-type>ServiceManagerChangeCanUpdate</connector-type>
        </connector>
</operation>

<operation name="canUpdateStatus">
        <operation-type>canUpdateStatusOperation</operation-type>
        <connector>
                <connector-type>ServiceManagerChangeCanUpdate</connector-type>
        </connector>
</operation>
```

c In the <**request-type level**="**2**"> element, under the <**operations**> element, ensure that the following **operation name** sub-elements exist:

```
<operation name="canApprove">
        <operation-type>canApproveOperation</operation-type>
        <connector>
                <connector-type>ServiceManagerTaskCanApprove</connector-type>
        </connector>
</operation>

<operation name="canRetract">
        <operation-type>canRetractOperation</operation-type>
        <connector>
                <connector-type>ServiceManagerTaskCanRetract</connector-type>
        </connector>
</operation>

<operation name="canClose">
        <operation-type>canCloseOperation</operation-type>
        <connector>
                <connector-type>ServiceManagerTaskCanClose</connector-type>
        </connector>
</operation>
```

4 In the **HP Release Control installation directory\conf\scripts.ext\ sdOperations.js** file, ensure that the following functions exist:

```
function canApprove(genericRFC, userLoginName) {
    var status = genericRFC.getField("status");
    return (status == STATUS_PENDING_APPROVAL);
}

function canRetract(genericRFC, userLoginName) {
    return true;
}

function canUpdateReview(genericRFC, userLoginName) {
    var status = genericRFC.getField("status");
    return (status == STATUS_CLOSURE);
}
function canUpdateStatus(genericRFC,userLoginName) {
    var status = genericRFC.getField("status");
    var isStatusNotClosed = (status != STATUS_CLOSED);
    return isStatusNotClosed;
}

function canUpdatePlannedTimes(genericRFC,userLoginName) {
    var status = genericRFC.getField("status");
    var isStatusNotClosed = (status != STATUS_CLOSED);
    return isStatusNotClosed;
}

function canClose(genericRFC,userLoginName) {
    var status = genericRFC.getField("status");
    var isStatusNotClosed = (status != STATUS_CLOSED);
    return isStatusNotClosed;
}
```

5 Restart the HP Release Control service.

Closing HP Service Manager Tickets from HP Release Control

You can configure your environment to close HP Service Manager tickets from the Analysis module **Review** > **Conclusions** tab. For more information about the **Review** > **Conclusions** tab, see the *HP Release Control User Guide*.

To configure your environment to close HP Service Manager tickets:

1. Perform the steps described in "Configuring HP Service Manager to Authorize Operations in HP Release Control" on page 99.
2. Add the **close** operation for changes and tasks in the **servicemanager-ws-adapter.settings** file.
   a. Open the **conf\servicemanager-ws-adapter.settings** file.
   b. In the <**request-type level**="**1**"> element, under the <**operations**> element, paste the following **operation name** sub-element:

```
<operation name="close">
        <operation-type>closeOperation</operation-type>
        <connector>
            <connector-type>ServiceManagerChangeClose</connector-type>
            <properties>guarded=true</properties>
        </connector>
</operation>
```

   c. In the <**request-type level**="**2**"> element, under the <**operations**> element, paste the following **operation name** sub-element:

```
<operation name="close">
        <operation-type>closeOperation</operation-type>
        <connector>
            <connector-type>ServiceManagerTaskClose</connector-type>
            <properties>guarded=true</properties>
        </connector>
</operation>
```

3 In the **HP Release Control installation directory\conf\scripts.ext\ sdOperations.js** file, add the **canClose** function:

```
function canClose(genericRFC,userLoginName) {
    var status = genericRFC.getField("status");
    var isStatusNotClosed = (status != STATUS_CLOSED);
    return isStatusNotClosed;
}
```

4 Restart the HP Release Control service.

Creating Dedicated HP Release Control External Access Objects

When HP Release Control is integrated with HP Service Manager, it is recommended to use dedicated external access objects for the **ChangeManagement** Service for HP Release Control.

Instead of using the **Change** and **ChangeTask** external access objects, you create **ChangeRC** and **ChangeTaskRC** external access objects that are dedicated to HP Release Control.

To create ChangeRC and ChangeTaskRC external access objects:

1 Load the HP Release Control unload file as follows:

   a In the HP Service Manager Client, select the Database Manager.

   b Select the **Import/Load** option from the drop-down menu.

   c Load the **extaccess** file from **<HP Release Control installation directory>\examples\service-desk-examples\ ServiceManager\<relevant HP Service Manager directory>\ unload-files**.

   d Click **Load FG**.

2 If you previously exposed any fields in the **Change** object, expose those fields now in the **ChangeRC** object.

3 If you previously exposed any fields in the **ChangeTask** object, expose those fields now in the **ChangeTaskRC** object.

4 Regenerate the Web Services stub file (**.jar**):

   a Run the **ServiceManagerWsdlGen.bat** utility in the **<HP Release Control Installation directory>\bin** directory.

   b From the **<HP Release Control installation directory>\bin\result** directory, copy the **tomcat** folder and overwrite the existing **tomcat** folder in the HP Release Control installation root directory. When asked whether you want to overwrite certain files, click **Yes to all**.

5 Restart the HP Release Control service.

HP Service Manager 7.11 (Webtier) Only: Enabling Access to HP Release Control Interfaces

You can configure your environment to access HP Release Control interfaces, such as the change calendar, directly from HP Service Manager 7.11 (webtier).

To configure your environment to access HP Release Control interfaces from HP Service Manager:

1 Load the HP Release Control unload files as follows:

   a In the HP Service Manager Client, select the Database Manager.

   b Select the **Import/Load** option from the drop-down menu.

   c Load the following HP Service Manager files from **<HP Release Control installation directory>\example\service-desk-examples\ ServiceManager\service-manager-711\unload-files:**

      ➤ **SMRC1.2_Demo_v6.22.unl**

      ➤ **SMRC1.2_Core_v6.22.unl**

Caution: The **SMRC1.2_Demo_v6.22.unl** unload file may overwrite previous menu and format customizations. If you prefer to manually perform the steps carried out by this unload file, instead of loading it, see "Appendix: Manual Steps for SMRC1.2_Demo_v6.22.unl" on page 117.

---

d For each file, click **Load FG**.

2 Copy the contents of **<HP Release Control installation directory>\example\service-desk-examples\ServiceManager\service-manager-711\webtier\images\obj16** to the corresponding HP Service Manager webtier directory.

3 Configure the HP Release Control server URL in HP Service Manager:

a In HP Service Manager, go to **System Administration** > **Base System Configuration** > **Miscellaneous** > **System Information Record**.

b In the **Active Integrations tab**, select **HP Release Control**.

c In the Server URL box, enter the URL of the HP Release Control server. For example:

```
http://server:8080/ccm
```

Adding New Features for HP ServiceCenter

This section includes instructions for adding the following new features for HP ServiceCenter:

➤ "Updating Activity Times from Director/Implementor Module" below

➤ "Updating Planned Times from Change Planner" on page 112

➤ "Viewing Approval Status of User Groups" on page 115

Updating Activity Times from Director/Implementor Module

In the Director and Implementor modules, you can update the actual start and end time of an activity. This section describes how to configure your environment so that when these times are updated in HP Release Control, they are automatically updated in the originating HP ServiceCenter ticket.

For more information about the Director and Implementor modules, see the *HP Release Control User Guide*.

To configure your system to automatically update activity times:

1 Add the **updateStatus** operation for changes and tasks in the **servicemanager-ws-adapter.settings** file.

a Open the **conf\servicemanager-ws-adapter.settings** file.

b In the <**request-type level**="**1**"> element, under the <**operations**> element, paste the following **operation name** sub-element:

```
<operation name="updateStatus">
        <operation-type>updateStatusOperation</operation-type>
        <properties>
                timeout=30
        </properties>
        <connector>
                <connector-type>ServiceCenterChangeUpdate</connector-type>
                <properties>
                        scriptName=updateOperations.js
                        methodName=updateChangeStatus
                </properties>
        </connector>
</operation>
```

c In the <**request-type level**="**2**"> element, under the <**operations**> element, paste the following **operation name** sub-element:

```
<operation name="updateStatus">
        <operation-type>updateStatusOperation</operation-type>
        <properties>
                timeout=30
        </properties>
        <connector>
                <connector-type>ServiceCenterTaskUpdate</connector-type>
                <properties>
                        scriptName=updateOperations.js
                        methodName=updateTaskStatus
                </properties>
        </connector>
</operation>
```

2 In the **HP Release Control installation directory\conf\scripts.ext\ sdOperations.js** file, add the **canUpdateStatus** function:

```
function canUpdateStatus(genericRFC,userLoginName) {
    var status = genericRFC.getField("status");
    var isStatusNotClosed = (status != STATUS_CLOSED);
    return isStatusNotClosed;
}
```

3 Update the **HP Release Control installation directory\conf\servicemanager-ws-adapter.ext\updateOperations.js** file.

a Verify that the following lines appear at the top of the **updateOperations.js** file. If they do not appear, paste them in.

```
importPackage(java.util);
importPackage(Packages.com.peregrine.servicecenter.PWS.Common);
importPackage(Packages.com.peregrine.servicecenter.PWS);
```

b Add the **updateChangeStatus** function.

```
/**
 * Executed when RC updates change implementation status information back to
Service Manager. This method
 * maps the fields between RC and SM and performs additional logic, if required.
 *
 * @param changeInstance an empty instance of SM change/task to fill with the data.
 * @param {Map<String, Object>} fieldsMap a map of fields that the update values from
RC can be taken from. Available fields: actual-start-time, actual-end-time
 * @param {Collection} updatedFields a collection of the fields updated - any field
updated must be added to this collection.
 */
function updateChangeStatus(changeInstance, fieldsMap, updatedFields) {
    var actualStart = fieldsMap.get("actual-start-time");
    var actualEnd = fieldsMap.get("actual-end-time");

    // update the start date
    if (actualStart == null) {
        changeInstance.setImplementationStart(new DateTimeType());
    } else {
        var startDate = Calendar.getInstance(TimeZone.getTimeZone("UTC"));
        startDate.setTimeInMillis(actualStart);
        changeInstance.setImplementationStart(new DateTimeType(startDate));
    }
    updatedFields.add("actual-start-time");

    // update the end date
    if (actualEnd == null) {
        changeInstance.setImplementationEnd(new DateTimeType());
    } else {
        var endDate = Calendar.getInstance(TimeZone.getTimeZone("UTC"));
        endDate.setTimeInMillis(actualEnd);
        changeInstance.setImplementationEnd(new DateTimeType(endDate));
    }
    updatedFields.add("actual-end-time");
}
```

c Add the **updateTaskStatus** function.

```
/**
 * Executed when RC updates task implementation status information back to Service
Manager. This method
 * maps the fields between RC and SM and performs additional logic, if required.
 *
 * @param changeInstance an empty instance of SM change/task to fill with the data.
 * @param {Map<String, Object>} fieldsMap a map of fields that the update values from
RC can be taken from. Available fields: actual-start-time, actual-end-time
 * @param {Collection} updatedFields a collection of the fields updated - any field
updated must be added to this collection.
 */
function updateTaskStatus(changeInstance, fieldsMap, updatedFields) {
    var actualStart = fieldsMap.get("actual-start-time");
    var actualEnd = fieldsMap.get("actual-end-time");

    // update the start date
    if (actualStart == null) {
        changeInstance.setActualStart(new DateTimeType());
    } else {
        var startDate = Calendar.getInstance(TimeZone.getTimeZone("UTC"));
        startDate.setTimeInMillis(actualStart);
        changeInstance.setActualStart(new DateTimeType(startDate));
    }
    updatedFields.add("actual-start-time");

    // update the end date
    if (actualEnd == null) {
        changeInstance.setActualEnd(new DateTimeType());
    } else {
        var endDate = Calendar.getInstance(TimeZone.getTimeZone("UTC"));
        endDate.setTimeInMillis(actualEnd);
        changeInstance.setActualEnd(new DateTimeType(endDate));
    }
    updatedFields.add("actual-end-time");
}
```

4 In the HP ServiceCenter Client (Eclipse Client), go to **System Definition** > **Tables** > **cm3r**. Add the fields **implementationEnd** and **implementationStart**. Set the Data type to **Date/time** and check the **Include in API** box.

5 In the HP ServiceCenter Client, go to **System Definition** >**Tables** > **cm3t**. Add the fields **actualEnd** and **actualStart**. Set the Data type to **Date/time** and check the **Include in API** box.

6 Restart HP ServiceCenter

7 Expose the relevant HP ServiceCenter change fields.

   a In HP ServiceCenter, select **Menu Navigation** > **Toolkit** > **WSDL Configuration**.

   b In the **name** box, type cm3r and press ENTER.

   c In the Data Policy tab, ensure that the following fields with the appropriate properties are included in the list of exposed fields:

Field Name	API Caption	Exclude	API Data Type
implementationEnd	ImplementationEnd	false	DateTimeType
implementationStart	ImplementationStart	false	DateTimeType

8 Expose the relevant HP ServiceCenter task fields.

   a In HP ServiceCenter, select **Menu Navigation** > **Toolkit** > **WSDL Configuration**.

   b In the **name** box, type cm3t and press ENTER.

   c In the Data Policy tab, ensure that the following fields with the appropriate properties are included in the list of exposed fields:

Field Name	API Caption	Exclude	API Data Type
actualEnd	ActualEnd	false	DateTimeType
actualStart	ActualStart	false	DateTimeType

9 Restart HP ServiceCenter.

10 Regenerate the Web Services stub file (**.jar**):

a Run the **ServiceManagerWsdlGen.bat** utility in the <**HP Release Control Installation directory**>**bin** directory.

b From the <**HP Release Control installation directory**>**bin****result** directory, copy the **tomcat** folder and overwrite the existing **tomcat** folder in the HP Release Control installation root directory. When asked whether you want to overwrite certain files, click **Yes to all**.

11 Restart the HP Release Control service.

Updating Planned Times from Change Planner

The Analysis module's Change Planner enables you to simulate the effects of modifying the planned start and end times of a change request. This section describes how to configure your environment so that after you run a simulation, you can save the updated start and end times to the originating service desk.

For more information about the Change Planner, see the *HP Release Control User Guide*.

To configure your system to update times from the Change Planner:

1 Add the **updatePlannedTimes** operation for changes and tasks in the **servicemanager-ws-adapter.settings** file.

a Open the **conf****servicemanager-ws-adapter.settings** file.

b In the <**request-type level**="**1**"> element, under the <**operations**> element, paste the following **operation name** sub-element:

```
<operation name="updatePlannedTimes">
        <operation-type>updatePlannedTimesOperation</operation-type>
        <connector>
                <connector-type>ServiceCenterChangeUpdate</connector-type>
                <properties>
                        scriptName=updateOperations.js
                        methodName=updatePlannedTimes
                </properties>
        </connector>
</operation>
```

c n the <**request-type level**="**2**"> element, under the <**operations**> element, paste the following **operation name** sub-element:

```
<operation name="updatePlannedTimes">
        <operation-type>updatePlannedTimesOperation</operation-type>
        <connector>
                <connector-type>ServiceCenterTaskUpdate</connector-type>
                <properties>
                        scriptName=updateOperations.js
                        methodName=updatePlannedTimes
                </properties>
        </connector>
</operation>
```

2 In the **HP Release Control installation directory\conf\scripts.ext\ sdOperations.js** file, add the **canUpdatePlannedTimes** function:

```
function canUpdatePlannedTimes(genericRFC,userLoginName) {
    var status = genericRFC.getField("status");
    var isStatusNotClosed = (status != STATUS_CLOSED);
    return isStatusNotClosed;
}
```

3 Update the **HP Release Control installation directory\conf\servicemanager-ws-adapter.ext\updateOperations.js** file.

a Verify that the following lines appear at the top of the **updateOperations.js** file. If they do not appear, paste them in.

```
importPackage(java.util);
importPackage(Packages.com.peregrine.servicecenter.PWS.Common);
importPackage(Packages.com.peregrine.servicecenter.PWS);
```

b Add the **updatePlannedTimes** function.

```
/**
 * Executed when RC updates planned times back in Service Manager. This method
 * maps the fields between RC and SM and performs additional logic, if required.
 *
 * @param changeInstance an empty instance of SM change/task to fill with the data.
 * @param {Map<String, Object>} fieldsMap a map of fields that the update values from
RC can be taken from. Available fields: planned-start-time, planned-start-end
 * @param {Collection} updatedFields a collection of the fields updated - any field
updated must be added to this collection.
 */
function updatePlannedTimes(changeInstance, fieldsMap, updatedFields) {
    // Get the field values
    var plannedStartTime = fieldsMap.get("planned-start-time");
    var plannedEndTime = fieldsMap.get("planned-end-time");

    // update the start date
    if (plannedStartTime == null) {
        changeInstance.getHeader().setPlannedStartDate(new DateTimeType());
    } else {
        var plannedStartCalendar =
Calendar.getInstance(TimeZone.getTimeZone("UTC"));
        plannedStartCalendar.setTimeInMillis(plannedStartTime);
        changeInstance.getHeader().setPlannedStartDate(new
DateTimeType(plannedStartCalendar));
    }
    updatedFields.add("planned-start-time");

    // update the End date
    if (plannedEndTime == null) {
        changeInstance.getHeader().setPlannedEndDate(new DateTimeType());
    } else {
        var plannedEndCalendar =
Calendar.getInstance(TimeZone.getTimeZone("UTC"));
        plannedEndCalendar.setTimeInMillis(plannedEndTime);
        changeInstance.getHeader().setPlannedEndDate(new
DateTimeType(plannedEndCalendar));
    }
    updatedFields.add("planned-end-time");
}
```

4 Restart the HP Release Control service.

Viewing Approval Status of User Groups

The approval/retraction of a change request in the Analysis module **Collaborate** > **Resolution** tab, results in an updated status of the request within HP ServiceCenter.

This section describes how to configure your environment so that you can view the approval status of HP ServiceCenter user groups in the **Collaborate** > **Resolution** tab. For example, you can view the user groups whose approval is still required.

For more information about change approval, see the *HP Release Control User Guide*.

To configure your system to view the approval status of user groups:

1 Expose the relevant HP ServiceCenter change fields.

a In HP ServiceCenter, select **Menu Navigation** > **Toolkit** > **WSDL Configuration**.

b In the **name** box, type cm3r and press ENTER.

c In the Data Policy tab, ensure that the following fields with the appropriate properties are included in the list of exposed fields:

Field Name	API Caption	Exclude	API Data Type
approval.structure,approvals.required	ApprovalsRequired	false	
approval.structure,approved.groups	ApprovedGroups	false	
approval.structure,current.pending.groups	CurrentPendingGroups	false	

2 Expose the relevant HP ServiceCenter task fields.

a In HP ServiceCenter, select **Menu Navigation** > **Toolkit** > **WSDL Configuration**.

b In the **name** box, type cm3t and press ENTER.

c In the Data Policy tab, ensure that the following fields with the appropriate properties are included in the list of exposed fields:

Field Name	API Caption	Exclude	API Data Type
approval.structure,approvals.required	ApprovalsRequired	false	
approval.structure,approved.groups	ApprovedGroups	false	
approval.structure,current.pending.groups	CurrentPendingGroups	false	

3 Restart HP ServiceCenter.

4 In the <**HP Release Control installation directory**>**conf****servicemanager-ws-adapter.ext**\ directory, update the **convertChange.js** and **convertTask.js** files.

In both of the above files, add a script at the end of the **convert** function which resembles the following:

```
// Approval Process (Approved Groups, Currently Pending and Approvals Required)
	var sm_approved_groups = scRFC.get("approvalStructure.approvedGroups");
	if (sm_approved_groups != null) {
		genericRFC.setField("approved-groups",
webserviceArrayToString(scRFC.get("approvalStructure.approvedGroups.approvedGro
ups")));}

	var sm_pending_groups = scRFC.get("approvalStructure.currentPendingGroups");
	if (sm_pending_groups != null) {
		genericRFC.setField("current-pending-groups",
webserviceArrayToString(scRFC.get("approvalStructure.currentPendingGroups.current
PendingGroups")));
	}

	var sm_approvals_required = scRFC.get("approvalStructure.approvalsRequired");
	if (sm_approvals_required != null) {
		genericRFC.setField("approvals-required",
webserviceArrayToString(scRFC.get("approvalStructure.approvalsRequired.approvals
Required")));  }
```

5 If you exposed additional new fields above, regenerate the Web Services stub file (**.jar**):

a Run the **ServiceManagerWsdlGen.bat** utility in the **<HP Release Control Installation directory>\bin** directory.

b From the **<HP Release Control installation directory>\bin\result** directory, copy the **tomcat** folder and overwrite the existing **tomcat** folder in the HP Release Control installation root directory. When asked whether you want to overwrite certain files, click **Yes to all**.

6 Restart the HP Release Control service.

Appendix: Manual Steps for SMRC1.2_Demo_v6.22.unl

The **SMRC1.2_Demo_v6.22.unl** file enables you to access HP Release Control interfaces directly from HP Service Manager. This unload file may overwrite previous menu and format customizations. This section describes how to manually perform the steps carried out by this unload file, instead of loading it.

To manually perform the steps carried out by the SMRC1.2_Demo_v6.22.unl file:

1 Add the following four fields in the **Info** table:

Field Name	Data Type
RC	Logical
RC.server.url	Character
RC.SD.name	Character
RC.task	Logical

2 Using the **Form Designer**, modify the **info.company.g** form, by adding the following controls:

Control	Type	Input
HP Release Control	Checkbox	RC
Server URL	Text	RC.server.url
Specified Service Desk	Text	RC.SD.name
Enable RC link for Change Tasks	Checkbox	RC.task

3 For the **ChM** menu name, add the following option:

Description	Application	Condition
RC Calendar	us.launch.rc .calendar	stem.info=1 and nullsub($G.ess, false)=false and sysinfo.get("environment")#"scguiwweb" and lioption("Change Management") and (index("SysAdmin", $lo.ucapex)>0 or index("ChMAdmin", $lo.ucapex)>0 or index("change request", $lo.ucapex)>0)

4 For the **CM DETAIL** menu name, add the following option:

Description	Application	Condition
RC Calendar	us.launch.rc .calendar	RC in $G.system.info=1 and nullsub($G.ess, false)=false and sysinfo.get("environment")#"scguiwweb"

5 To verify this change, open a non-closed change with Affected-CI from the web client and check that the **RC calendar** option is available in the **Detail Options** context menu.

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