HP Project and Portfolio Management Center

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HP Application Lifecycle Management Guide

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Contents

1 Getting Started with Application Lifecycle Management

HP Application Lifecycle Management (ALM) software is a solution for supporting Change Management and Release Management within your organization. The ALM software provides PPM Center entities that support standard Information Technology Infrastructure Library (ITIL) processes and that can be configured to meet your business needs.

ALM software enables you to integrate PPM Center with the following applications:

- Service desk applications, including HP Service Manager
- HP Universal Configuration Management Database (Universal CMDB)
- HP Quality Center
- HP Release Control
- HP Change Control Management

Hereafter in this guide, references to HP Release Control (the successor product to HP Change Control Management) also apply to supported versions of HP Change Control Management.

These integrations help your IT organization standardize and enforce processes that manage application changes throughout the entire software development lifecycle, including development, testing, and deployment.

The versions of these products that are supported for integration with PPM Center are described in the *System Requirements and Compatibility Matrix*.

Installing ALM provides all of the entities that are used by any combination of the integrations you choose to configure and use.

For information about how to obtain the ALM software and how to view or print this guide, see *Overview of Installation and Configuration* on page 25.

Introduction to ITIL and HP Application Lifecycle Management

The Information Technology Infrastructure Library (ITIL) offers the world's most widely accepted approach to IT Service Management (ITSM), furthering the goal of aligning IT with business goals and priorities. ITIL provides frameworks for both the organization of ITSM as well as a cohesive set of industry best practices.

ITIL is a process framework, and HP Project and Portfolio Management Center (PPM Center) is unique in its ability to customize, automate, and digitize processes, simplifying repeatability, enforcement, and measurement.

ITIL defines the Service Support discipline. Building on this advanced-process model, HP Application Lifecycle Management (ALM) uses predefined request types (forms), workflows, and special commands to automate processes and information gathering, and ALM uses portlets and reports to track key performance indicators (KPIs).

ALM supports the following ITIL processes:

- **Change Management.** *Overview of ITIL Change Management* on page 14 provides an overview of the ITIL Change Management process and how ALM supports the process. Chapter 3, *Using ALM Entities,* on page 33 describes the entities provided by ALM for ITIL Change Management.
- **Release Management.** *Overview of ITIL Release Management* on page 16 provides an overview of the ITIL Release Management process and how ALM supports the process. Chapter 3, *Using ALM Entities,* on page 33 describes the entities provided by ALM for ITIL Release Management.

ALM can be used as a starting point, and then extended to support the process requirements that meet the specific needs of your organization. Using these tools, ALM helps enforce repeatable ITIL processes to reduce their operating cost and risk.

Chapter 2, *Installing and Setting Up ALM Software,* on page 25 provides instructions for installing ALM and configuring PPM Center to ensure that ALM functions properly.

Chapter 3, *Using ALM Entities,* on page 33 provides information about the ALM entities, except for a few that are used only for integration of PPM Center with HP Quality Center.

ALM enables integration of PPM Center with the HP Service Manager service desk application. Using these integrations, service desk application changes can be automatically converted to ALM requests for change and imported into PPM Center. In addition, fields in PPM Center can be configured to send updates back to the originating changes in HP Service Manager. For more information, see *Integration of PPM Center with Service Desk Applications* on page 17 and Chapter 4, *Integration of PPM Center with HP Service Manager,* on page 93.

For additional Change Management and Release Management functionality, ALM provides the ability to integrate PPM Center with HP Universal CMDB, with HP Quality Center, and with HP Change Control Management and its successor product, HP Release Control.

Using these integrations and appropriate approvals throughout the process, the ALM - Request for Change workflow (and the ALM subworkflows the workflow calls) does the following:

- Uses HP Universal CMDB to perform preliminary impact analysis on a proposed change.
- Automatically creates HP Quality Center requirements or defects based on associated PPM Center requests and keeps their fields synchronized, providing data visibility in both applications and ensuring that QA personnel create and execute appropriate test plans.
- When adding a package to a release, provides links in an ALM portlet to HP Release Control or HP Change Control Management for that release. HP Release Control or HP Change Control Management displays impact and collision analysis for the release that is poised for deployment to a production (live) system.

For more information about integration of PPM Center with HP Universal CMDB, see *Integration of PPM Center with HP Universal CMDB* on page 19 and Chapter 5, *Integration of PPM Center with Universal CMDB,* on page 141.

For more information about integration of PPM Center with Quality Center, see *Integration of PPM Center with HP Quality Center* on page 20 and Chapter 6, *Integration of PPM Center with Quality Center,* on page 167.

For more information about integration of PPM Center with Release Control or Change Control Management, see *Integration of PPM Center with HP Release Control or HP Change Control Management* on page 21 and Chapter 7, *Integration of PPM Center with Release Control or Change Control Management,* on page 241.

Overview of ITIL Change Management

ITIL defines a *change* as the addition, modification, or removal of an approved, supported, or baselined hardware component, network, software, application, environment, system, or desktop build, or associated documentation. The primary goal of the ITIL Change Management process is to ensure that standardized methods and procedures are used for efficient and prompt handling of all changes, in order to minimize the impact of change-related incidents upon service quality. Although changes often arise as a result of unexpected problems, most changes result from planned requests for change (RFCs) from the business or IT organization.

ALM allows users to submit RFCs along a predefined Request for Change process toward resolution. Portlets provided with ALM can be added to a user's PPM Dashboard to monitor key performance indicators (KPIs) related to the submitted RFCs. Additionally, reports can be run to obtain summaries and scheduling details.

Chapter 3, *Using ALM Entities,* on page 33 discusses the PPM Center entities that ALM provides for use in the ITIL Change Management process, including the following:

- Change Management request type, named ALM - Request for Change (RFC)
- Associated Change Management workflow, named ALM - Request For Change
- Associated Change Management portlets
- Associated Change Management reports

These ALM entities simplify each of the supported integrations with PPM Center, as introduced in *Optional Integrations with PPM Center Enabled by ALM* on page 17.

Change Management Roles

The following roles play an active part in the ITIL Change Management process:

- System Owner
- Change Manager
- CAB group (Change Advisory Board) or CAB/EC group (Change Advisory Board – Emergency Committee)
  - Change Manager
  - Customer(s)
  - Applications Development Manager
  - QA Manager
  - Operations Manager (or maintainers where appropriate)
- Change Builder
- Independent Tester
- Applications Development Manager

In addition to being valuable divisions of responsibility, these roles are used to designate user security for the default ALM - Request For Change workflow (see *ALM - Request For Change Workflow* on page 43).

Overview of ITIL Release Management

ITIL defines a *release* as a collection of new and/or changed components that are tested and introduced into the live (production) environment together. The ITIL Release Management process helps to design and implement efficient procedures for the distribution and installation of changes. This process includes coordinating build and testing activities to help ensure that only the authorized and tested versions of changes are implemented in production. Ultimately, releasing a change requires the following actions:

- Developing the change
- Designing the change
- Testing the change for functionality, quality, and performance
- Pushing the change into production

ALM makes it easier for users to collect information for a release using a release form, which is submitted along a predefined release management process (see *ALM - Release Request Workflow* on page 76). After the initial release process steps have been completed, the release is created and the RFCs that are being processed along the ALM - Request For Change workflow (see *ALM - Request For Change Workflow* on page 43) can be added to the release in preparation for its deployment to the test and live environments. The release management process then moves through testing and deployment steps toward completion. Portlets provided with ALM can be added to a user's PPM Dashboard to monitor the status of releases. Additionally, reports can be run to obtain release summaries and scheduling details.

Chapter 3, *Using ALM Entities,* on page 33 discusses the PPM Center entities that ALM provides for use in the ITIL Release Management process, including the following:

- Release Management request type, named ALM - Release Management
- Associated Release Management workflow, named ALM - Release Request
- Associated Release Management portlets
- Associated Release Management reports

Release Management Roles

The following roles play an active part in the ITIL Release Management process:

- Release Manager
- Test Manager
- Applications Development Manager
- Operations Manager
- Change Manager
- CAB group (Change Advisory Board)

In addition to being valuable divisions of responsibility, these roles are used to designate user security for the default ALM - Release Request workflow (see *ALM - Release Request Workflow* on page 76).

Optional Integrations with PPM Center Enabled by ALM

As described in the following sections, PPM Center version 8.00 can be integrated with various products to enhance the functionality of PPM Center and those products.

Integration of PPM Center with Service Desk Applications

The entities provided with ALM simplify the integration of PPM Center with the HP Service Manager service desk application. Integration provides the following benefits:

- Changes that originate in the service desk application can be automatically imported into PPM Center as requests that PPM Center manages.
- Changes in the HP Service Manager service desk application can be automatically updated, based on revisions to requests in PPM Center.

- PPM Center acts as a single, comprehensive repository of application change requests collected from throughout IT, including change records (tickets) from the service desk application.

The ALM software provides configurable adapter files that serve as the software interface between PPM Center and the HP Service Manager service desk application. An adapter file includes filters and field mappings to convert changes from one data model to the other.

This guide assumes that the service desk application has been installed and is available for integration. For a list of documents about the service desk integrations, see *HP Service Manager Documentation* on page 22.

For detailed information about configuring and using integration of PPM Center with a service desk application, including details about configuring parameters in the `server.conf` file, see Chapter 4, *Integration of PPM Center with HP Service Manager,* on page 93.

Any request type you use for a service desk integration must include the fields in the **Service Desk System Info** section of the ALM - Request for Change (RFC) request type, as shown in *Table 3-2* on page 37, and those fields must be completed. For detailed request type field specifications, see the ALM - Request for Change (RFC) request type in the PPM Workbench.

Using Integration of PPM Center with HP Quality Center To Enhance Integration of PPM Center with Service Desk Applications

Functionality of integration of PPM Center with a service desk application is enhanced if PPM Center and HP Quality Center are also integrated—you can see HP Quality Center statuses for an RFC in the service desk application and in PPM Center.

For general information about the benefits of integrating PPM Center and HP Quality Center whether or not PPM Center and a service desk application are integrated, see *Integration of PPM Center with HP Quality Center* on page 20.

See *ALM - Request for Change (RFC) Request Type* on page 34 for descriptions of the ALM - Request for Change (RFC) request type fields that are related to integration of PPM Center with HP Quality Center.

Integration of PPM Center with HP Universal CMDB

PPM Center can be integrated with HP Universal CMDB, providing the following benefits:

- The Change Advisory Board can use the integration to run an impact analysis in HP Universal CMDB and forecast the effects that each change request will have on the organization's IT environment.
- The resulting report provides the Change Advisory Board with an indication of how the organization's system will cope with each change if the change is later developed and deployed, and thus assists the Change Advisory Board in deciding whether to approve certain changes for development.
- Your system infrastructure, such as servers or applications, might get modified while the software change is being developed and evaluated for quality. As a result, the original impact analysis for the change might not be valid. After the change has been evaluated and approved for deployment, you can perform another impact analysis.

This guide assumes that HP Universal CMDB has been installed and is available for integration.

For a list of documents about HP Universal CMDB, see *HP Universal CMDB Documentation* on page 23.

For detailed information about configuring and using integration of PPM Center with HP Universal CMDB, including details about configuring parameters in the `server.conf` file, see Chapter 5, *Integration of PPM Center with Universal CMDB,* on page 141.

Integration of PPM Center with HP Quality Center

PPM Center can be integrated with HP Quality Center to incorporate the quality assurance (QA) process into the change request development process, providing the following benefits:

- Integration and enforcement of QA testing into the change process. The QA process can be initiated when the development process begins, and QA planning activities can proceed in parallel with development. The QA teams can then spend more time testing changes after development has been completed.
- Management and tracking of test requirements, plans, and results in HP Quality Center, with visibility in PPM Center.
- Data sharing between PPM Center and HP Quality Center.
- Automatic activation of HP Quality Center processes by PPM Center. Creating a request in PPM Center can create a requirement or defect in HP Quality Center.
- Automatic ongoing synchronization of defects and requirements in Quality Center with requests in PPM Center, as well as *hierarchical* synchronization of requirements in HP Quality Center with requests in PPM Center.

This guide assumes that HP Quality Center has been installed and is available for integration.

For a list of documents about HP Quality Center, see *HP Quality Center Documentation* on page 23.

For detailed information about configuring and using integration of PPM Center with HP Quality Center, including details about configuring parameters in the `server.conf` file, see Chapter 6, *Integration of PPM Center with Quality Center,* on page 167.

Integration of PPM Center with HP Release Control or HP Change Control Management

PPM Center can be integrated with HP Release Control or HP Change Control Management to assist IT managers and the Change Advisory Board in providing the following benefits:

- Assessing the business impact of changes that have been developed and tested, and deciding whether to approve the changes for deployment
- Providing information about the components in the organization's IT environment that will be impacted by the developed changes
- Proactively sending notifications of the business risk involved in each change
- Identifying potential conflicts among concurrently scheduled changes
- Improving visibility over the change deployment process

During the impact analysis phase of the Request for Change lifecycle, if PPM Center is integrated with both HP Release Control (or HP Change Control Management) and Universal CMDB, the **Launch HP Release Control** button appears on the request. When launched, HP Release Control (or HP Change Control Management) provides additional impact analysis that helps users assess and approve changes.

For each change request, the ALM - Releases portlet provides a link to log in to HP Release Control (or HP Change Control Management), where various tabs contain information about the change requests.

This guide assumes that HP Release Control or HP Change Control Management has been installed and is available for integration.

For a list of documents about HP Release Control, see *HP Release Control Documentation* on page 23. For a list of documents about HP Change Control Management, see *HP Change Control Management Documentation* on page 24.

For detailed information about configuring and using integration of PPM Center with HP Release Control or Change Control Management, including details about configuring parameters in the `server.conf` file, see Chapter 7, *Integration of PPM Center with Release Control or Change Control Management,* on page 241.

Related Information

The following sections categorize documentation that may be useful for ALM deployments.

PPM Center Documentation

The following PPM Center documents provide information that may be useful to you:

- *HP Demand Management User's Guide*
- *HP Demand Management Configuration Guide* (includes information about configuring request types and workflows)
- *Creating Portlets and Modules*
- *Reports Guide and Reference*
- *HP Deployment Management User's Guide*
- *Installation and Administration Guide*

HP Service Manager Documentation

The following HP Service Manager documents are not directly related to PPM Center or integrations with PPM Center, but they may be useful to you:

- *HP Service Manager Installation Guide*
- HP Service Manager Help system

HP Universal CMDB Documentation

The following HP Universal CMDB documents are not directly related to PPM Center or integrations with PPM Center, but they may be useful to you:

- *HP Universal CMDB Deployment Guide*
- *HP Universal CMDB Database Guide*
- *HP Universal CMDB Discovery and Dependency Mapping*
- *HP Universal CMDB Model Management*
- *HP Universal CMDB CI Attribute Customization*
- *HP Universal CMDB Glossary*
- *HP Universal CMDB 7.50 Readme*

HP Quality Center Documentation

The following HP Quality Center documents are not directly related to PPM Center or integrations with PPM Center, but they may be useful to you:

- *HP Quality Center Installation Guide*
- *HP Quality Center User's Guide*
- *HP Quality Center Administrator's Guide*

HP Release Control Documentation

The following HP Release Control documents are not directly related to PPM Center or integrations with PPM Center, but they may be useful to you:

- *HP Release Control Installation and Configuration Guide*
- *HP Release Control User Guide*

HP Change Control Management Documentation

The following HP Change Control Management documents are not directly related to PPM Center or integrations with PPM Center, but they may be useful to you:

- *HP Change Control Management Installation and Configuration Guide*
- *HP Change Control Management User's Guide*

2 Installing and Setting Up ALM Software

Overview of Installation and Configuration

Installing and setting up ALM software includes the following procedures, as described in this chapter:

- Installing the ALM software
- Configuring particular ALM-related entities in PPM Center
- Restarting the PPM Server

Configuration activities that are unique to the integrations with service desk applications, HP Quality Center, HP Release Control or HP Change Control Management, and HP Universal CMDB are described in their respective chapters.

System Requirements

Before you can install and use HP Application Lifecycle Management version 2.00, you must install PPM Center version 8.00.

To use the request types and workflows provided by ALM, verify that you have user licenses for PPM Center Demand Management. For information about permissions, configuration, and security, see the *HP Demand Management Configuration Guide* and the *Security Model Guide and Reference*.

Installing HP Application Lifecycle Management

Install HP Application Lifecycle Management (ALM) as described in the following sections.

Considerations If HP Managing Application Change (MAC) Is Installed

If HP Managing Application Change (MAC) was used with PPM Center version 7.5, the ALM entities such as request types and workflows do *not* overwrite the analogous MAC entities when ALM is installed. The ALM and MAC entities can coexist and can be used independently.

If PPM Center was upgraded from version 7.5 to version 8.00, if you used Managing Application Change (MAC) entities with version 7.5 for integrations, and if you plan to use ALM entities with version 8.00 for integrations, you must reestablish the integrations as described in this guide.

Integration of PPM Center with Mercury Application Mapping was supported with PPM Center version 7.5 and MAC, but integration of PPM Center with Mercury Application Mapping is *not* supported with PPM Center version 8.00 and ALM. The MAM Impact Analysis field group is no longer available in version 8.00. During an upgrade of PPM Center to version 8.00, any MAM Impact Analysis reports in version 7.5 are attached to the associated requests as references, so the reports remain available to view after the upgrade.

General Preparations for Installation

To prepare for installation:

1. Obtain the ALM software.
2. Log on to the PPM Server.
3. Confirm that the system requirements have been met. See *System Requirements* on page 25.
4. Save the ALM installation file (`ppm-800-ALM.jar`) to the `<PPM_Home>` directory. `<PPM_Home>` represents the path where the PPM Center instance is installed. For example: `xyzserver/E/PPMServer`.

You do not need to unpack the installation file. The installation process automatically unpacks it.

Perform Backup and Restart the PPM Server in Restricted Mode

The steps in this section are recommended but not required.

For more information about the steps in this procedure, see the *Installation and Administration Guide*.

Before installation, do the following:

1. Back up the database and file system for the PPM Server.
2. Stop the PPM Server and restart it in restricted mode, as follows:
   a. Stop the PPM Server.
   b. Run the following script:

      ```
      sh ./setServerMode.sh RESTRICTED
      ```

   c. Start the PPM Server.

Run the Installation Script

To run the installation script to install the ALM software:

1. Navigate to the `<PPM_Home>/bin` directory.
2. Run the following script:

   ```
   sh ./kDeploy.sh -i ALM
   ```

3. As `kDeploy.sh` runs, respond to its prompts.

   When the installation completes successfully, the following message is displayed:

   ```
   Deployment ALM has been successfully installed.
   ```

The following sections in this chapter describe initial configuration of ALM.

Configuring ALM-Related Entities in PPM Center

After installing ALM software, perform the procedures described in the following sections.

Creating Contact User Data

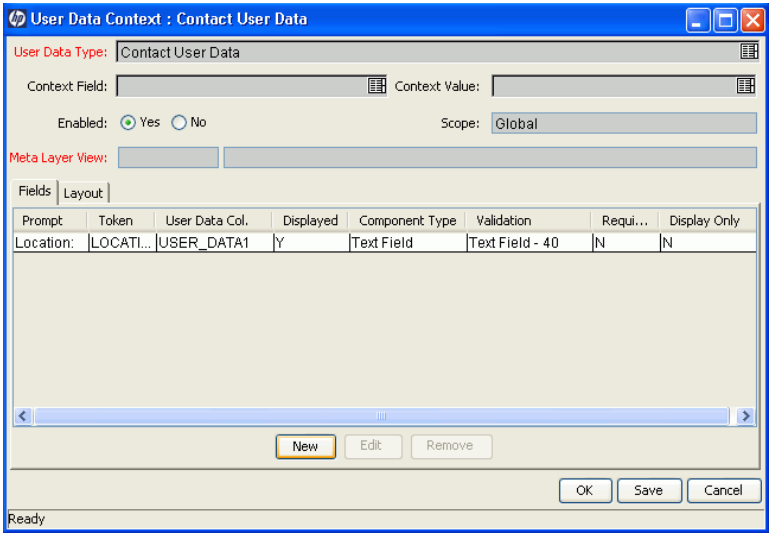
To use the ALM - Request for Change (RFC) request type, you must create a global user data field of type **Contact User Data,** whether or not you will be establishing any of the integrations of PPM Center with other applications. When you select a contact in the RFC, the value in the contact's **USER_DATA1** field populates the **Contact Location** field in the RFC. *Table 2-1* describes the important parameters for this field. *Figure 2-1* shows the User Data Context window.

In the PPM Workbench, select **Configuration > User Data** and select **Contact User Data** to access the User Data Context window. For more information about creating user data, see the *HP Demand Management Configuration Guide.*

Table 2-1. Contact user data field parameters

Field Name	Value
Prompt	Location:
Token	LOCATION
User Data Column	USER_DATA1
Displayed	Y
Component Type	Text Field
Validation	(any text field of reasonable length)

Figure 2-1. Contact user data field



Configuring the CRT - Priority - Enabled Validation

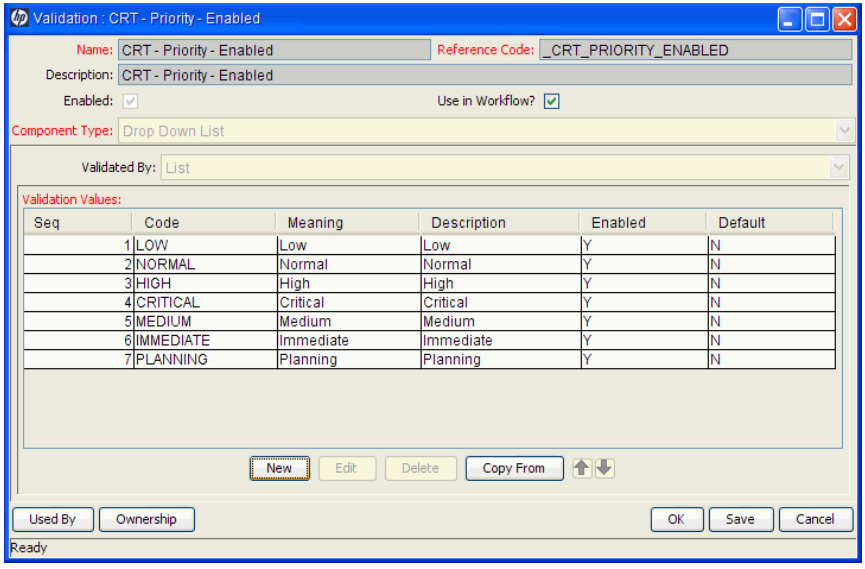
To use the ALM - Request for Change (RFC) request type, you must add the values listed in *Table 2-2* to the **CRT - Priority - Enabled** validation, whether or not you will be establishing any of the integrations of PPM Center with other applications. These priority values are used as default values and in rules. The rules determine priority from values specified in the **Impact** and **Severity** fields in the RFC. *Figure 2-2* shows the Validation window.

In the PPM Workbench, select **Configuration > Validations** and select **CRT - Priority - Enabled** to access the Validation window. For more information about modifying validations, see the *Commands, Tokens, and Validations Guide and Reference.*

Table 2-2. Values to add to CRT - Priority - Enabled validation

Code	Meaning
MEDIUM	Medium
IMMEDIATE	Immediate
PLANNING	Planning

Figure 2-2. CRT - Priority - Enabled validation



Assigning Users to ALM Security Groups

ALM provides the following security groups:

- ALM - Application Developer
- ALM - Applications Development Manager
- ALM - CAB group (Change Advisory Board)
- ALM - Change Builder
- ALM - Change Manager
- ALM - Customer
- ALM - IT Executive Board
- ALM - Independent Tester
- ALM - Operations Manager
- ALM - QA Manager
- ALM - Release Manager
- ALM - SOX - System Owner

Users must belong to an appropriate security group to be able to see particular portlets. Add users to these security groups, whether or not you will be establishing any of the integrations of PPM Center with other applications. In the PPM Workbench, select **Sys Admin > Users,** open a user, and click the **Security Groups** tab. For more information about security groups, see the *Security Model Guide and Reference.*

Assigning Security Groups to ALM Workflows

ALM provides several workflows. The major ones are described in detail in this document. Assign security groups to each workflow step in the manner that best meets your business needs, whether or not you will be establishing any of the integrations of PPM Center with other applications. In the PPM Workbench, select **Configuration > Workflows,** open a workflow, and edit it. For more information about configuring security groups in workflows, see the *HP Demand Management Configuration Guide.*

Restarting the PPM Server in Normal Mode

For more information about the steps in this procedure, see the *Installation and Administration Guide*.

After you have completed all installation and configuration procedures, if you previously restarted the PPM Server in restricted mode, to stop and restart the PPM Server in normal mode:

1. Stop the PPM Server.
2. Run the following script:

   ```
   sh ./setServerMode.sh NORMAL
   ```

3. Start the PPM Server.

For More Information

ALM provides request types, workflows, portlets, and reports that can be configured to fit your business needs. For detailed information, see Chapter 3, *Using ALM Entities,* on page 33.

You can use the ALM entities whether or not you establish any of the supported integrations of PPM Center with other applications. You can configure those integrations at any time after you have installed and configured ALM as described in this chapter. For more information, see *Optional Integrations with PPM Center Enabled by ALM* on page 17 and the integration-related chapters to which that section refers.

3 Using ALM Entities

Overview of ALM Entities

This chapter describes the request types, workflows, portlets, reports, and special commands (the “entities”) provided in ALM to facilitate implementation of ITIL processes. Some of these entities are also used by the integrations with external service desk applications and other HP products.

The ALM entities provided for change management are described first, then the entities for release management are described, and then the special commands.

Several ALM entities that are used only for integrations of PPM Center with HP Quality Center are described in Chapter 6, *Integration of PPM Center with Quality Center,* on page 167.

For More Information

The request types, workflows, portlets, reports, and special commands provided with ALM can be configured to fit your business needs. *Table 3-1* lists the types of entities and the associated PPM Center guides to which you should refer for configuration information.

Table 3-1. PPM Center entities and associated configuration guides

Entity	Configuration Guide
Request type	*HP Demand Management Configuration Guide*
Workflow	*HP Demand Management Configuration Guide*
Portlet	*Creating Portlets and Modules*
Report	*Reports Guide and Reference*
Special command	*Commands, Tokens, and Validations Guide and Reference*

ALM - Request for Change (RFC) Request Type

In its implementation of the ITIL Change Management process, ALM uses the ALM - Request for Change (RFC) request type and sends an RFC request along the ALM - Request For Change workflow (see *ALM - Request For Change Workflow* on page 43).

Figure 3-1 and *Figure 3-2* show the top and bottom of the Create New ALM - Request for Change (RFC) page that appears when you create a request and select the ALM - Request for Change (RFC) request type. *Table 3-2* on page 37 describes the fields in the ALM - Request for Change (RFC) request, including some fields that do not appear until the request is created or until other conditions are met.

Figure 3-1. Top of ALM - Request for Change (RFC) request

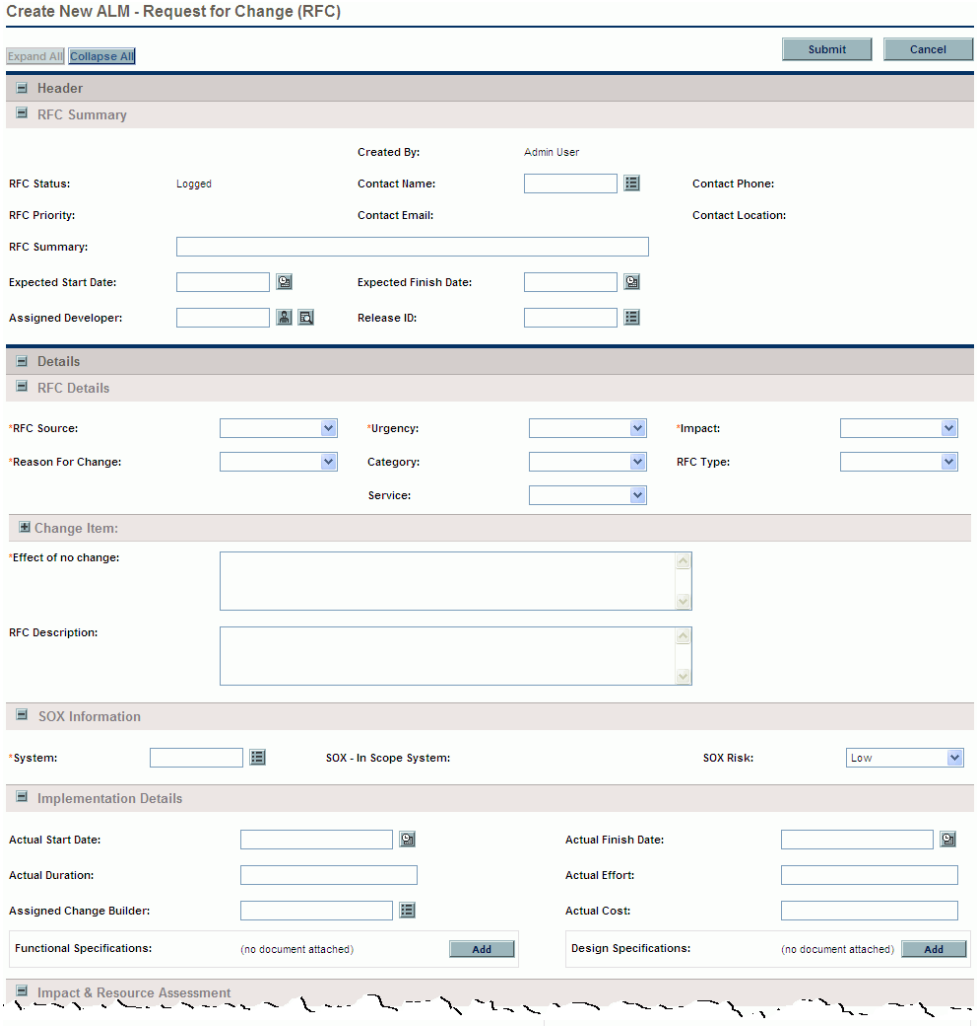


Figure 3-2. Bottom of ALM - Request for Change (RFC) request

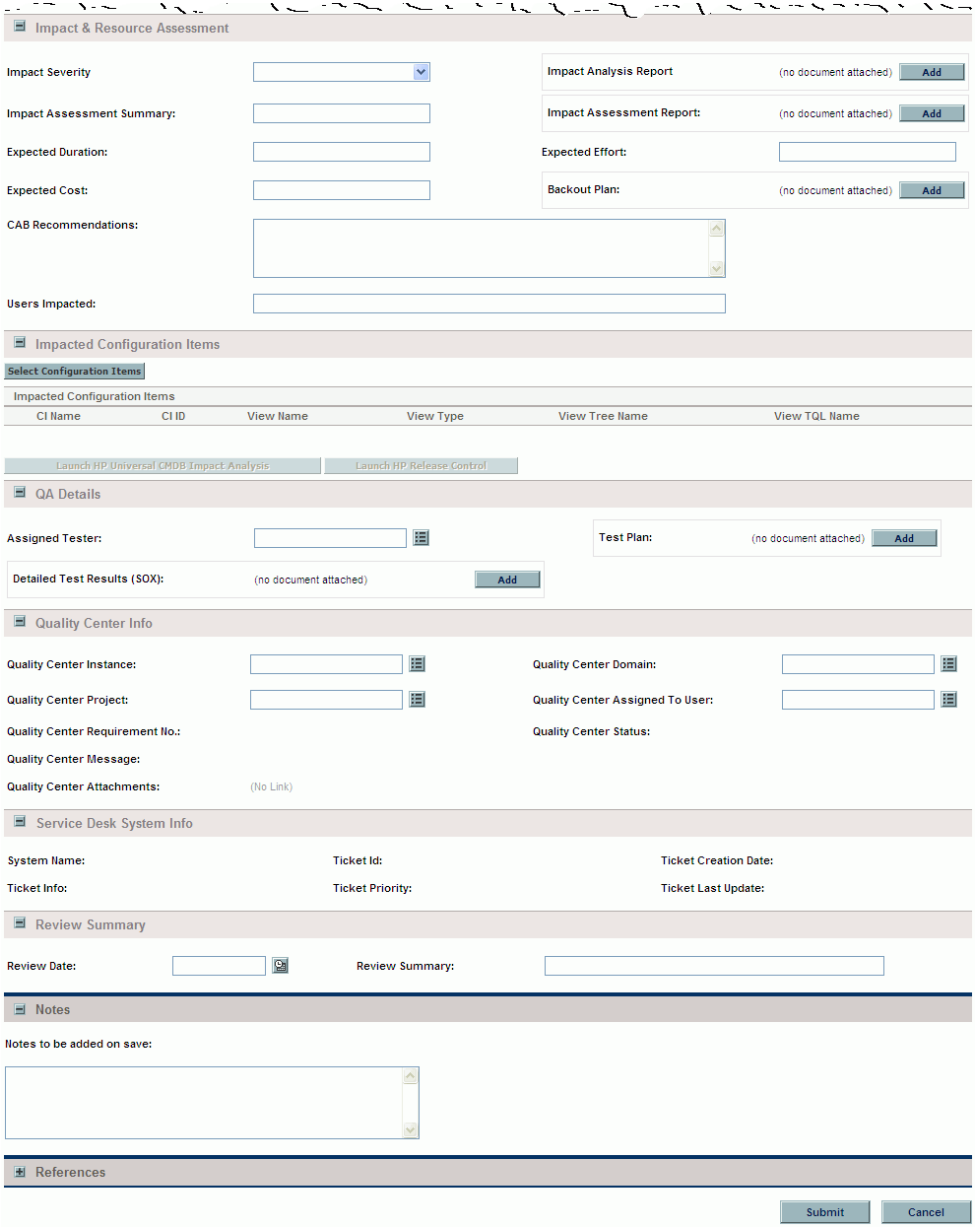


Table 3-2. ALM - Request for Change (RFC) request fields (page 1 of 6)

Field Name (*Required)	Description
RFC Summary section	
RFC ID	(Read-only. Added after the RFC is created.) Number of the RFC, linked to the RFC.
Created By	(Read-only) User who created the RFC.
Created On	(Read-only. Added after the RFC is created.) Date the RFC was created.
RFC Status	(Read-only) Status of the RFC.
Contact Name	Name of the person proposing the change.
Contact Phone	(Read-only) Telephone number of the person proposing the change.
RFC Priority	(Read-only) Priority of the change request. Determined by a combination of the **Urgency** and **Impact** fields.
Contact Email	(Read-only) Email address of the RFC contact person.
Contact Location	(Read-only) Location of the person proposing the change.
RFC Summary	Summary description of the RFC request.
Expected Start Date	Expected start date for work on the RFC.
Expected Finish Date	Expected end date for work on the RFC.
Assigned Developer	Developer assigned to work on the RFC.
Release ID	Number of the release if the change was released.
RFC Details section	
*RFC Source	Source of the RFC request (for example, from a problem or incident).
*Urgency	Urgency of the change request (for example, from problem urgency).
*Impact	Business impact of doing or not doing the change (for example, from problem impact).

Table 3-2. ALM - Request for Change (RFC) request fields (page 2 of 6)

Field Name (*Required)	Description
*Reason For Change	Reason for the change.
Category (Required only after the request is created)	Category of the change, based on the scope of the change.
RFC Type	Type of change being requested.
Service	IT service that needs the change.
Change Item	(Looks like a separate section in the interface) Expand to display a table of change items. If the RFC has been created, click the **Modify Table** button to add a change item. The table consolidates existing change items (CIs), each having an automatically assigned sequence number (**Seq**), a **CI Type** (**Software, Hardware,** or **Network**), a **CI Name,** and a **CI Description.**
*Effect of no change	Effect of not implementing the change.
RFC Description	Description of the change request.
Authorized By	(Added after the RFC is created and assigned to a developer) Person who authorized the change.
Authorization Date	(Added after the RFC is created and assigned to a developer) Date the developer was assigned.
SOX Information section	
*System	System that is impacted by the change.
SOX - In Scope System	(Read-only) SOX requirement: SOX oversight is required for any application that directly or indirectly affects financial reporting. This field is automatically populated with a value of **Yes** or **No** before the RFC is created, based on the option chosen for the **System** field.

Table 3-2. ALM - Request for Change (RFC) request fields (page 3 of 6)

Field Name (*Required)	Description
SOX Risk	SOX requirement: Risk is determined as part of SOX oversight. **Note:** A change to a non-SOX system could be high-risk based on possible infrastructure/network impact.
System Owner	(Read-only. Added after the RFC is created.) Owner of the system. This field is automatically populated, based on the option chosen for the **System** field.
Implementation Details section	
Actual Start Date	Actual start date for creation of the change.
Actual Finish Date	Actual finish date for creation of the change.
Actual Duration	Actual duration for creation of the change.
Actual Effort	Actual effort expended during creation of the change.
Assigned Change Builder	Details of the change builder/implementer.
Actual Cost	Actual cost of the change.
Functional Specifications	Allows you to add and view the functional specification document directly on the RFC.
Design Specifications	Allows you to add and view the design specification document directly on the RFC.

Table 3-2. ALM - Request for Change (RFC) request fields (page 4 of 6)

Field Name (*Required)	Description
Impact & Resource Assessment section	
Impact Severity	Specify after evaluating the Impact Analysis Report. This field becomes required by the ALM - Impact & Resource Assessment Sub WF subworkflow after CIs are selected in the **Impacted Configuration Items** section.
Impact Analysis Report	Allows you to add and view an Impact Analysis Report generated by Universal CMDB directly on the request.
Impact Assessment Summary	Risk assessment of the impact of the change on related components in the configuration management database (CMDB).
Impact Assessment Report	Allows you to add and view a manually generated impact assessment report based on the Impact Analysis Report directly on the RFC.
Expected Duration	Expected duration for creation of the change.
Expected Effort	Expected effort for creation of the change.
Expected Cost	Expected cost of the change.
Backout Plan	Allows you to add and view the backout plan document directly on the RFC.
CAB Recommendations	CAB recommendations, where appropriate.
Users Impacted	Users expected to be impacted by the change.
Impacted Configuration Items section [a]	
Select Configuration Items button	Button to launch the CI selector applet provided by Universal CMDB.
Impacted Configuration Items list	List of CIs added to the request, both manually and by using the CI selector applet from Universal CMDB.
QA Details section	
Assigned Tester	Person assigned to test the change.

Table 3-2. ALM - Request for Change (RFC) request fields (page 5 of 6)

Field Name (*Required)	Description
Test Plan	Allows you to add and view the test plan directly on the RFC.
Detailed Test Results (SOX)	Allows you to add and view the detailed test results directly on the RFC.
Quality Center Info section [b]	
Quality Center Instance	Quality Center instance that will receive the new PPM Center request.
Quality Center Domain	Quality Center domain of the working project.
Quality Center Project	Quality Center project that is linked with this request.
Quality Center Assigned To User	User assigned to the Quality Center requirement.
Quality Center Requirement No.	(Read-only) Quality Center requirement number.
Quality Center Status	(Read-only) Quality Center requirement status.
Quality Center Message	(Read-only) Message indicating whether the last update to the request was successful in Quality Center.
Quality Center Attachments	(Read-only) URL of the attached requirement document.
Service Desk System Info section [c]	
System Name	(Read-only) Name of the service desk application.
Ticket Id	(Read-only) Ticket ID in the service desk application.
Ticket Creation Date	(Read-only) Ticket creation date in the service desk application.
Ticket Info	(Read-only) Ticket info from the service desk application.
Ticket Priority	(Read-only) Ticket priority in the service desk application.
Ticket Last Update	(Read-only) Date the ticket was last updated in the service desk application.

Table 3-2. ALM - Request for Change (RFC) request fields (page 6 of 6)

Field Name (*Required)	Description
Review Summary section	
Review Date	Review date for the change.
Review Summary	Summary of the review for the change.

a. The Impacted Configuration Items section is visible only if the Universal CMDB Impact Analysis field group is enabled in the request type. Data is presented for the Impacted Configuration Items list in this section only if PPM Center is integrated with Universal CMDB.

b. Fields in the Quality Center Info section remain visible by default but are not used if PPM Center is not integrated with HP Quality Center.

c. Fields in the Service Desk System Info section remain visible by default but are not used if PPM Center is not integrated with a service desk system. However, when this request type (or any other request type) is used for a service desk integration, these fields are required.

The administrator can remove the **Impacted Configuration Items** section or the **Quality Center Info** section from the request type by removing the Universal CMDB Impact Analysis field group or the Quality Center Info field group, respectively, from the ALM - Request for Change (RFC) Header request header type.

See the *HP Demand Management Configuration Guide* for details about request header types and field groups.

To submit an ALM - Request for Change (RFC) request:

1. Log on to PPM Center.
2. From the menu bar, select **Create > Request.**

   The Create New Request page appears.
3. On the Create New Request page, in the **Request Type** field, select **ALM - Request for Change (RFC)** and click **Create.**

   The Create New ALM - Request for Change (RFC) page appears, displaying the appropriate RFC fields.

   Required fields have a red asterisk. All other fields are optional, but are often helpful when others are reviewing an open request. For information concerning a specific field, click the **Help** icon next to the field (if available).

4. Complete the fields in all sections as appropriate.

   The **Notes** section contains fields where notes and information concerning the RFC can be entered and stored. Typically, when you create an RFC, you do not need to add a note to it. However, add a note if you want to convey additional information to the reviewers and processors of the RFC.

   In the **References** section of the RFC, you can add useful references such as a Web-accessible file or a document or file attached from a local machine. Additionally, other entities such as packages, releases, or other related requests may be automatically referenced based on the workflow steps that have been executed. For more information about adding references, see the *HP Demand Management User's Guide.*

5. On the Create New Request page, click **Submit.**

   The RFC is submitted. The Request Creation Confirmed page appears.

PPM Center can be configured to allow you to save the request before you submit it. To have this feature enabled, see your application administrator.

After submitting the request, on the Request Creation Confirmed page you can click the link for the particular request number in the **Request #** field to view the detail page of the newly generated RFC.

When the RFC is submitted, it is assigned an initial status, such as New. The RFC is then routed along the ALM - Request For Change workflow (see *ALM - Request For Change Workflow*).

ALM - Request For Change Workflow

The ALM - Request For Change workflow is the sequence of approvals, decisions, or actions by which the RFC is processed. The RFC starts at the beginning of the workflow. When the RFC reaches the end of the workflow, its lifecycle is complete.

Upon creation, an ALM - Request For Change (RFC) request is automatically set to use the ALM - Request For Change workflow.

Figure 3-3 shows the workflow. *Table 3-3* lists the important steps in the workflow and the user roles associated with those steps.

Figure 3-3. ALM - Request For Change workflow

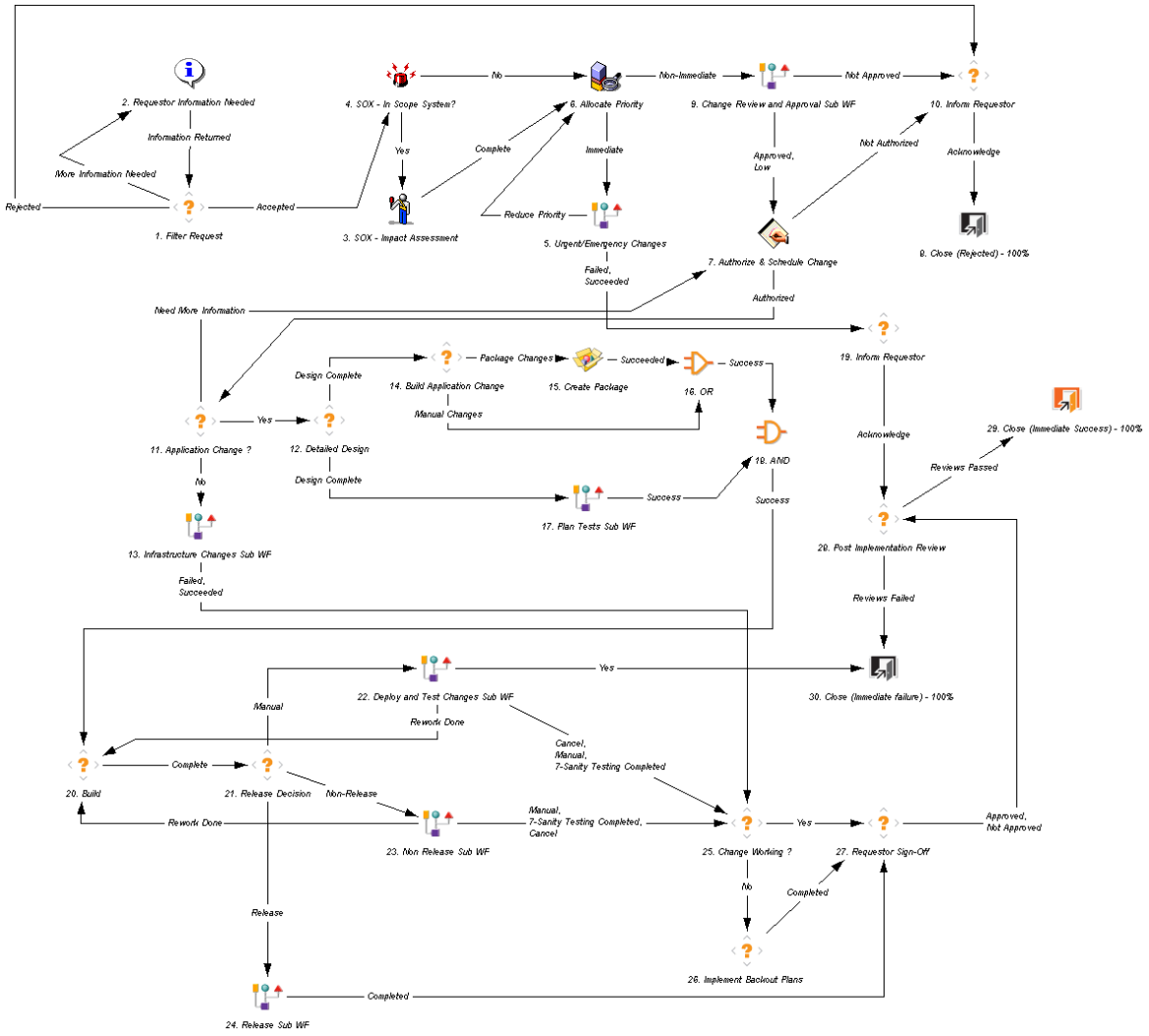


Table 3-3. ALM - Request For Change workflow steps (page 1 of 3)

Step	User Security	Description
1. Filter Request	ALM - Change Manager	Perform initial review and classification of the change request, and determine if this RFC is acceptable based on company policy.
4. SOX - In Scope System?	Fully automated step	SOX requires identification of key systems related to accurate financial reporting, directly or indirectly. This field is automatically determined based on the system selected.
3. SOX - Impact Assessment	ALM - SOX - System Owner	SOX requires additional impact assessment for any change that could affect financial reporting. The impact of not doing the change must be considered as well.
6. Allocate Priority	ALM - Change Manager	Validate RFC priority and determine if this is an Urgent Change request.
5. Urgent/ Emergency Changes	(None)	Call a subworkflow designed to handle urgent or emergency changes, described in *ALM - RFC - Urgent Change Management Sub WF Subworkflow* on page 49.
9. Change Review and Approval Sub WF	ALM - Change Manager	Call a subworkflow to manage the review and approval process for the RFC, described in *ALM - Change Review and Approval Sub WF Subworkflow* on page 50. (This subworkflow can, in turn, call the ALM - Impact & Resource Assessment Sub WF subworkflow.)
7. Authorize & Schedule Change	ALM - Change Manager	Authorize the change request and schedule change for implementation.
11. Application Change ?	ALM - Change Manager	Determine if this is an application change.

Table 3-3. ALM - Request For Change workflow steps (page 2 of 3)

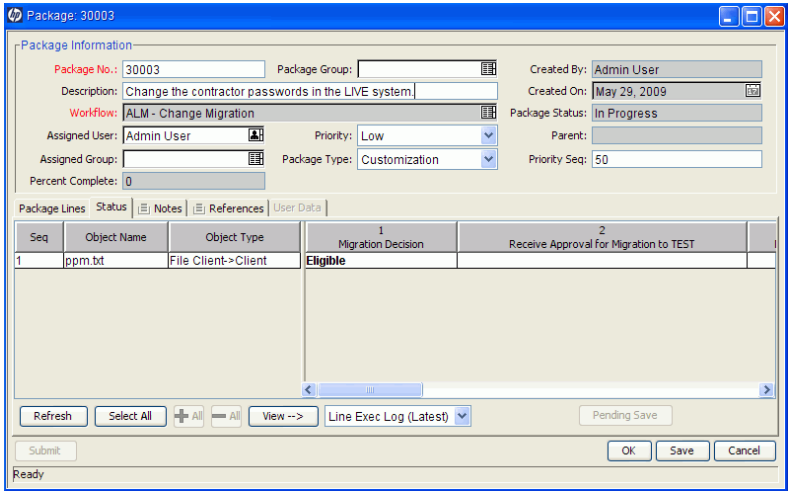
Step	User Security	Description
13. Infrastructure Changes Sub WF	(None)	Call a subworkflow to handle non-application changes, described in *ALM - Infrastructure Changes Sub WF Subworkflow* on page 53.
12. Detailed Design	ALM - Application Developer	Create functional and design specification documents.
14. Build Application Change	ALM - Application Developer	Build application code for the change.
15. Create Package	ALM - Application Developer	Create a package with the code changes. This step automatically creates a package and adds the package as a reference to the RFC request. *Figure 3-4* on page 48 illustrates a typical RFC package.
17. Plan Tests Sub WF	(None)	Call a subworkflow to manage the test planning process for the RFC, described in *ALM - Plan Tests Sub WF Subworkflow* on page 54.
20. Build	ALM - Change Builder	Build the change, in preparation for implementation. For an application change, add code components to the referenced package in the PPM Workbench (see the Create Package step).
21. Release Decision	ALM- Change Builder	Select the option to implement this application change as part of a release or independently.
22. Deploy and Test Changes Sub WF	(None)	Call a subworkflow for deploying and testing changes, described in *ALM - Deploy and Test Changes Sub WF Subworkflow* on page 56.
23. Non Release Sub WF	(None)	Call a subworkflow for change deployment not involving a release, described in *ALM - Non Release Sub WF Subworkflow* on page 58.

Table 3-3. ALM - Request For Change workflow steps (page 3 of 3)

Step	User Security	Description
24. Release Sub WF	(None)	Call a subworkflow for change deployment involving a release, described in *ALM - Release Sub WF Subworkflow* on page 60.
25. Change Working?	ALM - Change Manager	Review whether the change was successfully implemented with no adverse impact.
26. Implement Backout Plans	ALM - Operations Manager	If the change is not working, implement backout plans to back out the change from the LIVE environment.
27. Requestor Sign-Off	ALM - Change Manager	Get sign-off from the requestor of the change to acknowledge that the change was implemented.
28. Post Implementation Review	ALM - Change Manager	Review the change after implementation to determine whether the change process was followed correctly.
29. Close (Immediate Success) - 100%	(None)	Update status to **Closed.**

Step 15 in the ALM - Request for Change workflow creates a package to deploy and test changes, and the step adds the package as a reference to the RFC request. This package requires specifying a workflow, and the default is the ALM - Change Migration workflow, as shown in the example in *Figure 3-4*. Step 22 in the ALM - Request for Change workflow calls the ALM - Deploy and Test Changes Sub WF subworkflow to deploy and test the package.

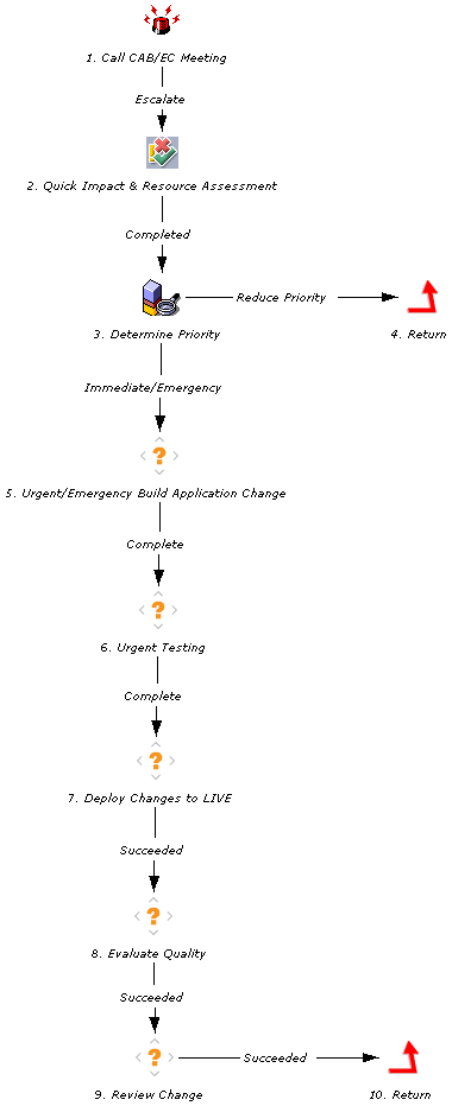
Figure 3-4. Package created for ALM - Request For Change workflow



ALM - RFC - Urgent Change Management Sub WF Subworkflow

ALM provides an “Urgent Change” process. If a change is categorized as **Urgent,** the RFC is routed along the Urgent Change process. The ALM - RFC - Urgent Change Management Sub WF subworkflow is designed to efficiently handle impact assessment, prioritization, and creation of the change. *Figure 3-5* shows the subworkflow.

Figure 3-5. ALM - RFC - Urgent Change Management Sub WF subworkflow



ALM - Change Review and Approval Sub WF Subworkflow

The ALM - Change Review and Approval Sub WF subworkflow provides a modular review and approval process for the RFC. *Figure 3-6* shows the subworkflow. *Table 3-4* lists the important steps in the subworkflow and the user roles associated with those steps.

Figure 3-6. ALM - Change Review and Approval Sub WF subworkflow

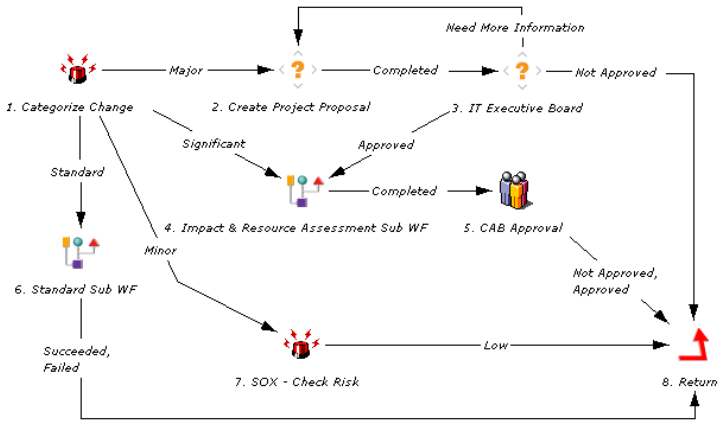


Table 3-4. ALM - Change Review and Approval Sub WF subworkflow steps

Step	User Security	Description
1. Categorize Change	ALM - Change Manager	Categorize the change to determine the next step in the workflow.
2. Create Project Proposal	ALM - CAB group (Change Advisory Board)	If the change is classified as “Major,” create a project proposal that includes impact.
3. IT Executive Board	ALM - IT Executive Board	If the change is classified as “Major,” an IT Executive Board is responsible for approving the change.
4. Impact & Resource Assessment Sub WF	(None)	If the change is classified as “Significant,” call a subworkflow to determine the impact on dependent infrastructure components and estimate the time and cost of resources, as described in *ALM - Impact & Resource Assessment Sub WF Subworkflow* on page 52.
5. CAB approval	ALM - CAB group (Change Advisory Board)	Iterative review by CAB members, resulting in an authorization go/no go decision (includes change priority, schedule, impact, and cost).
6. Standard Sub WF	(None)	Call a subworkflow to track standard changes.

ALM - Impact & Resource Assessment Sub WF Subworkflow

The ALM - Impact & Resource Assessment Sub WF subworkflow provides a modular process for assessing change impact and planning resource usage. *Figure 3-7* shows the ALM - Impact & Resource Assessment Sub WF subworkflow. *Table 3-5* lists the important steps in the subworkflow and the user roles associated with those steps.

Figure 3-7. ALM - Impact & Resource Assessment Sub WF subworkflow

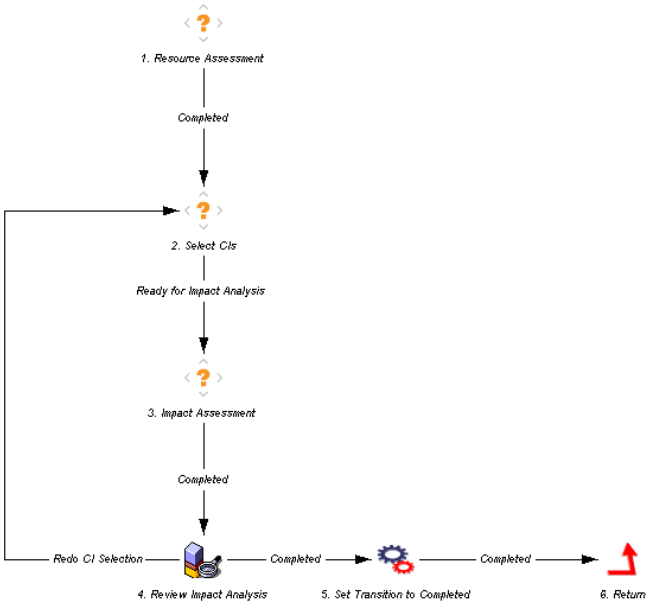


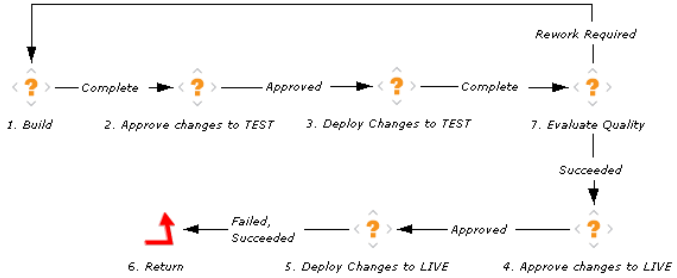
Table 3-5. ALM - Impact & Resource Assessment Sub WF subworkflow steps

Step	User Security	Description
1. Resource Assessment	ALM - Change Manager	User estimates time and cost of resources.
2. Select CIs	ALM - Change Manager	User manually selects an initial set of configuration items (CIs) for the change.
3. Impact Assessment	ALM - Change Manager	User approves having Universal CMDB generate the Impact Analysis report, which adds CIs to the CI list based on predefined rules in Universal CMDB. User then evaluates the Impact Analysis report and creates an impact assessment report with recommendations.
4. Review Impact Analysis	ALM - Change Manager	User reviews the request, the list of selected CIs, and the Impact Analysis and impact assessment reports. The user can approve the change based on the impact reports, or return to the Select CIs step to select a different initial set of CIs.

ALM - Infrastructure Changes Sub WF Subworkflow

If an authorized request for change is not an application change, the ALM - Request for Change workflow calls the ALM - Infrastructure Changes Sub WF subworkflow to manage the approval and deployment of changes to TEST and LIVE environments. *Figure 3-8* shows this subworkflow.

Figure 3-8. ALM - Infrastructure Changes Sub WF subworkflow



ALM - Plan Tests Sub WF Subworkflow

The ALM - Plan Tests Sub WF subworkflow provides a modular process for planning tests that can communicate automatically with Quality Center. If no integration exists, a manual process is also provided. *Figure 3-9* shows the subworkflow. *Table 3-6* lists the important steps in the subworkflow and the user roles associated with those steps.

Figure 3-9. ALM - Plan Tests Sub WF subworkflow

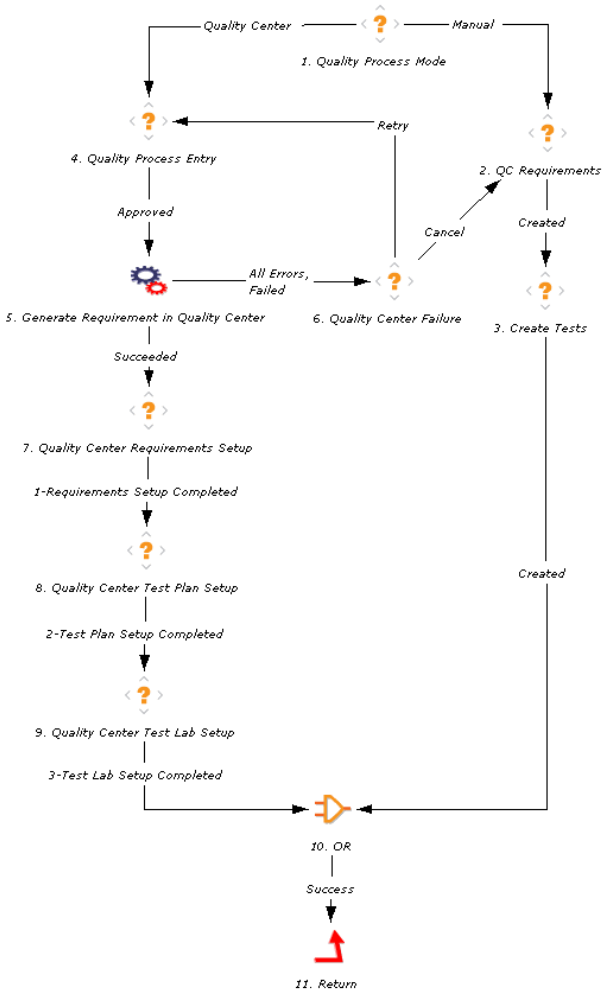


Table 3-6. ALM - Plan Tests Sub WF subworkflow steps

Step Name	User Security	Description
1. Quality Process Mode	ALM - QA Manager	Determine the method of test planning, either automatic through Quality Center, or manual.
4. Quality Process Entry	ALM - QA Manager	The quality process entry needs to be approved for integration of PPM Center with Quality Center.
5. Generate Requirement in Quality Center	ALM - QA Manager	Automated step that generates a requirement in Quality Center.
7. Quality Center Requirements Setup	ALM - QA Manager	QA to complete requirement setup in Quality Center.
8. Quality Center Test Plan Setup	ALM - QA Manager	QA to complete test plan setup in Quality Center.
9. Quality Center Test Lab Setup	ALM - Independent Tester	QA to complete test lab setup in Quality Center.
2. QC Requirements	ALM - QA Manager	Create test requirements in Quality Center.
3. Create Tests	ALM - QA Manager	Create test plans in Quality Center.

ALM - Deploy and Test Changes Sub WF Subworkflow

The ALM - Deploy and Test Changes Sub WF subworkflow provides a modular process for deploying and testing changes. The process can communicate automatically with Quality Center. If no integration exists, a manual process is also provided. *Figure 3-10* shows the subworkflow. *Table 3-7* lists the important steps in the subworkflow and the user roles associated with those steps.

Figure 3-10. ALM - Deploy and Test Changes Sub WF subworkflow

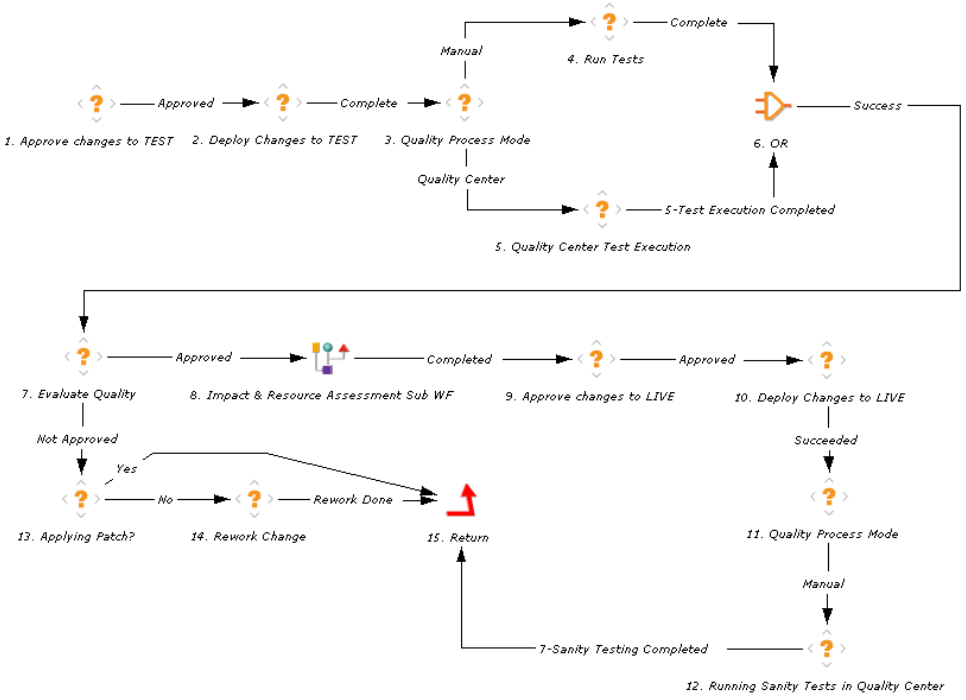


Table 3-7. ALM - Deploy and Test Changes Sub WF subworkflow steps

Step Name	User Security	Description
1. Approve changes to TEST	ALM - Change Manager	Approve deployment of changes to the TEST environment.
2. Deploy Changes to TEST	ALM - Change Manager	Deploy changes to the TEST environment.
3. Quality Process Mode	ALM - QA Manager	Determine the method of testing, either automatic through Quality Center or manual.
5. Quality Center Test Execution	ALM - Independent Tester	Quality Center tests the changes in a TEST environment.
7. Evaluate Quality	ALM - QA Manager	After test execution (manual or using Quality Center), evaluate quality.
8. Impact & Resource Assessment Sub WF	(None)	Call a subworkflow to determine the impact of the changes that will be deployed, as described in *ALM - Impact & Resource Assessment Sub WF Subworkflow* on page 52.
9. Approve changes to LIVE	ALM - Change Manager	Approve deployment of changes to the LIVE environment.
10. Deploy Changes to LIVE	ALM - Change Manager	Deploy changes to the LIVE environment.
11. Quality Process Mode	ALM - QA Manager	Initiate sanity tests in Quality Center.
12. Running Sanity Tests in Quality Center	ALM - QA Manager	Run sanity tests in Quality Center.

ALM - Non Release Sub WF Subworkflow

The ALM - Non Release Sub WF subworkflow provides a modular process for change deployment that can communicate automatically with Quality Center. If no integration exists, a manual process is also provided. *Figure 3-11* shows the subworkflow. *Table 3-8* lists the important steps in the subworkflow and the user roles associated with those steps.

Figure 3-11. ALM - Non Release Sub WF subworkflow

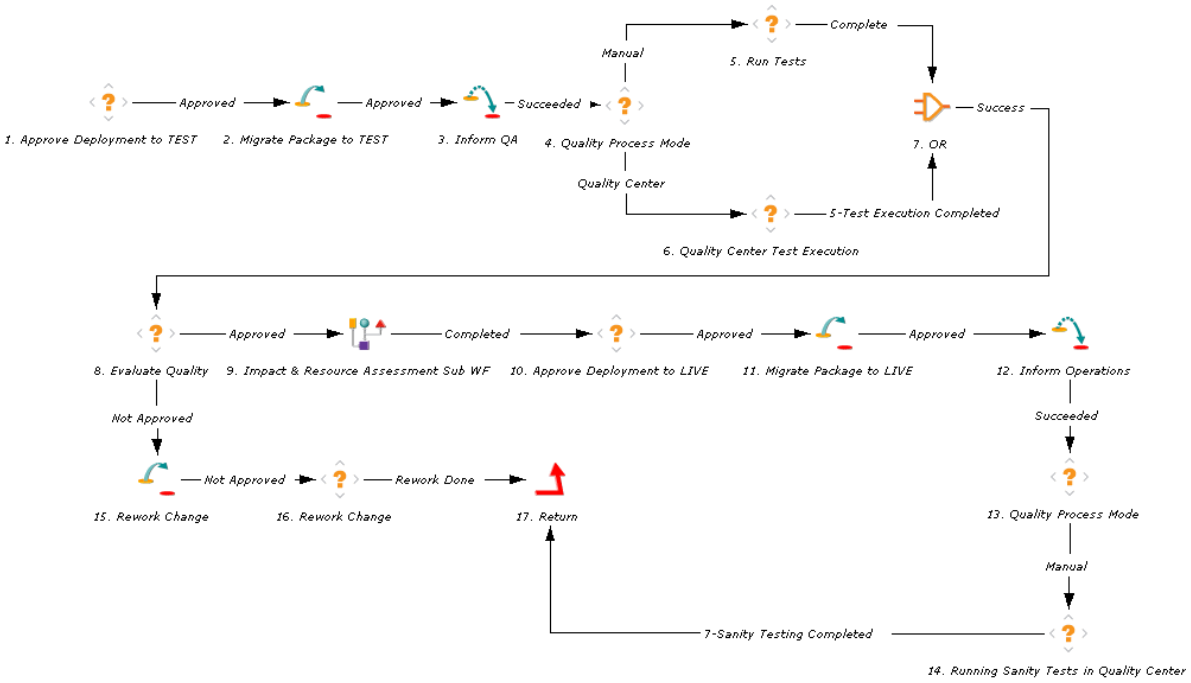


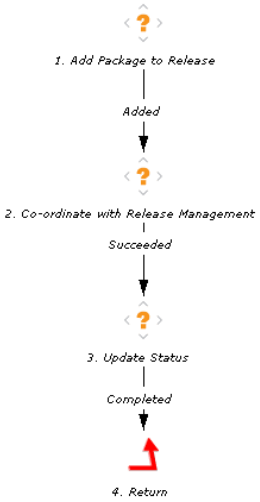
Table 3-8. ALM - Non Release Sub WF subworkflow steps

Step Name	User Security	Description
1. Approve Deployment to TEST	ALM - Change Manager	Coordinate the change implementation to the test environment.
4. Quality Process Mode	ALM - QA Manager	Determine the quality process mode, either automatic through Quality Center or manual.
5. Run Tests	ALM - Independent Tester	If manual mode is chosen in the Quality Process Mode step, the changes need to be manually tested based on test plans.
6. Quality Center Test Execution	ALM - Independent Tester	If Quality Center mode is chosen in the Quality Process Mode step, once QA signals through Quality Center that Test execution is complete, this step moves the workflow ahead.
8. Evaluate Quality	ALM - QA Manager	Approve/reject the quality of the change deployed to the test environment.
9. Impact & Resource Assessment Sub WF	(None)	Call a subworkflow to determine the impact on dependent infrastructure components and estimate the time and cost of resources, as described in *ALM - Impact & Resource Assessment Sub WF Subworkflow* on page 52.
15. Rework Change	ALM - Applications Development Manager	If the quality of the change deployed to the test environment is rejected, the change must be fixed.
10. Approve Deployment to LIVE	ALM - Change Manager	Coordinate the change implementation to the production environment.
14. Running Sanity Tests in Quality Center	ALM - Independent Tester	Run sanity tests in Quality Center.

ALM - Release Sub WF Subworkflow

The ALM - Release Sub WF subworkflow is called in order to add a change into an existing release. The subworkflow can be called multiple times, once for each change to be added to the release. Once a release is specified as Completed, no new changes can be added to that release. *Figure 3-12* shows the subworkflow. (For information about creating a new release, see *ALM - Release Management Request Type* on page 70.)

Figure 3-12. ALM - Release Sub WF subworkflow



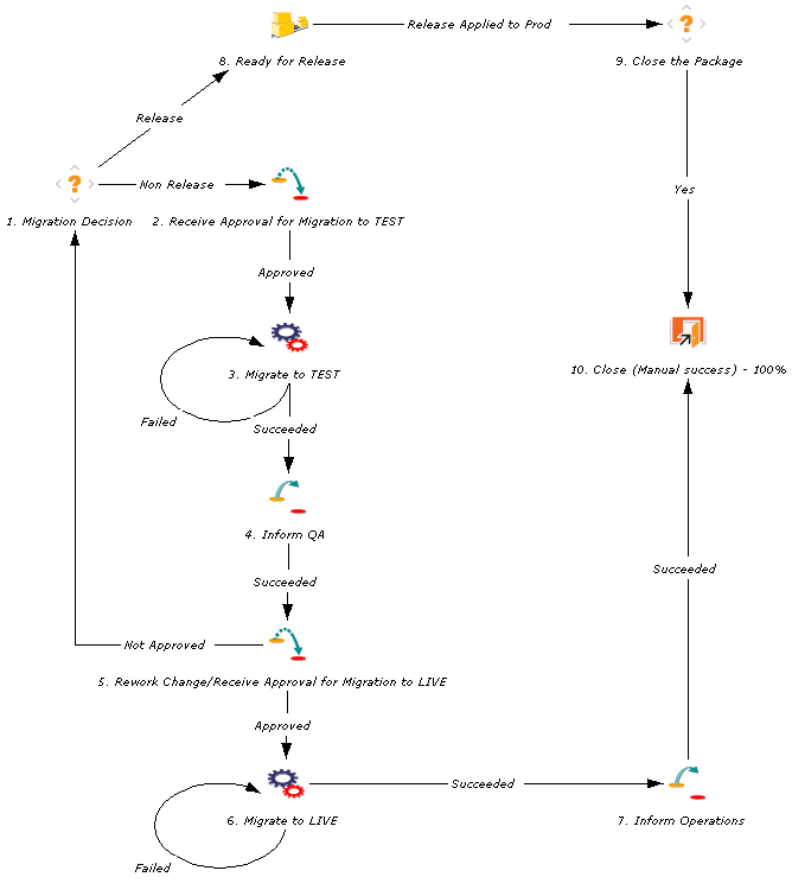
ALM - Defect Template with Quality Center Integration Request Type and Workflow

The ALM - Defect Template with Quality Center Integration request type and the associated ALM - Defect Template with Quality Center Integration workflow are the only ALM entities that can be used only when a particular integration (with Quality Center, in this case) is established. These ALM entities are described in Chapter 6, *Integration of PPM Center with Quality Center,* on page 167.

ALM - Change Migration Workflow

The ALM - Change Migration workflow is used to migrate changes from the DEV environment to the TEST environment and from the TEST environment to the LIVE environment. *Figure 3-13* shows the workflow. The ALM - Change Migration workflow is the default workflow used in step 15 of the ALM - Request For Change workflow to create a package. See *ALM - Request For Change Workflow* on page 43.

Figure 3-13. ALM - Change Migration workflow



Change Management Portlets to Display KPIs

ALM provides several portlets that can be added to your PPM Dashboard to provide real-time views into several key performance indicators (KPIs).

For information about adding portlets to your PPM Dashboard, see the *Getting Started* guide.

ALM - My RFCs Portlet

The ALM - My RFCs portlet is provided to users with the role of Change Manager. The portlet lists RFCs that have been created by or assigned to the logged-on user.

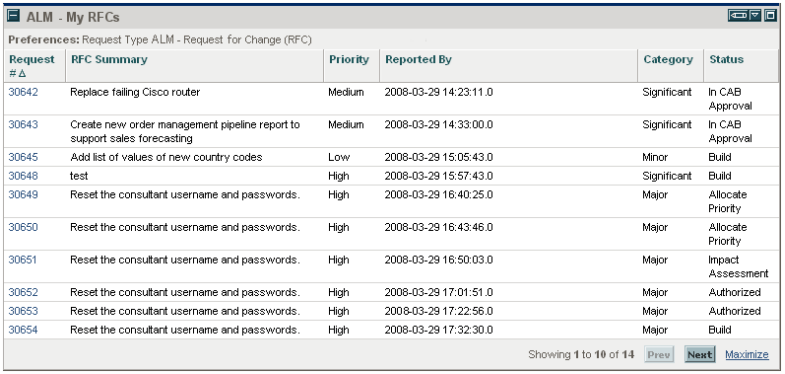
Table 3-9 describes the filter fields for the portlet.

Table 3-9. ALM - My RFCs portlet filter fields

Field Name	Description
Request Type	(Read-only) Preset to **ALM - Request for Change (RFC)**
Category	Category of the RFC

Figure 3-14 shows an example ALM - My RFCs portlet.

Figure 3-14. ALM - My RFCs portlet



ALM - Open RFCs Portlet

The ALM - Open RFCs portlet is provided to users with the role of Change Manager. The portlet lists RFCs that are currently being worked on.

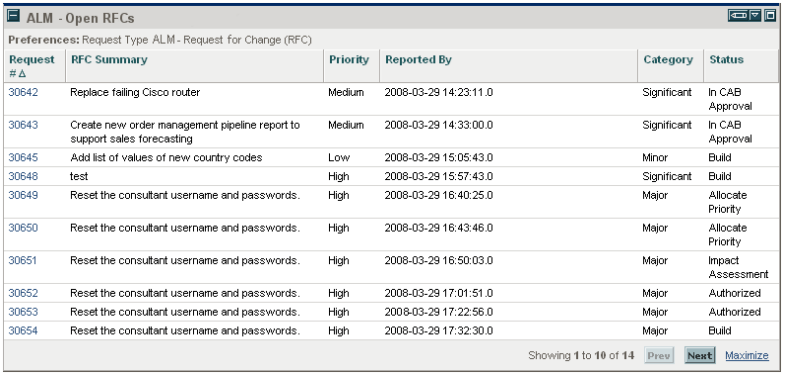
Table 3-10 describes the filter fields for the portlet.

Table 3-10. ALM - Open RFCs portlet filter fields

Field Name	Description
Request Type	(Read-only) Preset to **ALM - Request for Change (RFC)**
Assigned To	User to whom the RFC is assigned
Category	Category of the RFC

Figure 3-15 shows an example ALM - Open RFCs portlet.

Figure 3-15. ALM - Open RFCs portlet



ALM - RFCs By Category Portlet

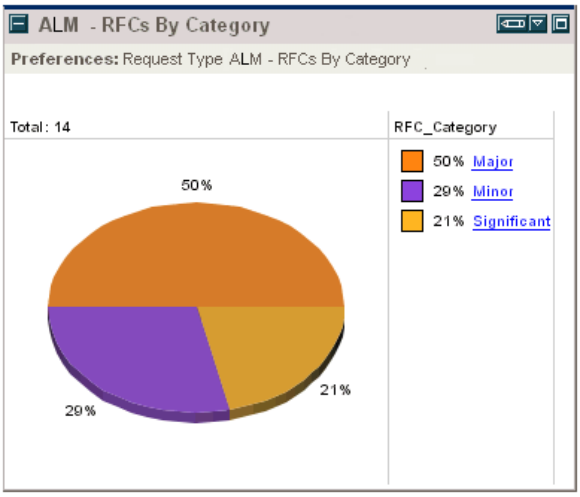
The ALM - RFCs By Category portlet is provided to users with the role of Change Manager. The portlet displays a pie chart showing the percentage of RFCs in each category.

The only filter field for the portlet, **Request Type,** is read-only and is preset to **ALM - Request for Change (RFC).**

Figure 3-16 shows the ALM - RFCs By Category portlet.

Clicking the pie chart drills down to a list portlet.

Figure 3-16. ALM - RFCs By Category portlet



ALM - RFCs By Reason for Change Portlet

The ALM - RFCs By Reason for Change portlet is provided to users with the role of Change Manager. This portlet displays a pie chart showing the percentage of RFCs by each type of change being considered (for example, new feature, enhancement, or defect fix).

Table 3-11 describes the filter fields for the portlet.

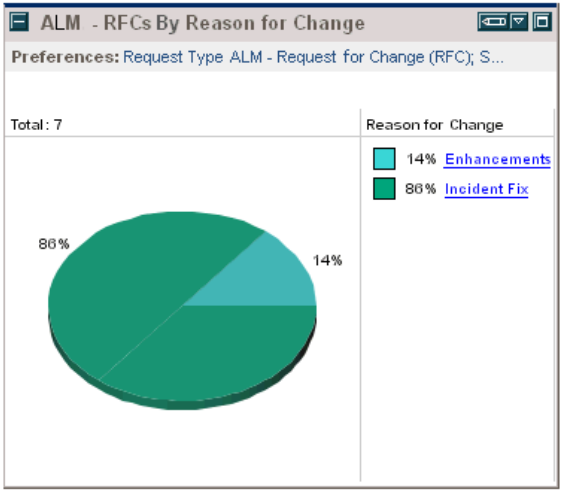
Table 3-11. ALM - RFCs By Reason for Change portlet filter fields

Field Name	Description
Request Type	(Read-only) Preset to **ALM - Request for Change (RFC)**
Status	Status of the RFC

Figure 3-17 shows an example ALM - RFCs By Reason for Change portlet.

Clicking the pie chart drills down to a list portlet.

Figure 3-17. ALM - RFCs By Reason for Change portlet



ALM - RFCs By Status Portlet

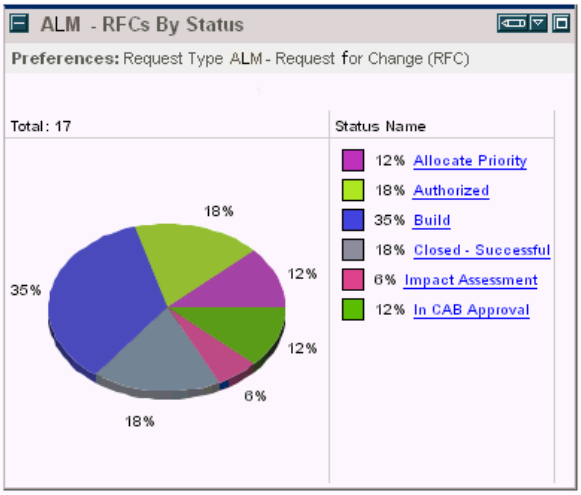
The ALM - RFCs By Status portlet displays a pie chart showing the percentage of RFCs of each status.

The only filter field for the portlet, **Request Type,** is read-only and is preset to **ALM - Request for Change (RFC).**

Figure 3-18 shows an example ALM - RFCs By Status portlet.

Clicking the pie chart drills down to the ALM - RFCs By Status - List portlet.

Figure 3-18. ALM - RFCs By Status portlet



Change Management Reports

ALM provides several reports that can be run to provide summary data and scheduling information about RFCs in the system, as well as to process participant data for SOX auditing. To run an ALM report:

1. Log on to PPM Center.
2. From the menu bar, select **Open > Reports > Create Report.**
3. On the Submit New Report page, in the **Report Category** field, select **Demand Management.**
4. Click the link for the desired report, and complete all required and any optional filter fields.
5. Click **Submit.**

For more information about reports, see the *Reports Guide and Reference.*

ALM - Change Summary Report

The ALM - Change Summary Report provides a list of RFCs that have been implemented, grouped by change category.

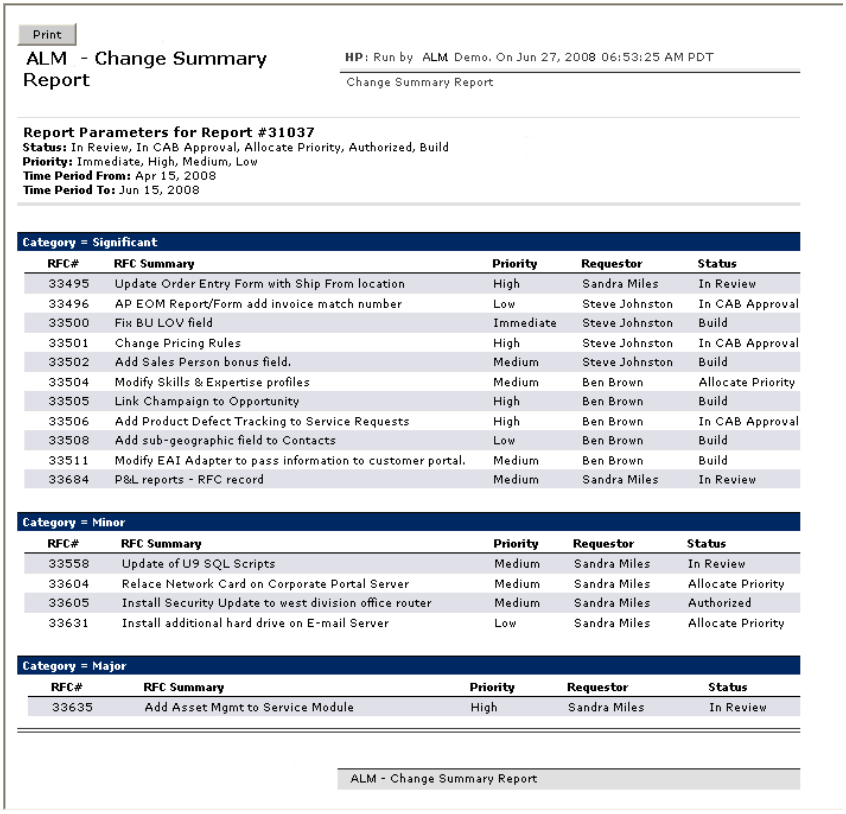
Table 3-12 describes the filter fields for the report.

Table 3-12. ALM - Change Summary Report filter fields

Field Name	Description
Request Type	(Read-only) Preset to **ALM - Request for Change (RFC)**
Change Status	Status of the change request
Change Priority	Priority of the change request
Time Period From	Earliest date the RFCs were created
Time Period To	Latest date the RFCs were created

Figure 3-19 shows sample output for the ALM - Change Summary Report.

Figure 3-19. ALM - Change Summary Report output



Print

ALM - Change Summary Report

HP: Run by ALM Demo. On Jun 27, 2008 06:53:25 AM PDT

Change Summary Report

Report Parameters for Report #31037
Status: In Review, In CAB Approval, Allocate Priority, Authorized, Build
Priority: Immediate, High, Medium, Low
Time Period From: Apr 15, 2008
Time Period To: Jun 15, 2008

Category = Significant

RFC#	RFC Summary	Priority	Requestor	Status
33495	Update Order Entry Form with Ship From location	High	Sandra Miles	In Review
33496	AP EOM Report/Form add invoice match number	Low	Steve Johnston	In CAB Approval
33500	Fix BU LOV field	Immediate	Steve Johnston	Build
33501	Change Pricing Rules	High	Steve Johnston	In CAB Approval
33502	Add Sales Person bonus field.	Medium	Steve Johnston	Build
33504	Modify Skills & Expertise profiles	Medium	Ben Brown	Allocate Priority
33505	Link Champaign to Opportunity	High	Ben Brown	Build
33506	Add Product Defect Tracking to Service Requests	High	Ben Brown	In CAB Approval
33508	Add sub-geographic field to Contacts	Low	Ben Brown	Build
33511	Modify EAI Adapter to pass information to customer portal.	Medium	Ben Brown	Build
33684	P&L reports - RFC record	Medium	Sandra Miles	In Review

Category = Minor

RFC#	RFC Summary	Priority	Requestor	Status
33558	Update of U9 SQL Scripts	Medium	Sandra Miles	In Review
33604	Relace Network Card on Corporate Portal Server	Medium	Sandra Miles	Allocate Priority
33605	Install Security Update to west division office router	Medium	Sandra Miles	Authorized
33631	Install additional hard drive on E-mail Server	Low	Sandra Miles	Allocate Priority

Category = Major

RFC#	RFC Summary	Priority	Requestor	Status
33635	Add Asset Mgmt to Service Module	High	Sandra Miles	In Review

ALM - Change Summary Report

ALM - Forward Schedule of Changes for RFC Report

The ALM - Forward Schedule of Changes for RFC report is a key report used in the change management process. The output of this report is a list of all the RFCs that are scheduled to be implemented.

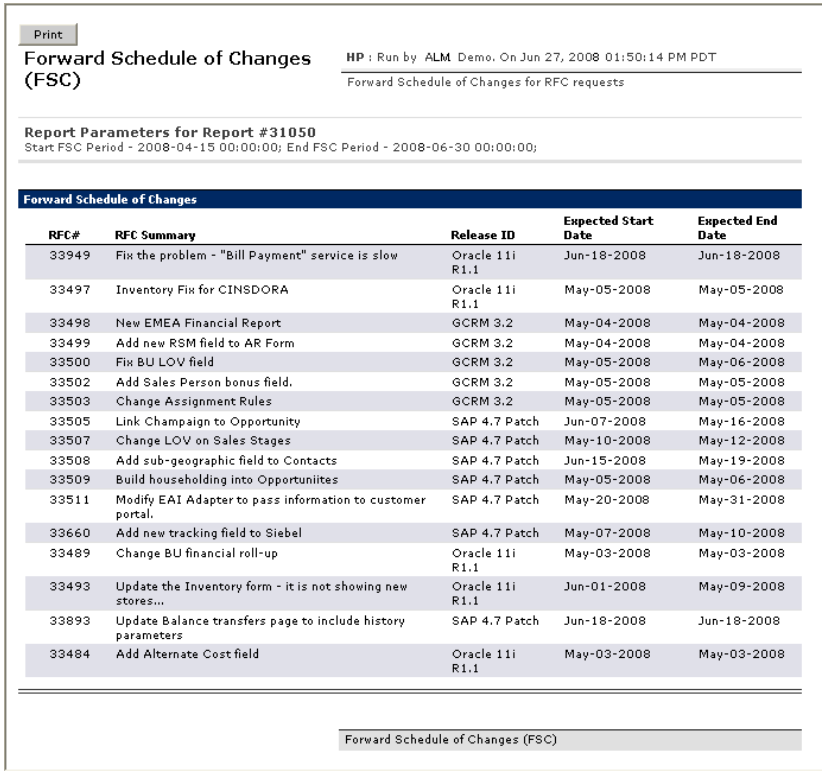
Table 3-13 describes the filter fields for the report.

Table 3-13. ALM - Forward Schedule of Changes for RFC report filter fields

Field Name	Description
Report Title	Title of the report
Start FSC Period	Earliest start date of the scheduled RFCs
End FSC Period	Latest start date of the scheduled RFCs
Request Type	(Read-only) Preset to **ALM - Request for Change (RFC)**

Figure 3-20 shows sample output for the ALM - Forward Schedule of Changes for RFC report.

Figure 3-20. ALM - Forward Schedule of Changes for RFC report output



Print

Forward Schedule of Changes (FSC)

HP : Run by ALM Demo. On Jun 27, 2008 01:50:14 PM PDT

Forward Schedule of Changes for RFC requests

Report Parameters for Report #31050

Start FSC Period - 2008-04-15 00:00:00; End FSC Period - 2008-06-30 00:00:00;

Forward Schedule of Changes

RFC#	RFC Summary	Release ID	Expected Start Date	Expected End Date
33949	Fix the problem - "Bill Payment" service is slow	Oracle 11i R1.1	Jun-18-2008	Jun-18-2008
33497	Inventory Fix for CINSDORA	Oracle 11i R1.1	May-05-2008	May-05-2008
33498	New EMEA Financial Report	GCRM 3.2	May-04-2008	May-04-2008
33499	Add new RSM field to AR Form	GCRM 3.2	May-04-2008	May-04-2008
33500	Fix BU LOV field	GCRM 3.2	May-05-2008	May-06-2008
33502	Add Sales Person bonus field.	GCRM 3.2	May-05-2008	May-05-2008
33503	Change Assignment Rules	GCRM 3.2	May-05-2008	May-05-2008
33505	Link Champaign to Opportunity	SAP 4.7 Patch	Jun-07-2008	May-16-2008
33507	Change LOV on Sales Stages	SAP 4.7 Patch	May-10-2008	May-12-2008
33508	Add sub-geographic field to Contacts	SAP 4.7 Patch	Jun-15-2008	May-19-2008
33509	Build householding into Opportuniites	SAP 4.7 Patch	May-05-2008	May-06-2008
33511	Modify EAI Adapter to pass information to customer portal.	SAP 4.7 Patch	May-20-2008	May-31-2008
33660	Add new tracking field to Siebel	SAP 4.7 Patch	May-07-2008	May-10-2008
33489	Change BU financial roll-up	Oracle 11i R1.1	May-03-2008	May-03-2008
33493	Update the Inventory form - it is not showing new stores...	Oracle 11i R1.1	Jun-01-2008	May-09-2008
33893	Update Balance transfers page to include history parameters	SAP 4.7 Patch	Jun-18-2008	Jun-18-2008
33484	Add Alternate Cost field	Oracle 11i R1.1	May-03-2008	May-03-2008

Forward Schedule of Changes (FSC)

ALM - Release Management Request Type

The ITIL Release Management process as modeled by ALM sends a release request of the ALM - Release Management request type along the ALM - Release Request workflow (see *ALM - Release Request Workflow* on page 76) to be examined and resolved.

Figure 3-21 shows the Create New ALM - Release Management page that appears when you create a request and select the ALM - Release Management request type. *Table 3-14* describes the fields in the ALM - Release Management request, including some fields that do not appear until the request is created or until other conditions are met.

Figure 3-21. ALM - Release Management request

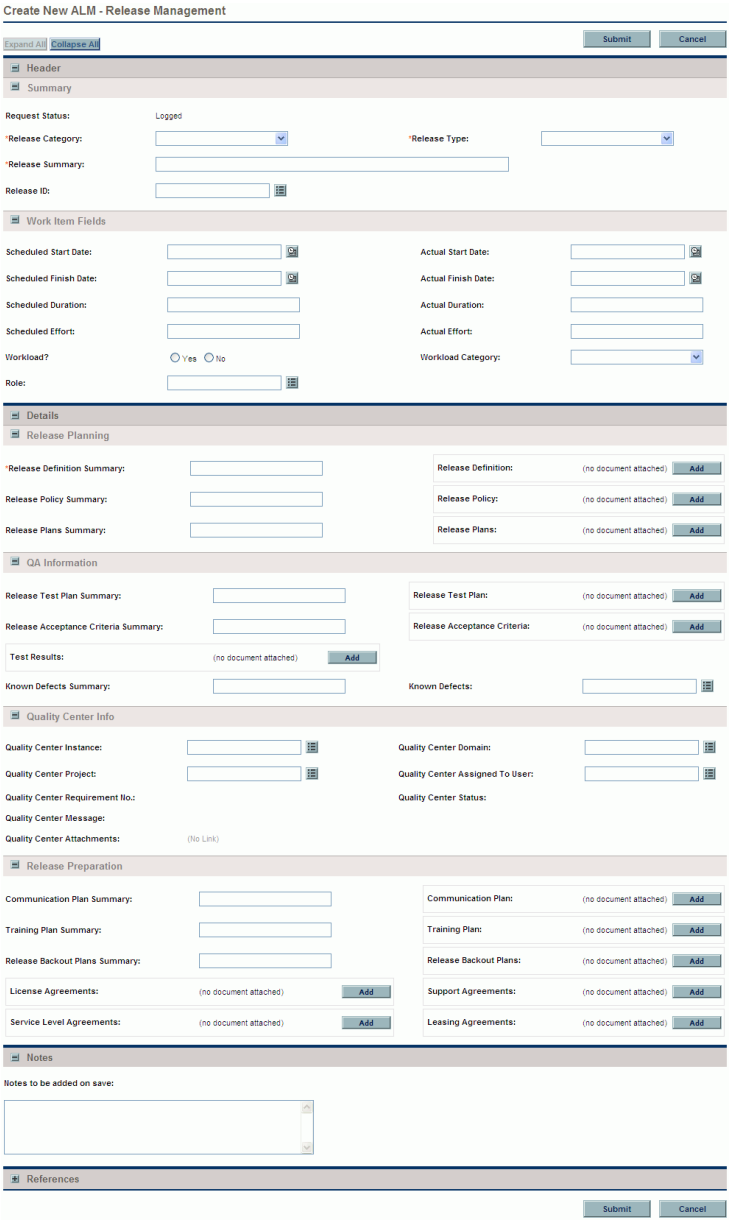


Table 3-14. ALM - Release Management request fields (page 1 of 4)

Field Name (*Required)	Description
Summary section	
Request Status	(Read-only) Status of the release request. Preset to **Logged** before the request is created
Request No.	(Read-only. Added after the request is created.) Number of the request
*Release Category	Release category, based on the scope of the release (number of changes in a release)
*Release Type	Type of release
*Release Summary	Summary description of the release
*Release ID (Required only after the request is created)	ID for the release
Work Item Fields section [a]	
Release Planning section	
*Release Definition Summary	Summary of the definition of this release
Release Definition	Allows you to add and view the release definition document directly on the release request
*Release Policy Summary (Required only after the request is created)	Summary of the policy that governs this release
Release Policy	Allows you to add and view the release policy document directly on the release request
Release Plans Summary	Summary of rollout plans for this release
Release Plans	Allows you to add and view the rollout plans for this release (for example: a timetable of events, a resource plan, and who will do what and when) directly on the release request

Table 3-14. ALM - Release Management request fields (page 2 of 4)

Field Name (*Required)	Description
QA Information section	
Release Test Plan Summary	Summary of the test plan for this release
Release Test Plan	Allows you to add and view the release test plan (the plan that describes tests to be performed on this release in the TEST environment) directly on the release request
Release Acceptance Criteria Summary	Summary of the release acceptance criteria for this release
Release Acceptance Criteria	Allows you to add and view the release acceptance criteria document (which details criteria that qualify the acceptance of this release before deployment to the LIVE environment) directly on the release request
Test Results	Allows you to add and view the test results directly on the release request
Known Defects Summary	Summary of known defects that will be carried forward into the LIVE environment
Known Defects	Used to specify RFCs relating to known defects that will be carried forward into the LIVE environment
Quality Center Info section [b]	
Quality Center Instance	Quality Center instance that will receive the new PPM Center request
Quality Center Domain	Quality Center domain of the working project
Quality Center Project	Quality Center project that is linked with this request
Quality Center Assigned To User	User assigned to the Quality Center requirement
Quality Center Requirement No.	(Read-only) Quality Center requirement number
Quality Center Status	(Read-only) Quality Center requirement status

Table 3-14. ALM - Release Management request fields (page 3 of 4)

Field Name (*Required)	Description
Quality Center Message	(Read-only) Message indicating whether the last update to the request was successful in Quality Center
Quality Center Attachments	URL of the attached requirement document
Release Preparation section	
Communication Plan Summary	Summary of the communication plan for this release
Communication Plan	Allows you to add and view the communication plan (the plan that describes the various notifications that need to be sent out prior to release deployment into the LIVE environment) directly on the release request
Training Plan Summary	Summary of the training plan for this release
Training Plan	Allows you to add and view the training plan (the plan that describes the training that needs to be provided prior to release deployment into the LIVE environment) directly on the release request
Release Backout Plans Summary	Summary of the backout plans for this release
Release Backout Plans	Allows you to add and view the backout plan (the release plan that describes procedures to back out the release to its original state) directly on the release request
License Agreements	Allows you to add and view any license agreement documents for software licensed in this release directly on the release request
Support Agreements	Allows you to add and view any support agreement documents for support policies of software licensed in this release directly on the release request

Table 3-14. ALM - Release Management request fields (page 4 of 4)

Field Name (*Required)	Description
Service Level Agreements	Allows you to add and view any SLAs for ordering new equipment or software directly on the release request
Leasing Agreements	Allows you to add and view any leasing agreement documents for software leased in this release directly on the release request

a. Fields in the Work Item Fields section are useful if you want to include Release Management requests as work items to be tracked using HP Resource Management. For more information, see the *HP Resource Management User's Guide*.

b. Fields in the Quality Center Info section remain visible by default but are not used if PPM Center is not integrated with HP Quality Center.

The administrator can remove the **Quality Center Info** section from the request type by removing the Quality Center Info field group from the ALM - Release Request Header request header type. See the *HP Demand Management Configuration Guide* for details about request header types and field groups.

To submit an ALM - Release Management request:

1. Log on to PPM Center.
2. From the menu bar, select **Create > Request.**

   The Create New Request page appears.
3. On the Create New Request page, in the **Request Type** field, select **ALM - Release Management** and click **Create.**

   The Create New ALM - Release Management page appears, displaying the appropriate release request fields.

   Required fields have a red asterisk. All other fields are optional, but are often helpful when others are reviewing an open request. For information concerning a specific field, click the **Help** icon next to the field (if available).

4. Complete the fields in all sections as appropriate.

   The **Notes** section contains fields where notes and information concerning the release can be entered and stored. Typically, when you create a release request, you do not need to add a note to it. However, add a note if you want to convey additional information to the reviewers and processors of the release request.

   In the **References** section, you can add useful references such as a Web-accessible file or a document or file attached from a local machine. For more information about adding references, see the *HP Demand Management User's Guide.*

5. On the Create New Request page, click **Submit.**

   The release request is submitted. The Request Creation Confirmed page appears.

PPM Center can be configured to allow you to save the request before you submit it. To have this feature enabled, see your application administrator.

After submitting the request, on the Request Creation Confirmed page you can click the link for the particular request number in the **Request #** field to view the detail page of the newly generated release request.

When the release request is submitted, it is assigned an initial status, such as New. The request is then routed along the ALM - Release Request workflow (see *ALM - Release Request Workflow*).

ALM - Release Request Workflow

The ALM - Release Request workflow is the sequence of approvals, decisions, or actions that the release request follows. The release request starts at the beginning of the ALM - Release Request workflow. When the release request reaches the end of the workflow, its lifecycle is complete. After the release request has been through initial planning, the release is created, and the packages for the RFCs can be aggregated into the release. The deployment steps in the release request workflow coordinate with the actual release to automate the deployment of all packages in the release into the TEST and LIVE environments.

Upon creation, an ALM - Release Management request is automatically set to use the ALM - Release Request workflow.

Figure 3-22 shows the ALM - Release Request workflow. *Table 3-15* lists the important steps in the workflow and the user roles associated with those steps.

Figure 3-22. ALM - Release Request workflow

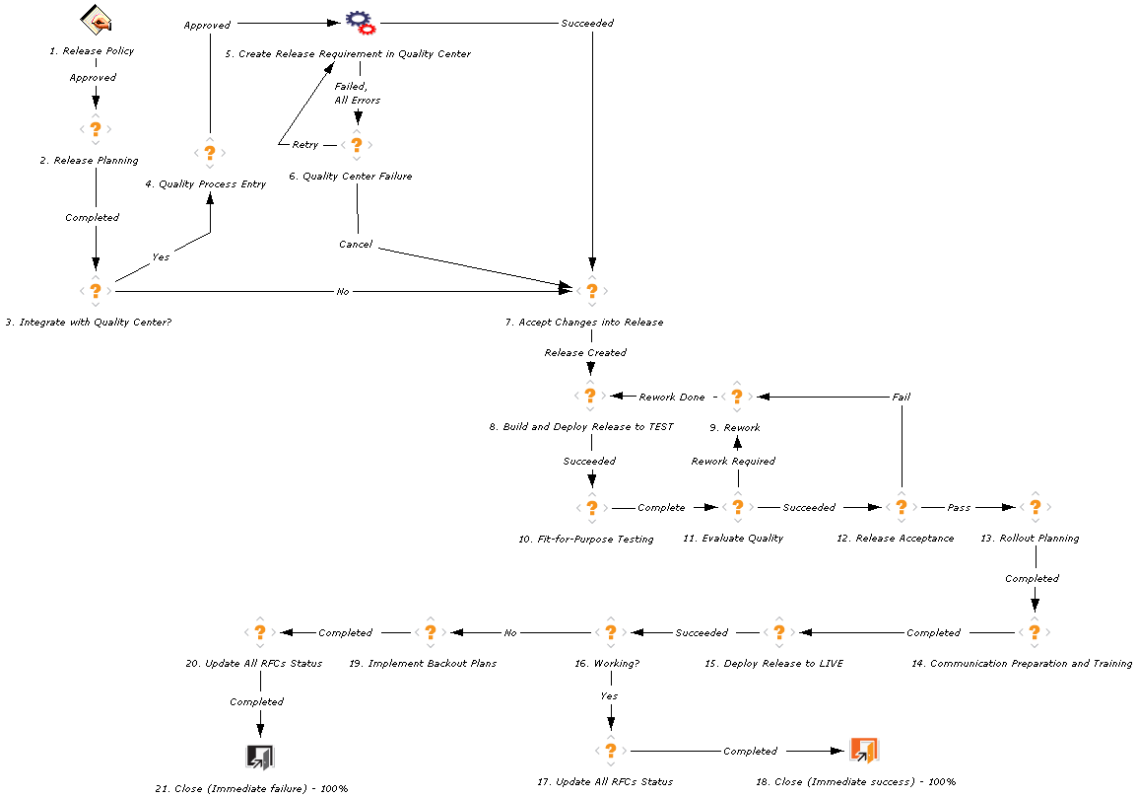


Table 3-15. ALM - Release Request workflow steps (page 1 of 2)

Step Name	User Security	Description
1. Release Policy	ALM - Release Manager	Define the release policy for this release (including release number and rules for accepting changes into the release).
2. Release Planning	ALM - Release Manager	Review and approval of the release policy and other planning documents (such as release acceptance criteria).
3. Integrate with Quality Center?	ALM - QA Manager	Determine whether the user wants to use Quality Center integration, if enabled. See *Integration of PPM Center with HP Quality Center* on page 20.
4. Quality Process Entry	ALM - QA Manager	Secure approval for release entry into Quality Center-integrated process.
5. Create Release Requirement in Quality Center	ALM - QA Manager	Create a test requirement in Quality Center for the release if integration has been enabled.
7. Accept Changes into Release	ALM - Release Manager	Add RFC-related changes to the release. This can be done from the RFC workflow directly (for changes that qualify for this release).
8. Build and Deploy Release to TEST	ALM - Release Manager	Deploy the entire release into QA or staging environment and prepare for integration testing. This step automatically migrates the release and related packages to the TEST environment.
10. Fit-for-Purpose Testing	ALM - Release Manager	Fit-for-purpose testing of this release.
11. Evaluate Quality	ALM - Release Manager	Testing of this release, including testing of backout plan.

Table 3-15. ALM - Release Request workflow steps (page 2 of 2)

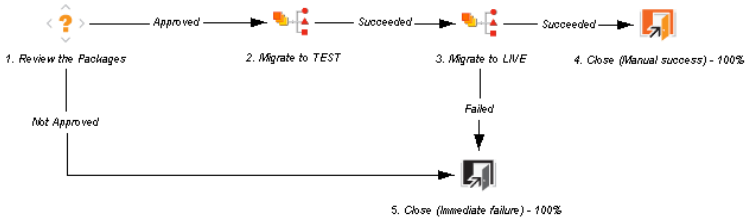
Step Name	User Security	Description
12. Release Acceptance	ALM - Release Manager	Based on test results and known defects, determine if this release is acceptable for LIVE deployment.
13. Rollout Planning	ALM - Release Manager	Plan the rollout into LIVE environment. The key document is the release plan (who does what and when).
14. Communication Preparation and Training	ALM - Release Manager	Prepare for LIVE rollout, and determine logistics, training, and communication.
15. Deploy Release to LIVE	ALM - Release Manager	Distribute and install this release to the LIVE environment. This step automatically migrates the release and related packages to the LIVE environment. SOX Segregation of Duties prohibits developers and testers from being involved in deployment of code into production. It is important that users with either of these roles not be involved in this step.
16. Working?	ALM - Release Manager	Determine if the release is working based on sanity check and testing.
17. Update All RFCs Status	ALM - Release Manager	Update the status of RFCs related to this release.
18. Close (Immediate success) - 100%	(None)	Update status to Closed.
19. Implement Backout Plans	ALM - Release Manager	If the release is not working, implement the backout plan.
20. Update All RFCs Status	ALM - Release Manager	Update the status of RFCs related to this release.

ALM - Release Distribution Workflow and Subworkflow

The ALM - Release Distribution workflow, along with the ALM - Release Distribution Sub WF subworkflow that it calls to migrate the release to TEST and then to LIVE environments, are used to control distribution among environments of a release that consolidates multiple changes.

Figure 3-23 shows the ALM - Release Distribution workflow.

Figure 3-23. ALM - Release Distribution workflow



Release Management Portlets to Display KPIs

ALM provides several portlets that can be added to your PPM Dashboard to provide real-time views into several key performance indicators (KPIs).

For information about adding portlets to your PPM Dashboard, see the *Getting Started* guide.

ALM - Deployed Releases Portlet

The ALM - Deployed Releases portlet is provided to users with the role of Release Manager. The portlet displays a list of recently deployed releases.

Table 3-16 describes the filter fields for the portlet.

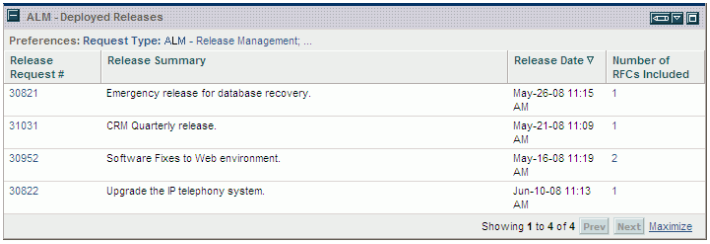
Table 3-16. ALM - Deployed Releases portlet filter fields

Field Name	Description
Child RFC Request Type	Request types, at least one of which must be in the releases that are to be listed
Status	Status of the release
Category	Category of the release (**Emergency, Major,** or **Minor**)
Type	Type of release (**Full, Delta,** or **Package Release**)
Request Type	(Read-only) Preset to **ALM - Release Management**

In order for the portlet to display data, RFCs need to be added as child or related references to the release request.

Figure 3-24 shows an example ALM - Deployed Releases portlet.

Figure 3-24. ALM - Deployed Releases portlet



ALM - My Releases Portlet

The ALM - My Releases portlet is provided to users with the role of Release Manager and other roles involved in the release management process. The portlet lists release requests that have been created by or assigned to the logged-on user.

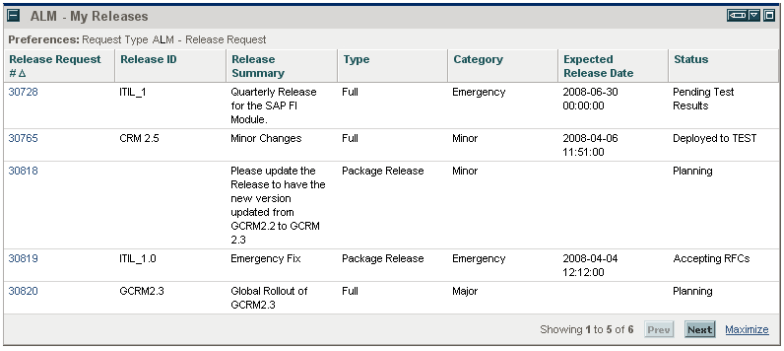
Table 3-17 describes the filter fields for the portlet.

Table 3-17. ALM - My Releases portlet filter fields

Field Name	Description
Request Type	(Read-only) Preset to **ALM - Release Management**
Category	Category of the release (**Emergency, Major,** or **Minor**)

Figure 3-25 shows an example ALM - My Releases portlet.

Figure 3-25. ALM - My Releases portlet



ALM - Open Releases Portlet

The ALM - Open Releases portlet is provided to users with the role of Release Manager. The portlet lists releases that do not have the status of **Closed.**

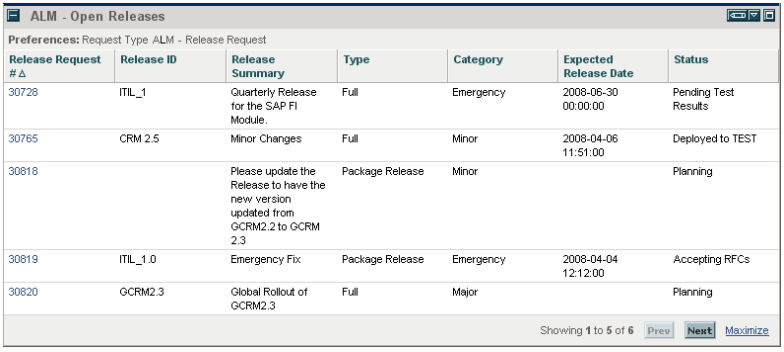
Table 3-18 describes the filter fields for the portlet.

Table 3-18. ALM - Open Releases portlet filter fields

Field Name	Description
Request Type	(Read-only) Preset to **ALM - Release Management**
Assigned to	User assigned to the release
Category	Category of the release (**Emergency, Major,** or **Minor**)

Figure 3-26 shows an example ALM - Open Releases portlet.

Figure 3-26. ALM - Open Releases portlet

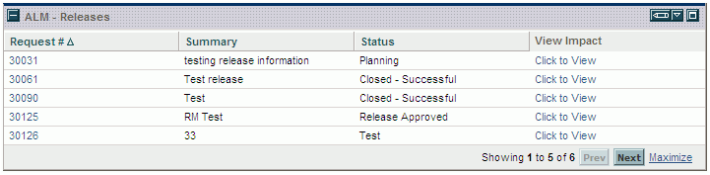


ALM - Releases Portlet

The ALM - Releases portlet displays a list of release requests. If PPM Center is integrated with HP Release Control or HP Change Control Management, the portlet provides a Click to View link in the **View Impact** column for each request to log in to HP Release Control, where various tabs provide information about the request.

Figure 3-27 shows an example ALM - Releases portlet.

Figure 3-27. ALM - Releases portlet



For more information about tabs in HP Release Control or HP Change Control Management, see *Using the Integration of PPM Center with Release Control* on page 246.

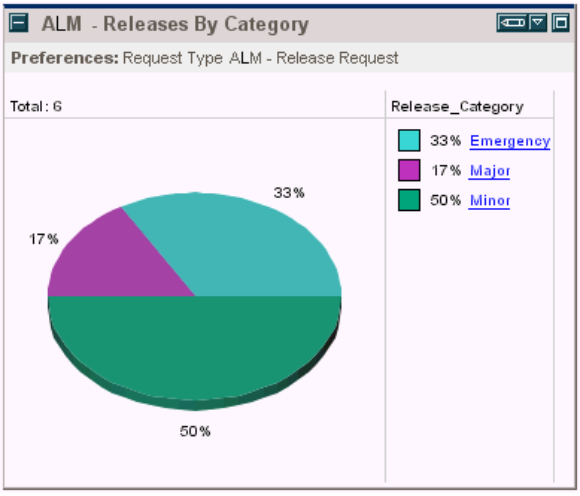
ALM - Releases By Category Portlet

The ALM - Releases By Category portlet is provided to users with the role of Release Manager. The portlet displays a pie chart showing the percentage of releases in each category.

The only filter field for the portlet, **Request Type,** is read-only and is preset to **ALM - Release Management.**

Figure 3-28 shows an example ALM - Releases By Category portlet.

Figure 3-28. ALM - Releases By Category portlet



Clicking the pie chart drills down to the ALM - Releases By List portlet.

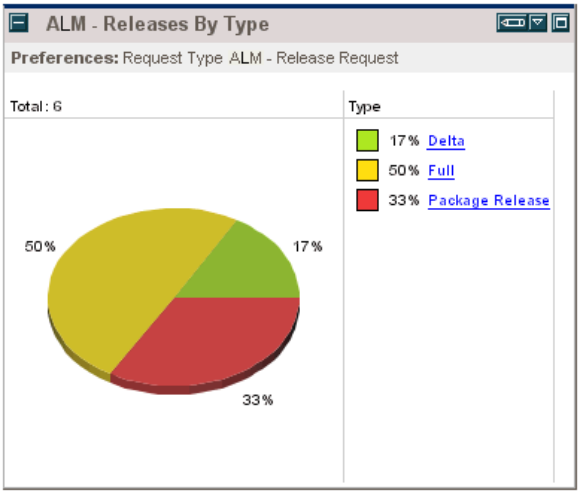
ALM - Releases By Type Portlet

The ALM - Releases By Type portlet is provided to users with the role of Release Manager. The portlet displays a pie chart showing the percentage of releases of each type.

The only filter field for the portlet, **Request Type,** is read-only and is preset to **ALM - Release Management.**

Figure 3-29 shows an example ALM - Releases By Type portlet.

Figure 3-29. ALM - Releases By Type portlet



Clicking the pie chart drills down to the ALM - Releases By List portlet.

ALM - RFCs per Release Portlet

The ALM - RFCs per Release portlet is provided to users with the role of Release Manager. The portlet displays a list of RFCs that constitute a release.

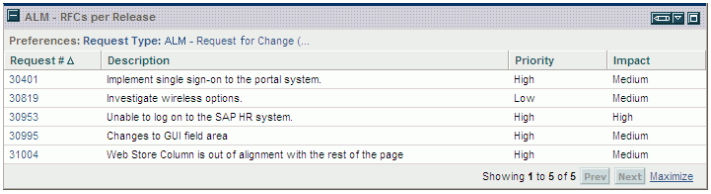
Table 3-19 describes the filter fields for the portlet.

Table 3-19. ALM - RFCs per Release portlet filter fields

Field Name	Description
Release Request	Number of the release request
Request Type	Request types of the RFCs. Preset to **ALM - Release For Change (RFC)** by default
Status	Status of the release
Priority	Priority of the release

Figure 3-30 shows an example ALM - RFCs per Release portlet.

Figure 3-30. ALM - RFCs per Release portlet



Release Management Reports

ALM provides several reports that can be run to provide summary data and scheduling information about releases in the system.

To generate a report, from the PPM Center menu bar:

1. Select **Open > Reports > Create Report.**
2. On the Submit New Report page, in the **Report Category** field, select **Demand Management.**
3. Click the link for the desired report, and complete all required and any optional filter fields,
4. Click **Submit.**

For more information about reports, see the *Reports Guide and Reference.*

ALM - Forward Schedule of Releases Report

The ALM - Forward Schedule of Releases report is a key report used in the release management process. The output of this report is a list of all releases that are scheduled to be implemented into the LIVE environment.

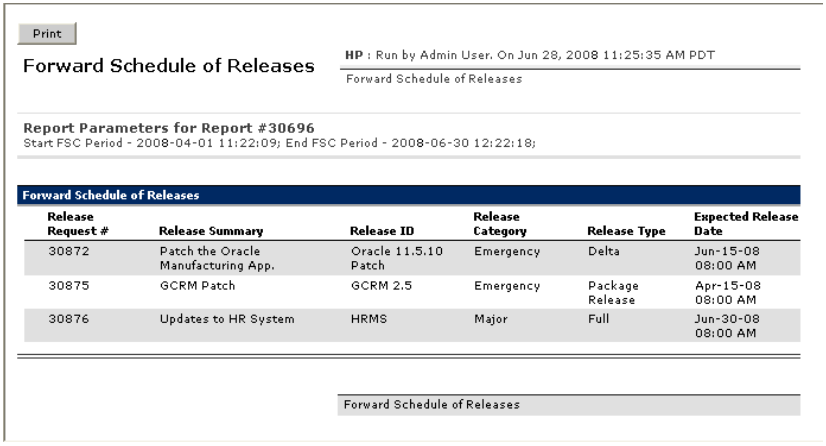
Table 3-20 describes the filter fields for the report.

Table 3-20. ALM - Forward Schedule of Releases report filter fields

Field Name	Description
Report Title	Title of the report
Start FSC Period	Searches for releases created after the specified FSC date
End FSC Period	Searches for releases created before the specified FSC date
Request Type	(Read-only) Preset to **ALM - Release Management**

Figure 3-31 shows sample output for the ALM - Forward Schedule of Releases report.

Figure 3-31. ALM - Forward Schedule of Releases report output



ALM - Release Content Report

The ALM - Release Content Report provides a list of RFCs that have been incorporated into a release.

Table 3-21 describes the filter fields for the report.

Table 3-21. ALM - Release Content Report filter fields

Field Name (*Required)	Description
Report Title	Title of the report
Request Type	(Read-only) Preset to **ALM - Release Management**
*Release ID	Specify the release whose contents you want to list

Figure 3-32 shows sample output for the ALM - Release Content Report.

Figure 3-32. ALM - Release Content Report output

Print

Release Content Report

HP : Run by Admin User. On Jun 28, 2008 10:54:41 AM PDT

Release Content Report

Report Parameters for Report #30668

Release ID - SAP 4.7 Patch;

Release Details

Release ID	Release Summary	Release Category	Release Type	Expected Release Date	Status
SAP 4.7 Patch	Patch the SAP Application to get the new funcationality.	Major	Package Release	Apr-30-2008	Planning

RFCs in Release

RFC#	RFC Summary	Priority	Status	Requestor
30900	Change the fields for the HRMS W-2 screen.	Immediate	Build	Admin User
30901	Change the fields for the Monthly receiveables screen.	High	Build	Admin User
30902	SAP TMS (Transport Management System) errors out with SAP script transports.	High	In Review	Admin User
30903	Change the number range on the SAP test system.	Immediate	In Review	Admin User
30904	Reset the date on the SAP application server to PST.	Medium	In Review	Admin User
30905	Change the date format to DD-Mon-YYYY for the SAP Europe servers.	Low	Allocate Priority	Admin User

Release Content Report

ALM - Release Summary Report

The ALM - Release Summary Report provides a list of releases that have been implemented.

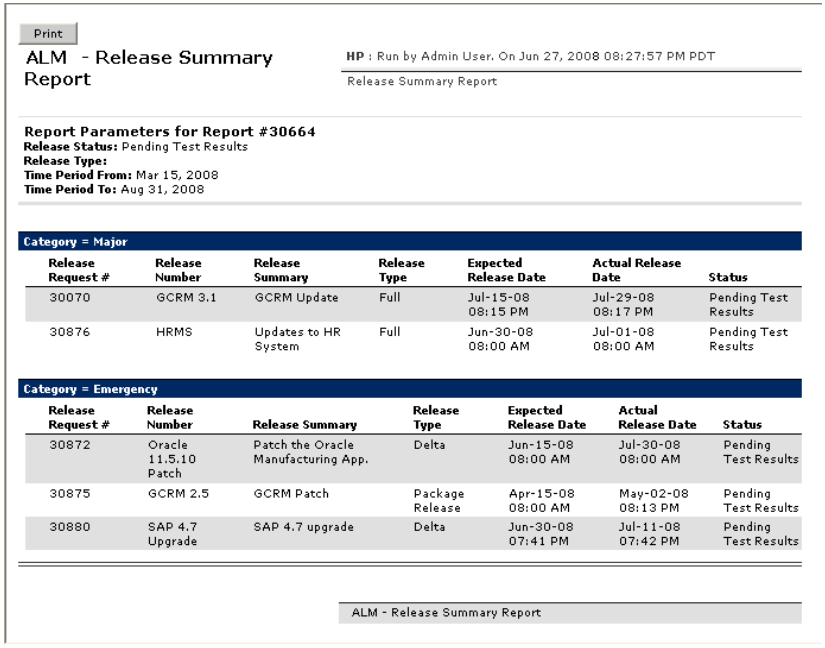
Table 3-22 describes the filter fields for the report.

Table 3-22. ALM - Release Summary Report filter fields

Field Name	Description
Request Type	(Read-only) Preset to **ALM - Release Management**
Release Status	Searches for releases with the specified statuses
Release Type	Searches for releases of a specific type
Time Period From	Searches for releases created after the specified date
Time Period To	Searches for releases created before the specified date

Figure 3-33 shows sample output for the ALM - Release Summary Report report.

Figure 3-33. ALM - Release Summary Report output



Print

ALM - Release Summary Report

HP : Run by Admin User, On Jun 27, 2008 08:27:57 PM PDT

Release Summary Report

Report Parameters for Report #30664
Release Status: Pending Test Results
Release Type:
Time Period From: Mar 15, 2008
Time Period To: Aug 31, 2008

Category = Major

Release Request #	Release Number	Release Summary	Release Type	Expected Release Date	Actual Release Date	Status
30070	GCRM 3.1	GCRM Update	Full	Jul-15-08 08:15 PM	Jul-29-08 08:17 PM	Pending Test Results
30876	HRMS	Updates to HR System	Full	Jun-30-08 08:00 AM	Jul-01-08 08:00 AM	Pending Test Results

Category = Emergency

Release Request #	Release Number	Release Summary	Release Type	Expected Release Date	Actual Release Date	Status
30872	Oracle 11.5.10 Patch	Patch the Oracle Manufacturing App.	Delta	Jun-15-08 08:00 AM	Jul-30-08 08:00 AM	Pending Test Results
30875	GCRM 2.5	GCRM Patch	Package Release	Apr-15-08 08:00 AM	May-02-08 08:13 PM	Pending Test Results
30880	SAP 4.7 Upgrade	SAP 4.7 upgrade	Delta	Jun-30-08 07:41 PM	Jul-11-08 07:42 PM	Pending Test Results

ALM - Release Summary Report

Special Commands

Table 3-23 describes the special commands provided by ALM to support integration of PPM Center with Quality Center.

Table 3-23. Special commands for integration of PPM Center with Quality Center

Special Command	Description
ksc_create_defect_in_QC	Creates an execution step that will create a defect in Quality Center
ksc_create_requirement_in_QC	Creates an execution step that will create a requirement in Quality Center

4 Integration of PPM Center with HP Service Manager

Introduction to Integration of PPM Center with HP Service Manager

For an overview of the integration of PPM Center with HP Service Manager, see *Integration of PPM Center with Service Desk Applications* on page 17.

The integration is enabled by a configurable HP Service Manager adapter file in PPM Center along with the request types and workflows provided by ALM, so that PPM Center acts as a single repository for application-related requests for change (RFCs). The adapter converts changes (tickets) in HP Service Manager to requests for change (RFCs), and then imports those RFCs into PPM Center for processing.

Conversely, using a configurable PPM Center adapter file that also resides in PPM Center, the integration can optionally *update* HP Service Manager changes based on subsequent changes made in PPM Center to the RFCs.

If the HP Service Manager adapter file and the associated PPM Center adapter file are both configured, such that data can be sent in both directions between HP Service Manager and PPM Center, the integration is said to be "bidirectional."

A separate adapter file is required for each mapping between a HP Service Manager change and a PPM Center request type.

ALM provides two default adapter files—a HP Service Manager adapter file and an associated default PPM Center adapter file.

The integration runs as a service in the PPM Server. As described later, the configuration of an adapter file controls various aspects of its import process.

This chapter describes how to configure the adapters in PPM Center and the HP Service Manager application for integration. This chapter is intended for HP Service Manager administrators or for PPM Center system administrators who are also familiar with HP Service Manager.

For information about the supported versions of HP Service Manager, see the *System Requirements and Compatibility Matrix*.

No software needs to be installed on the HP Service Manager server for integration with PPM Center. However, see the *System Requirements and Compatibility Matrix*.

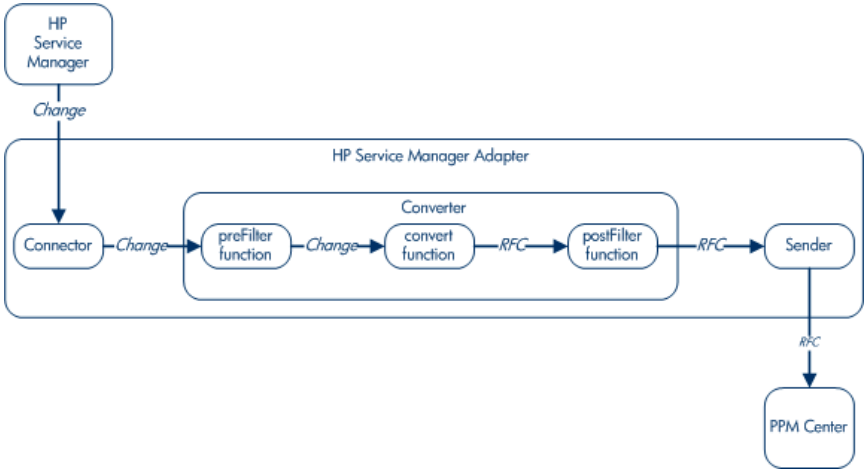
For information about the ALM - Request for Change (RFC) request type in PPM Center that is used to establish integration of PPM Center with HP Service Manager, see *ALM - Request for Change (RFC) Request Type* on page 34.

For references to more information about HP Service Manager, see *HP Service Manager Documentation* on page 22.

Conversion of HP Service Manager Changes to PPM Center RFCs

Figure 4-1 depicts the flow for converting a change in HP Service Manager to an ALM request for change (RFC), and importing the RFC into PPM Center.

Figure 4-1. Using the HP Service Manager adapter to import changes from HP Service Manager into PPM Center



The HP Service Manager adapter consists of the following three components:

- **Connector.** Collects changes from the HP Service Manager system.
- **Converter.** Uses field mapping to convert the changes from the HP Service Manager data model in which the changes were created to RFCs for the PPM Center data model.

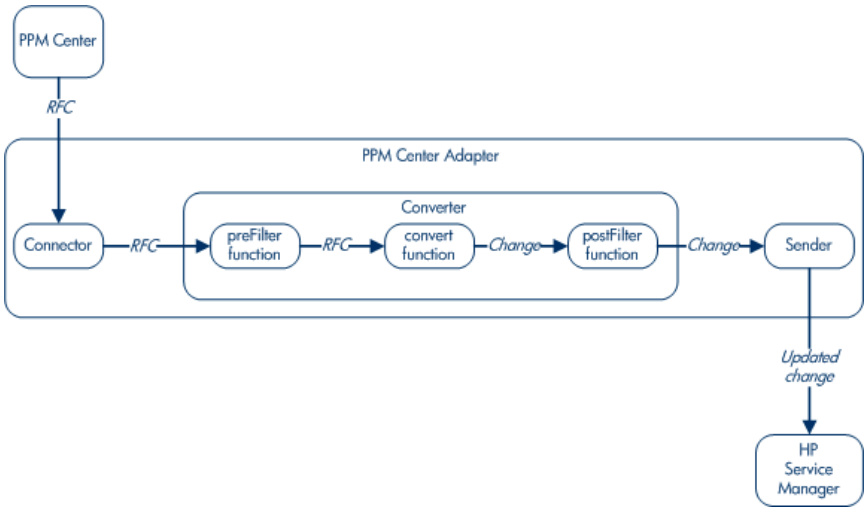
  The converter also contains two optional filters to control which changes are imported into PPM Center. The preFilter filters out categories of changes you specify in the HP Service Manager data model before those changes are converted. After the HP Service Manager changes are converted to RFCs, the postFilter filters out categories of requests you specify before those requests are presented to the sender.
- **Sender.** Using the RFC data from the converter, creates the RFCs in PPM Center.

Conversion of PPM Center RFCs to HP Service Manager Change Updates

Similar to the HP Service Manager adapter, the PPM Center adapter consists of connector, converter, and sender components. In this case, these components allow HP Service Manager to import updates from PPM Center.

Figure 4-2 depicts the flow for converting an ALM RFC (request for change) in PPM Center to an update to a change in HP Service Manager, and importing the update into HP Service Manager.

Figure 4-2. Using the PPM Center adapter to import change updates from PPM Center into HP Service Manager



Overview of Configuring the HP Service Manager Integration

Before configuring the integration, you must identify the HP Service Manager data attributes that will be integrated with PPM Center, including which of the attributes of HP Service Manager changes to send to PPM Center, and, for bidirectional integration, which of the attributes to receive back from PPM Center.

Before you can begin importing changes from HP Service Manager into PPM Center, you must configure HP Service Manager and configure the HP Service Manager adapter in PPM Center to enable integration. The procedures are summarized as follows:

- Configure HP Service Manager in the particular ways required for integration of PPM Center with HP Service Manager.
- Generate HP Service Manager Web service stubs for HP Service Manager. PPM Center needs the HP Service Manager Web service stubs to connect to HP Service Manager.
- Configure the HP Service Manager adapter configuration file on the PPM Server, to support converting a change in HP Service Manager to an ALM request for change (RFC) and then importing the RFC into PPM Center. ALM provides an HP Service Manager default adapter configuration file.
- If you want the integration to be bidirectional, that is, to also send updates that are made in PPM Center RFCs back to HP Service Manager as change updates, configure the PPM Center adapter configuration file on the PPM Server. ALM provides a default PPM Center adapter configuration file associated with HP Service Manager.
- Configure the required `server.conf` parameter in PPM Center.
- Restart the PPM Server in normal mode and verify that the ALM Startup service has started.
- Configure logging of errors and events.

Configuring HP Service Manager for Integration with PPM Center

Before starting these configuration procedures, make sure that the HP Service Manager server, HP Service Manager client, and HP Service Manager Webtier are installed and running.

Integration of HP Service Manager with PPM Center requires specific configuration of HP Service Manager, as described in the following sections.

PPM Center can be integrated with multiple instances of HP Service Manager, if those instances are at the same version. (See the *System Requirements and Compatibility Matrix*.) However, the procedures in the following sections must be performed identically on the multiple HP Service Manager instances.

If you already integrated HP Service Manager with PPM Center and you upgrade the integration solution to PPM Center 8.03 (or later), copy and rename two web service objects in HP Service Manager as follows to make sure that the integration will continue to work:

- `Change -> ChangePPMIntALM`
- `ChangeTask -> ChangeTaskPPMIntALM`

Configuring the Change Management Module

To configure the Change Management module in HP Service Manager:

1. To enable HP Service Manager to provide PPM Center with the changes sorted by their last update times, as required by this integration:

   a. Navigate to **System Definition > Tables > cm3r > Keys** and on that screen, click **New.**

   b. Add a new key constraint to the database table. The constraint should be of the type “Not Null” and should contain the **sysmodtime** field. If the HP Service Manager system uses another field to contain the last modified date/time of the record, use that field instead.

   c. Add a new key constraint to the database table. The constraint should be of the type “Not Null” and should contain the **orig.date.entered** field,

for use in the initial load mode (for more information, see the **initial-load-state** adapter attribute in *Table 4-1* on page 111).

d. (For integration with PPM Center version 8.03 or later, skip this step) To make sure that the **sysmodtime** and **orig.date.entered** fields are exposed through the Change Management Web Services:

   i. For version 7.01, select
   Menu Navigation > Tailoring > WSDL Configuration.

   For version 7.10, select
   Menu Navigation > Tailoring > Web Services > WSDL Configuration.

   ii. Type `cm3r` in the **Name** field and click **Search**.

   For version 7.01, the search finds only the Change entity and opens it immediately. Perform step iii.

   For version 7.10, the search finds the Change and ChangeIIA entities. You must open each entity and perform step iii for each object.

   iii. Click the **Fields** tab to add fields with captions and types to the table as follows:

New Field	New Caption	Type
sysmodtime	sysmodtime	DateTimeType
orig.date.entered	orig.date.entered	DateTimeType

2. Import the unload file provided with PPM Center to set up Change Management Web service for the integration with PPM Center.

   - For integration with PPM Center version 8.00, 8.00.01, or 8.02, the unload file is located at:

     `<PPM_Home>\conf\sdi\serviceManagerFiles\sm_operations`

     where `<PPM_Home>` represents the path where the PPM Center instance is installed. For example: `xyzserver/E/PPMServer`.

- For integration with PPM Center version 8.03 (or later), the unload file is located at:

  `<PPM_Home>\conf\sdi\serviceManagerFiles\PPMIntALMWebService.unl`

  where `<PPM_Home>` represents the path where the PPM Center instance is installed. For example: `xyzserver/E/PPMServer`.

Configuring the Change Management HP Service Manager Web Service

To configure the Change Management HP Service Manager Web service:

1. Associate a display action to the new processes:
   a. To navigate to the Objects menu, select **Menu Navigation > Tailoring > Document Engine > Objects.**
   b. Type **`cm3r`** in the **File name** field and click **Enter.**
   c. Specify the **default state.**
   d. Add a new Display action associated with the process—associate the **checkretract** action with **ccm.check.retract.**
   e. Add a new Display action associated with the process—associate the **checkapproval** action with **ccm.check.approval.**
   f. Close the cm3r object.
   g. Repeat step a through step f for the cm3t object.
2. (For integration with PPM Center version 8.03 or later, skip this step) To configure ChangeManagement WSDL:
   a. For version 7.01, select **Menu Navigation > Tailoring > WSDL Configuration**;
   For version 7.10, select **Menu Navigation > Tailoring > Web Services > WSDL Configuration**.
   b. In the **Service Name** field, type **`ChangeManagement`** and click **Search**.

c. Add the following actions for table cm3r:

Allowed Action	Action Name
checkapproval	CanApprove
checkretract	CanRetract

d. Repeat step c for table cm3t.

Configuring Browsing of HP Service Manager Changes from a URL

This optional procedure enables RFCs in PPM Center to be updated with URL links to the corresponding changes in HP Service Manager, so that PPM Center users can easily jump directly to those changes. To enable this capability, configure HP Service Manager as follows (otherwise go to *Configuring for Bidirectional Integration* on page 105):

1. To configure the Web server URL in the HP Service Manager server:
   a. To open the System Information Definition, select **Menu Navigation > System Administration > Base System Configuration > Miscellaneous > System Information Record.**
   b. In the form, select the **Active Integrations** tab.
   c. In the **WebServer URL** field in the WebServer Information pane, type the URL of the HP Service Manager Web server configured for Web access. For example:

      `http://<Host>:<Port>/sm/index.do`

   d. Click **OK** to save the System Information Definition and exit.
2. To create and configure the **record.url** field in the cm3r table:
   a. Create the **record.url** field in the cm3r table, using the following HP Service Manager Help topic:

      "How do I add a field to a table?"

b. Configure the **record.url** field as follows:

Section Name	Field Name	Value
General Properties	Type	Character
General Properties	Caption	Change URL

c. In the **SQL mapping** section, do the following:

   i. Type `RECORD_URL` in the **SQL field name** field.

   ii. Type `VARCHAR` in the **SQL data type** field.

   iii. Type `400` in the **SQL data length** field.

d. (For integration with PPM Center version 8.03 or later, skip this step.) To add **record.url** to the Change Management Web service:

   i. For version 7.01, select
   Menu Navigation > Tailoring > WSDL Configuration.

   For version 7.10, select
   Menu Navigation > Tailoring > Web Services > WSDL Configuration.

   ii. Type `cm3r` in the **Name** field and click **Search**.

   For version 7.01, the search finds only the Change entity and opens it immediately. Perform step iii.

   For version 7.10, the search finds the Change and ChangeIIA entities. You must open each entity and perform step iii for each object.

   iii. Click the **Fields** tab to add a field with caption and type to the table as follows:

New Field	New Caption	Type
record.url	record.url	StringType

e. The **record.url** field is populated in the cm3r.pre.add trigger. To configure this trigger:

   i. Navigate to **System Definition > Tables > cm3r.**

   ii. Open the list of triggers.

   iii. Open the cm3r.pre.add trigger.

   iv. Copy the following JavaScript into the trigger:

```
_rec_number = record.number;
var _filename = "cm3r";
var _query = "number=\"" + _rec_number+ "\"";
var _title = "Change number " + _rec_number;
var _link=system.library.urlCreator.getURLFromQuery
                          (_filename, _query, _title);
record.record_url =_link;
```

   v. Click **Save** to save the script.

   vi. Click **Compile** to check for any errors and compile. No errors should occur.

   Now, any new record will have the **record.url** field populated. However, as described in the following steps, you will need to perform the Mass Update procedure to populate the **record.url** field for existing records.

f. To prepare to perform the Mass Update procedure.

   i. Click **Change Management > Changes > Search Changes.**

   ii. Use **Search** to display a list of change records.

   iii. Select the records you want to update.

g. To perform the Mass Update procedure:

   i. Click **Mass Update** in the toolbar to start updating the listed records.

   Database Manager displays the initial form again, but with different options (buttons).

ii. Do *not* specify values in any field. Click **Complex Update.**

Database Manager displays the Mass Add/Update Instruction screen.

iii. Specify the following assignment statement in the **Instructions for action on EACH RECORD** input field:

```
record.url in $file =
jscall("urlCreator.getURLFromQuery","cm3r",
                  "number=\"" + number in $file + "\"",
                    "Change number " + number in $file)
```

For each record updated, this step sets the **record.url** field based on the Web server URL entered in System Information Record. Then this step returns terminal control to you and displays the following message:

```
<n> records updated in the cm3r file.
```

where `<n>` is the number of records updated.

h. To browse directly from the Web server using a URL that includes a ticket ID, disable the `querySecurity` parameter by using the instructions in the following HP Service Manager Help topic:

"Web parameter: sc.querySecurity"

i. Add the following line to the conversion script file in PPM Center for converting HP Service Manager changes to PPM Center requests:

```
ppmRFC.addURLReference(serviceManagerRFC.get
       ("record.url"), <display text for URL reference>);
```

where `<display text for URL reference>` represents the text to be displayed for the link to the URL.

For information about copying the sample conversion file provided with ALM and revising the copy, see *Configuring the HP Service Manager Adapter Converter Property (Script)* on page 115.

For information about the `addURLReference` function, see *ppmRFC Object* on page 118.

Configuring for Bidirectional Integration

Perform this procedure only if you plan to configure the integration to be bidirectional.

To be able to verify later that bidirectional integration works, configure the fields that are required to map a PPM Center request to an HP Service Manager change. For example:

- Create a structure called ppmFields in the cm3r table. See the following Help topic:

  "How do I add a structure to the Database Dictionary?"

- Create fields in the ppmFields structure. If you want to use the conversion script file provided with ALM as is, for HP Service Manager enter the following fields:

  - **`ppmURL`** with a **Caption** of **`ppmURL`** and select a **Type** of **StringType.**
  - **`requestModifiedDate`** with a **Caption** of **`reqModDate`** and select a **Type** of **DateTimeType.**

Generating Web Service Stubs

Perform this procedure for new installations of ALM and after any upgrade of PPM Center.

In HP Service Manager, you can modify which fields are available through Web services. Each time you modify these settings, a new Web Services Description Language (WSDL) descriptor is created. In the PPM Server, you must regenerate the Web service stubs from the new descriptor.

To generate the stubs:

1. Navigate to the `<PPM_Home>/bin/sdi` directory on the PPM Server.

   where `<PPM_Home>` represents the path where the PPM Center instance is installed. For example: `xyzserver/E/PPMServer`.

2. Run the following script:

```
./kGenerateServiceCenterStub.sh <wsdl-url> <PPM_ServerName>
```

where

`<wsdl-url>`	represents the HP Service Manager WSDL URL for Change Management.
`<PPM_ServerName>`	represents the subdirectory of `<PPM_Home>/server` specified during installation as the value for the `KINTANA_SERVER_NAME` parameter in the `server.conf` file. (This value is not necessarily the actual host name of the server.) When generated, the stubs will be placed in this subdirectory.

The specific script is in the following format:

```
./kGenerateServiceCenterStub.sh http://<Host>:<Port>/
      sc62server/PWS/ChangeManagement?wsdl <PPM_ServerName>
```

For example:

```
./kGenerateServiceCenterStub.sh http://ServManager:13080/
               sc62server/PWS/ChangeManagement?wsdl kintana
```

3. Verify that the stubs are now in the following directory:

```
<PPM_Home>/server/<PPM_ServerName>/deploy/itg.war/WEB-INF/
                                                  classes/
```

The stub generation might fail if the host is not resolvable by name. To resolve the host by name, make an entry in the `hosts` file for the machine you want to connect. See the documentation for your operating system for the location of the `hosts` file.

Configuring the HP Service Manager Adapter Configuration File

The HP Service Manager adapter configuration file is an XML file in PPM Center that enables integration of HP Service Manager with PPM Center and converts HP Service Manager changes to PPM Center requests. The configuration file consists of the following components, each with its own attributes or properties (see *Figure 4-1* on page 95):

- General settings for the adapter itself, such as its name and the name of the HP Service Manager application in which the changes are created.
- Connector between HP Service Manager and the adapter.
- Converter of changes in the HP Service Manager data model to generic requests in the PPM Center data model. The converter calls the scripts that define the field mapping and filter functions.
- PPM Center sender, which sends the converted and filtered requests to PPM Center.

If PPM Center is operating in a clustered server configuration, share or copy the `<PPM_Home>/sdi-persistency` directory and the `<PPM_Home>/conf/sdi` directory among all the servers in the cluster.

The following sections describe how to configure the HP Service Manager adapter configuration file and the scripts called by its converter, and how to modify copies of the provided files while preserving the originals.

Location, Naming, and Structure of HP Service Manager Adapter Configuration Files

Each HP Service Manager adapter configuration file must follow specific conventions for its location, naming, and structure, as described in the following sections.

Location and Naming of the HP Service Manager Adapter Configuration File

The adapter configuration files are located in the `<PPM_Home>/conf/sdi` directory of the PPM Server. This directory contains the following:

- Configuration file for the adapter (or one for each adapter if there are multiple adapters).

  In this configuration file, you define a name for the adapter. The configuration file must have a `.settings` file extension.

- Subdirectory (or one for each adapter configuration file if there are multiple files).

  The subdirectory contains the conversion scripts, which are called by the converter to map the fields between and to filter the changes and requests. The name of the subdirectory must be the same as the `<adapter name>` (for a description, see *Structure of the HP Service Manager Adapter Configuration File* on page 109 and *Table 4-1* on page 111) followed by `.ext`.

  For example, if the adapter name is `serviceManager-adapter`, the `<PPM_Home>/conf/sdi` directory must contain a subdirectory named `serviceManager-adapter.ext` to hold all the conversion script files for the adapter.

Structure of the HP Service Manager Adapter Configuration File

ALM provides, as a template, a default HP Service Manager adapter configuration file named `serviceManager-adapter.settings1`. The adapter file you configure and use must have a `.settings` file extension.

Copy the default adapter file (to preserve the original), and rename the copy with a `.settings` file extension and, if desired, a different filename.

As detailed in subsequent sections, the adapter file has the following basic structure, including adapter attributes, and properties for its connector, converter, and sender:

```
<?xml version="1.0" encoding="UTF-8"?>
<settings>

<adapter adapter-name="<adapter name>">
   <service-desk-application><SD application>
      </service-desk-application>
   <number-of-tickets><number of tickets>
      </number-of-tickets>
   <polling-schedules><schedule></polling-schedules>
   <polling-frequency><frequency></polling-frequency>
   <initial-load-state><date></initial-load-state>

   <request-types>
   <request-type level="1">
   <polling-operation>

   <connector>
   <connector-type>serviceManagerChange</connector-type>
      <properties>
         idProperty=
         userQuery=
         lastUpdatedPropertyForQuery=
         creationDatePropertyForQuery=
         lastUpdatedPropertyForResult=
         creationDatePropertyForResult=
         keyMethodName=
         timeZone=
         wsDateFormatPattern=
         queryDateFormatPattern=
         userName=
         password=
         serviceUrl=
      </properties>
   </connector>
```

```
   <converter>
   <converter-type>scriptConverter</converter-type>
      <properties>
         scripts=<convert1>.js,<convert2>.js,...
      </properties>
   </converter>

   </polling-operation>
   </request-type>
   </request-types>

   <sender>
   <sender-type>PPMSender</sender-type>
      <properties>
         userName=
         password=
         requestType=
         updateRequest=
         ticketIdFieldName=
         sdSystemFieldName=
         staticFieldNames=
      </properties>
   </sender>

</adapter>

</settings>
```

Do not delete or change the values provided for `<connector-type>`, `<converter-type>`, or `<sender-type>`.

The following sections describe how to configure the adapter attributes, the connector properties, the converter property (`scripts`), and the sender properties.

Configuring the HP Service Manager Adapter Attributes

Specify the adapter attributes of the HP Service Manager adapter configuration file, such as the adapter name and the service desk application, as described in *Table 4-1*.

Table 4-1. HP Service Manager adapter attributes (page 1 of 2)

Attribute Name (*Required)	Description	Default Value
*adapter-name	Logical name that represents the adapter name on the client machine. For example: serviceManager-adapter This name is also used for the scripts (`.ext`) directory. (See *Location and Naming of the HP Service Manager Adapter Configuration File* on page 108.)	(None)
*service-desk-application	Unique logical name for the service desk system you are using. For example: HP Service Manager	(None)
number-of-tickets	Number of changes that the adapter processes at a time.	50
polling-schedules	Times of day that the adapter polls HP Service Manager for changes, formatted as a list of cron expressions separated by the new line character. For example: 30 * * * * *<new line*> 0 * * * *	(None)

Table 4-1. HP Service Manager adapter attributes (page 2 of 2)

Attribute Name (*Required)	Description	Default Value
polling-frequency	Frequency (in seconds) that the adapter polls HP Service Manager for changes.	If polling-schedules and polling-frequency are unspecified, then the default polling-frequency is 30 seconds, starting when you restart the PPM Server.
initial-load-state	Earliest creation date and time of changes the adapter retrieves from HP Service Manager, in the following format: MM/dd/yy HH:mm:ss z For example: 10/19/08 21:30:00 EST After completion, the adapter does not retrieve any new or updated changes (per the polling-schedules and polling-frequency attributes) until this attribute is commented out.	(None)

Configuring the HP Service Manager Adapter Connector Properties

Specify the properties for the connector section of the HP Service Manager adapter configuration file as described in *Table 4-2*.

Table 4-2. HP Service Manager adapter connector properties (page 1 of 3)

Property Name (*Required)	Description	Default Value
*idProperty	Property name of the ID field in the instance returned from the HP Service Manager Web service.	(None)
userQuery	HP Service Manager query on the Change Management table (cm3r) that would work in the HP Service Manager query engine.	(None)
*lastUpdatedPropertyForQuery	Property name of the **last-update** field used to query the HP Service Manager Web service (the field name used in an expert search on the HP Service Manager client machine).	(None)
*creationDatePropertyForQuery	Property name of the **creation-date** field used to query the HP Service Manager Web service.	(None)
*lastUpdatedPropertyForResult	Property name of the **last-update** field in the instance returned from the HP Service Manager Web service (usually the field name exposed as API).	(None)
*creationDatePropertyForResult	Property name of the **creation-date** field in the instance returned from the HP Service Manager Web service.	(None)
*keyMethodName	Name of the method for request keys (usually the ID field name).	(None)

Table 4-2. HP Service Manager adapter connector properties (page 2 of 3)

Property Name (*Required)	Description	Default Value
*timeZone	Time zone, used for converting the last updated time of a request from HP Service Manager. Use the same time zone as the HP Service Manager server. The format can be GMT+<*X*> or GMT–<*X*>, where <*X*> is the offset in hh:mm format from GMT. For example, GMT–07:00. However, to handle Daylight Saving Time, use an area time zone instead of specifying a time relative to GMT.	(None)
*wsDateFormatPattern	Date format used in the HP Service Manager Web service answer. For available formats, see the following URL: http://java.sun.com/j2se/1.4.2/docs/api/java/text/SimpleDateFormat.html	(None)
*queryDateFormatPattern	Date format used for querying the HP Service Manager system (as used in the UI expert search). For available formats, see the following URL: http://java.sun.com/j2se/1.4.2/docs/api/java/text/SimpleDateFormat.html	(None)

Table 4-2. HP Service Manager adapter connector properties (page 3 of 3)

Property Name (*Required)	Description	Default Value
*userName	User name in the HP Service Manager system that PPM Center uses to connect to HP Service Manager. This user must have full access to the Change Management module in HP Service Manager.	(None)
*password	Password in the HP Service Manager system that PPM Center uses to connect to HP Service Manager.	(None)
*serviceUrl	Web service URL of HP Service Manager. The format is as follows: http://<*Service_Manager_Host*>:<*Port*>/sc62server/PWS/ where <*Service_Manager_Host*> represents the host machine where HP Service Manager is running.	(None)

Configuring the HP Service Manager Adapter Converter Property (Script)

The converter section of the HP Service Manager adapter configuration file contains the `scripts` property. The script file is written in the JavaScript language, and it maps the fields from the HP Service Manager data model to the PPM Center data model and filters the requests.

The `scripts` property is a script filename in the following format:

`scripts=<convert1>.js`

This file must reside in the same directory as the adapter, as follows:

`<PPM_Home>/conf/sdi/<adapter name>.ext`

where `<adapter name>` is as defined in *Table 4-1* on page 111.

Make sure that no line in a script exceeds 256 characters.

Multiple scripts are supported, using a comma-separated list, in the following format:

`scripts=<convert1>.js,<convert2>.js,...`

The adapter searches for these conversion script files in the adapter directory.

The conversion script is responsible for field mapping during the conversion of changes in the HP Service Manager data model to requests in the PPM Center data model, and for filtering the changes and requests.

The script must contain the `convert` function and can contain the optional `preFilter` and `postFilter` functions, as follows:

- **preFilter.** The following function filters the changes before they are converted to the PPM Center data model, so that no unnecessary requests are converted:

  ```
  preFilter(smChange)
  ```

  For example, the following `preFilter` function specifies that HP Service Manager changes with a Low priority will not be converted and that all other requests will be converted:

  ```
  function preFilter(smChange){
     if (smChange.get("Request Urgency")==SM_PRIORITY_LOW)
        return false;
     else
        return true;
  }
  ```

- **convert.** After identifying the PPM Center request attributes that are required for HP Service Manager changes, use the `convert` function of the conversion script to map fields of HP Service Manager changes to fields of PPM Center requests.

  The following `convert` function uses the mapping you specify to convert the fields of the change in HP Service Manager to the fields of the request in PPM Center:

  ```
  convert(smChange, ppmRFC)
  ```

- **postFilter.** The following function filters the converted requests, so that only the desired requests will be imported into PPM Center:

  ```
  postFilter(ppmRFC)
  ```

  For example, the following `postFilter` function specifies that only PPM Center requests with a status of Approved will be sent to the PPM Server:

  ```
  function postFilter(ppmRFC){
     ppmStatus=ppmRFC.getField("status");
     if (ppmStatus==STATUS_APPROVED)
        return true;
     else
        return false;
  }
  ```

ALM provides a sample conversion script file named `ConvertSMToPPM.js.sample` in the `<PPM_Home>/conf/sdi/serviceManager-adapter.ext` directory.

Copy the sample file, delete the `.sample` extension in the copy, and revise the copied conversion script as needed. Use the syntax described in the following sections for the conversion script APIs.

smChange Object

The smChange object represents the HP Service Manager change. For the `preFilter` and `convert` script functions, use one of the following functions to retrieve fields from the HP Service Manager change:

- `value=SMRFC.get(String fieldName);`
- `SMRFC.get("Request Urgency")=SM_PRIORITY_LOW;`

ppmRFC Object

The ppmRFC object represents the PPM Center request. For the `convert` and `postFilter` script functions, use the following functions to modify the PPM Center request fields:

- Reference ID

  You must use the following function to track the HP Service Manager change ID in the PPM Center request:

  ```
  setRefId(String referenceId);
  ```

- Time Stamp

  You must use the following function to set the last update time in the PPM Center request:

  ```
  /**
  * Set the time stamp in long format—that is, the number of
  * milliseconds since January 1, 1970, 00:00:00 GMT
  **/
  setUpdatedTimeStamp(long updatedTimeStamp);
  /**
  * Set the time stamp in the Java simple date format, which is
  * described at the following location:
  * http://java.sun.com/j2se/1.4.2/docs/api/java/text/
                                              SimpleDateFormat.html
  **/
  setUpdatedTimeStamp(String updatedTimeStamp, String format);
  ```

- Status

  Use the following function to change the status of the PPM Center request and allow the workflow of the request to advance:

  ```
  setStatus(String newStatus)
  ```

  To view or change the set of statuses provided with PPM Center, open the request type in the PPM Workbench, select the **Request Status** tab, and click **Request Status.** For more information, see the *HP Demand Management Configuration Guide.*

- General Field

  Use the following function to set the value of a general field in the PPM Center request:

  ```
  setField (String fieldName, String value);
  ```

- Date

  Use the following function to set the value of a date field in the PPM Center request:

  ```
  /**
  * Set the date in long format—that is, the number of
  * milliseconds since January 1, 1970, 00:00:00 GMT
  **/
  setDateValue(String fieldName, long date);
  /**
  * Set the date in the Java simple date format which is
  * described in the following location:
  * http://java.sun.com/j2se/1.4.2/docs/api/java/text/
                                          SimpleDateFormat.html
  **/
  setDateValue(String fieldName, String date, String format);
  ```

- Notes to be added upon creation of a PPM Center request

  Use the following function to add a note upon creation of a PPM Center request:

  ```
  addUserNoteOnCreate(String content, String addedBy,
                                                    long time;
  ```

- Notes to be added upon update of a PPM Center request

  Use the following function to add a note upon update of a PPM Center request:

  ```
  addUserNoteOnUpdate(String content, String addedBy,
                                                    long time;
  ```

- URL reference creation

  If you have configured HP Service Manager to expose the ticket URL as the `record.url` attribute (see *Configuring Browsing of HP Service Manager Changes from a URL* on page 101), you can use the following function to create a URL reference to an HP Service Manager change:

  ```
  addURLReference(String attachmentURL, String attachments);
  ```

Configuring the HP Service Manager Adapter Sender Properties

Specify the properties for the sender section of the HP Service Manager adapter configuration file as described in *Table 4-3*. The sender controls creating RFCs in PPM Center with the converted data.

Table 4-3. HP Service Manager adapter sender properties (page 1 of 2)

Property Name (*Required)	Description	Default Value
*userName	User name in PPM Center by whose credentials requests are created.	(None)
*password	Password of the userName. This password should be encrypted using the PPM Center script `kEncrypt.sh`, which is located in the `bin` directory of the PPM Server. Encrypted passwords must be created in a `CDATA` section.	(None)
*requestType	PPM Center request type that should be created for the converted changes. For example: ALM - Request for Change (RFC)	(None)
updateRequest	If set to `true`, enables *updates* made to HP Service Manager changes to be automatically sent to existing PPM Center requests. HP recommends retaining the default value of `false` because usually, after HP Service Manager changes are converted to PPM Center requests, processing takes place entirely in PPM Center.	false
*ticketIdFieldName [a]	Field in PPM Center containing the HP Service Manager ticket ID. This field is presented in the PPM Center request as the **Ticket Id** field in the **Service Desk Info** section.	(None)

Table 4-3. HP Service Manager adapter sender properties (page 2 of 2)

Property Name (*Required)	Description	Default Value
*sdSystemFieldName [a]	Field in PPM Center containing the HP Service Manager system name. This field is presented in the PPM Center request as the **System Name** field in the **Service Desk Info** section.	(None)
*staticFieldNames (Applicable and required only for bidirectional integration)	List of PPM Center request fields (separated by semicolons) that are *not* to be updated when changes are made to their mapped HP Service Manager change fields. This list is used to prevent inappropriate update of HP Service Manager tickets for bidirectional integration. For example, to prevent a ticket from being updated when the last update time in PPM Center changes, specify the following: REQD-SD_LAST_UPDATE	(None)

a. If PPM Center is integrated with multiple HP Service Manager servers, the combination of values in the ticketIdFieldName and sdSystemFieldName properties ensures that all the tickets from all the HP Service Manager servers are uniquely identified in PPM Center.

The sender is the last section of the adapter configuration file. Make sure the file ends with the following lines:

```
</adapter>
</settings>
```

This completes the configuration of the HP Service Manager adapter configuration file.

If PPM Center is operating in a clustered server configuration, share or copy the `<PPM_Home>/sdi-persistency` directory and the `<PPM_Home>/conf/sdi` directory among all the servers in the cluster.

If you want to establish bidirectional integration, proceed to *Configuring the PPM Center Adapter Configuration File*. Otherwise, go to *Configuring the server.conf Parameter* on page 134.

Configuring the PPM Center Adapter Configuration File

This procedure is optional. It establishes bidirectional integration. (See *Introduction to Integration of PPM Center with HP Service Manager* on page 93.) If you do not want to establish bidirectional integration at this time, proceed to *Configuring the server.conf Parameter* on page 134.

The PPM Center adapter configuration file is an XML file in PPM Center that enables integration of PPM Center with HP Service Manager and then converts PPM Center RFCs to HP Service Manager change updates. The configuration file consists of the following components, each with its own attributes or properties (see *Figure 4-2* on page 96):

- General settings for the adapter itself, such as its name.
- Connector between PPM Center and the adapter.
- Converter of RFCs in the PPM Center data model to change updates in the HP Service Manager data model. The converter calls the scripts that define the field mapping and filter functions.
- Sender, which sends the converted and filtered requests to HP Service Manager.

If PPM Center is operating in a clustered server configuration, share or copy the `<PPM_Home>/sdi-persistency` directory and the `<PPM_Home>/conf/sdi` directory among all the servers in the cluster.

The following sections describe how to configure the PPM Center adapter configuration file and the scripts called by its converter, and how to modify copies of the provided files while preserving the originals.

Location, Naming, and Structure of PPM Center Adapter Configuration Files

Each PPM Center adapter configuration file must follow specific conventions for its location, naming, and structure, as described in the following sections.

Location and Naming of the PPM Center Adapter Configuration File

The adapter configuration files are located in the `<PPM_Home>/conf/sdi` directory of the PPM Server. This directory contains the following:

- Configuration file for the adapter (or one for each adapter if there are multiple adapters).

  In this configuration file, you define a name for the adapter. The configuration file must have a `.settings` file extension.

- Subdirectory (or one for each adapter configuration file if there are multiple files).

  The subdirectory contains the conversion scripts, which are called by the converter to map the fields between and to filter the tickets and requests. The name of the subdirectory must be the same as the `<adapter name>` (for a description, see *Structure of the PPM Center Adapter Configuration File* on page 124 and *Table 4-4* on page 126) followed by `.ext`.

  For example, if the adapter name is `ppm-adapter`, the `<PPM_Home>/conf/sdi` directory must contain a subdirectory named `ppm-adapter.ext` to hold all the conversion script files for the adapter.

Structure of the PPM Center Adapter Configuration File

ALM provides, as a template, a default PPM Center adapter configuration file named `ppm-sm-adapter.settings1`. The adapter file you configure and use must have a `.settings` file extension.

Copy the default adapter file (to preserve the original), and rename the copy with a `.settings` file extension and, if desired, a different filename.

As detailed in subsequent sections, the adapter file has the following basic structure, including adapter attributes, and properties for its connector, converter, and sender:

```
<?xml version="1.0" encoding="UTF-8"?>
<settings>

<adapter adapter-name="<adapter name>">
   <service-desk-application><SD application>
      </service-desk-application>
   <number-of-tickets><number of tickets></number-of-tickets>
   <polling-schedules><schedule></polling-schedules>
   <polling-frequency><frequency></polling-frequency>

   <request-types>
   <request-type level="1">
   <polling-operation>

   <connector>
   <connector-type>PPMRequest</connector-type>
      <properties>
         sdSystemName=
         requestType=
         datePattern=
         userName=
         password=
         sdSystemFieldName=
         idProperty=
         updateTimeField=
         createTimeField=
         requestStatusNames=
      </properties>
   </connector>

   <converter>
   <converter-type>scriptConverter</converter-type>
      <properties>
         scripts=<convert1>.js,<convert2>.js,...
      </properties>
   </converter>
```

```
    </polling-operation>
    </request-type>
    </request-types>

    <sender>
    <sender-type>serviceManagerSender</sender-type>
       <properties>
          userName=
          password=
          queryDateFormatPattern=
          timeZone=
          keyMethodName=
          serviceUrl=
          staticFieldNames=
          idProperty=
       </properties>
    </sender>

</adapter>

</settings>
```

Do not delete or change the values provided for `<connector-type>`, `<converter-type>`, or `<sender-type>`.

The following sections describe how to configure the adapter attributes, the connector properties, the converter property (`scripts`), and the sender properties.

Configuring the PPM Center Adapter Attributes

Specify the adapter attributes of the PPM Center adapter configuration file, such as the adapter name and the service desk application, as described in *Table 4-4*.

Table 4-4. PPM Center adapter attributes

Attribute Name (*Required)	Description	Default Value
*adapter-name	Logical name that represents the adapter name on the client machine. For example: ppm-adapter This name is also used for the scripts (`.ext`) directory. (See *Location and Naming of the PPM Center Adapter Configuration File* on page 123.)	(None)
*service-desk-application	Unique, logical name for the PPM Center system you are using. For example: PPM	(None)
number-of-tickets	Number of tickets that the adapter processes at a time.	50
polling-schedules	Times of day that the adapter polls PPM Center for changes, formatted as a list of cron expressions separated by the new line character. For example: 30 * * * * <*new line*> 0 * * * *	(None)
polling-frequency	Frequency (in seconds) that the adapter polls PPM Center for changes.	If polling-schedules and polling-frequency are unspecified, then the default polling-frequency is 30 seconds, starting when you restart the PPM Server.

Configuring the PPM Center Adapter Connector Properties

Specify the properties for the connector section of the PPM Center adapter configuration file as described in *Table 4-5*.

Table 4-5. PPM Center adapter connector properties (page 1 of 2)

Property Name (*Required)	Description	Default Value
*sdSystemName	Name of the adapter from which changes are imported into PPM Center as requests. Must be the same value as specified for the service-desk-application property in the HP Service Manager adapter (see *Table 4-1* on page 111). For example: HP Service Manager	(None)
*requestType	PPM Center request type that should be created for the converted changes. For example: ALM - Request for Change (RFC)	(None)
datePattern	Date format for the date field. Use the Java™ simple date format. See the following URL: http://java.sun.com/j2se/1.4.2/docs/api/java/text/SimpleDateFormat.html	yyyy-MM-dd HH:mm:ss
*userName	User name in PPM Center by whose credentials requests are created.	(None)
*password	Password of the userName. This password should be encrypted using the PPM Center script `kEncrypt.sh`, which is located in the `bin` directory of the PPM Server. Encrypted passwords must be created in a `CDATA` section.	(None)

Table 4-5. PPM Center adapter connector properties (page 2 of 2)

Property Name (*Required)	Description	Default Value
*sdSystemFieldName	Field in PPM Center containing the HP Service Manager system name. This field is presented in the PPM Center request as the **System Name** field in the **Service Desk Info** section.	(None)
*idProperty	Property name of the ID field in the instance returned from the HP Service Manager Web service.	(None)
*updateTimeField	Field in PPM Center that represents the time the request was updated in PPM Center.	(None)
*createTimeField	Field in PPM Center that represents the time the request was created in PPM Center.	(None)
requestStatusNames	List of PPM Center request statuses, separated by semicolons (;). Only requests with the statuses you specify are retrieved from PPM Center for processing. However, if you do not specify any statuses, all requests are retrieved.	(None)

Configuring the PPM Center Adapter Converter Property (Script)

The converter section of the PPM Center adapter configuration file contains the `scripts` property. The script file is written in the JavaScript language. The script maps the fields from the PPM Center data model to the HP Service Manager data model, and filters the requests.

The `scripts` property is a script filename in the following format:

`scripts=<convert1>.js`

This file must reside in the same directory as the adapter, as follows:

`<PPM_Home>/conf/sdi/<adapter name>.ext`

where `<adapter name>` is as defined in *Table 4-4* on page 126.

Make sure that no line in a script exceeds 256 characters.

Multiple scripts are supported, using a comma-separated list, in the following format:

`scripts=<convert1>.js,<convert2>.js,...`

The adapter searches for these conversion script files in the adapter directory.

The conversion script is responsible for field mapping during the conversion of requests in the PPM Center data model to change updates in the HP Service Manager data model, and for filtering the requests and change updates.

The script must contain the `convert` function and can contain the `preFilter` and `postFilter` functions, as follows:

- **preFilter.** The following function filters the changes before they are converted to the HP Service Manager data model, so that no unnecessary requests are converted:

  ```
  preFilter(ppmRFC)
  ```

- **convert.** After identifying the HP Service Manager change attributes that need to be updated from the PPM Center requests, use the `convert` function of the conversion script to map fields of PPM Center requests to fields of HP Service Manager changes.

  The following `convert` function uses the mapping you specify to convert the fields of the request in PPM Center to the fields of the change in HP Service Manager:

  ```
  convert(ppmRFC, smChange)
  ```

- **postFilter.** The following function filters the converted change updates, so that only the desired updates will be applied to the corresponding change in HP Service Manager:

  ```
  postFilter(smChange)
  ```

ALM provides a sample conversion script file named `ConvertPPMToSM.js.sample` in the `<`*`PPM_Home`*`>/conf/sdi/serviceManager-adapter.ext` directory.

Copy the sample file, delete the `.sample` extension in the copy, and revise the copied conversion script as needed. Use the syntax described in the following sections for the conversion script APIs.

ppmRFC Object

The ppmRFC object represents the PPM Center request. For the `preFilter` and `convert` script functions, use the following function to retrieve request fields from PPM Center:

```
get(String fieldName);
```

smChange Object

The smChange object represents the HP Service Manager ticket. For the `convert` and `postFilter` script functions, use the following functions to modify the ticket fields:

- Reference ID

  You must use the following function to track the HP Service Manager change ID in the PPM Center request:

  ```
  setRefId(String referenceId);
  ```

- Time Stamp

  You must use the following function to set the last update time in the PPM Center request:

  ```
  /**
  * Set the time stamp in long format—that is, the number of
  * milliseconds since January 1, 1970, 00:00:00 GMT
  **/
  setUpdatedTimeStamp(long updatedTimeStamp);
  /**
  * Set the time stamp in the Java simple date format, which is
  * described at the following location:
  * http://java.sun.com/j2se/1.4.2/docs/api/java/text/
                                              SimpleDateFormat.html
  **/
  setUpdatedTimeStamp(String updatedTimeStamp, String format);
  ```

- General Field

  Use the following function to set a value of a general field in the PPM Center request:

  ```
  setField (String fieldName, String value);
  ```

- Date

  Use the following function to set a value of a date field in the PPM Center request:

```
/**
* Set the date in long format—that is, the number of
* milliseconds since January 1, 1970, 00:00:00 GMT
**/
setDateValue(String fieldName, long date);
/**
* Set the date in the Java simple date format which is
* described in the following location:
* http://java.sun.com/j2se/1.4.2/docs/api/java/text/
                                          SimpleDateFormat.html
**/
setDateValue(String fieldName, String date, String format);
```

Configuring the PPM Center Adapter Sender Properties

Specify the properties for the sender section of the PPM Center adapter configuration file as described in *Table 4-6*. The sender controls updating changes in HP Service Manager with the converted data.

Table 4-6. PPM Center adapter sender properties (page 1 of 2)

Property Name (*Required)	Description	Default Value
*userName	User name in the HP Service Manager system that PPM Center uses to connect to HP Service Manager. This user must have full access to the Change Management module in HP Service Manager.	(None)
*password	Password in the HP Service Manager system that PPM Center uses to connect to HP Service Manager.	(None)
*queryDateFormatPattern	Date format used for querying the HP Service Manager system (as used in the UI expert search). For available formats, see the following URL: http://java.sun.com/j2se/1.4.2/docs/api/java/text/SimpleDateFormat.html	(None)

Table 4-6. PPM Center adapter sender properties (page 2 of 2)

Property Name (*Required)	Description	Default Value
*timeZone	Time zone, used for converting the last updated time of a request from HP Service Manager. Use the same time zone as the HP Service Manager server. The format can be GMT+<*X*> or GMT–<*X*>, where <*X*> is the offset in hh:mm format from GMT. For example, GMT–07:00. However, to handle Daylight Saving Time, use an area time zone instead of specifying a time relative to GMT.	(None)
*keyMethodName	Name of the method for request keys (usually the ID field name).	(None)
*serviceUrl	Web service URL of HP Service Manager. The format is as follows: http://<*Service_Manager_Host*>:<*Port*>/sc62server/PWS/ where <*Service_Manager_Host*> represents the host machine where HP Service Manager is running.	(None)
*staticFieldNames (Applicable and required only for bidirectional integration)	List of HP Service Manager change fields (separated by semicolons) that are *not* to be updated when changes are made to their mapped PPM Center request fields. This list is used to prevent inappropriate update of PPM Center requests for bidirectional integration. For example, to prevent a request from being updated when the last update time in HP Service Manager changes, specify the following: sysmodtime	(None)
idProperty	Property name of the ID field in the instance returned from the HP Service Manager Web service.	(None)

The sender is the last section of the adapter configuration file. Make sure the file ends with the following:

```
</adapter>
</settings>
```

This completes the configuration of the PPM Center adapter file.

If PPM Center is operating in a clustered server configuration, share or copy the `<PPM_Home>/sdi-persistency` directory and the `<PPM_Home>/conf/sdi` directory among all the servers in the cluster.

Configuring the server.conf Parameter

To add and specify the parameter related to HP Service Manager integration to the PPM Center `server.conf` configuration file:

For more information about the steps in this procedure, see the *Installation and Administration Guide*.

1. Stop the PPM Server.
2. Run the following script:

   ```
   sh ./kConfig.sh
   ```

   Set the parameter and value as shown in the following table. (All parameter names begin with `com.kintana.core.server.` but that is not shown in the table.)

Parameter	Value
MAC_LOG_SEVERITY	Specify the level of logging to be used. When set to `0` (the default), only integration exceptions (errors) and a summary are logged. When set to `1`, non-error events related to the processing of changes are also logged. See *Error and Non-Error Logging* on page 136.

3. Restart the PPM Server.

Enabling the ALM Startup Service

To enable the ALM Startup service:

1. Log on to PPM Center.
2. From the menu bar, select **Open > Administration > Schedule Services.**

   The Schedule Services page opens.
3. In the **Service Name** column, select the **ALM Startup** service.
4. In the **Status** column for the service, select **Enabled.**
5. Specify one hour for the interval in the **Schedule** column. This interval has no effect on the polling of HP Service Manager for tickets.
6. Click **Save.**
7. If a date was specified in the `initial-load-state` HP Service Manager adapter attribute in order to retrieve existing HP Service Manager changes from that date forward, those changes will be retrieved, converted, and sent to PPM Center, but then no new HP Service Manager changes will be retrieved. In this case, to retrieve HP Service Manager changes on an ongoing basis, do the following:

For more information about the steps in this procedure, see the *Installation and Administration Guide.*

   a. Stop the PPM Server.
   b. Comment out the `initial-load-state` HP Service Manager adapter attribute.
   c. Restart the PPM Server in normal mode.
   d. Repeat step 1 through step 6 to verify that the ALM Startup service is running.

Error and Non-Error Logging

As described in the following sections, logging is essential for ensuring correct operation of the integration. You can specify the following two types of logging for HP Service Manager integration:

- System-level logging using a summary logs table and a log details table. See *System-Level Logging*.
- Configurable logging for conversion scripts. See *Configurable Logging for Conversion Scripts* on page 139.

System-Level Logging

System-level logging is the only way to administer the integration on an ongoing basis. HP recommends creating a portlet or a report to regularly query and display the logging tables and help you identify potential problems.

You can configure ALM to log only errors for integration exceptions and a summary, or to also log entries for non-error events related to the processing of changes. For information about setting the `server.conf` parameter that controls the level of logging (`MAC_LOG_SEVERITY`), see *Configuring the server.conf Parameter* on page 134.

Setting the `MAC_LOG_SEVERITY` parameter to `0` causes the summary logs table (`SDI_SUMMARY_LOGS`) to include only a summary of errors. Setting this parameter to `1` causes the summary logs table to also include information about tickets as they are being processed.

The summary logs table maintains only one row for each unique combination of the **TICKET_ID** and **ADAPTER_NAME** columns. See *Summary Logs Table* on page 137. Each row is updated on an ongoing basis as status changes.

The log details table (`SDI_LOG_DETAILS`) includes details about the errors that have a value of **Y** in the **MESSAGES** column of the summary logs table. See *Log Details Table* on page 138. (The setting of the `MAC_LOG_SEVERITY` parameter in the `server.conf` file does not affect the contents of the log details table.)

Summary Logs Table

The columns in the summary logs table (`SDI_SUMMARY_LOGS`) that contain useful information are described in *Table 4-7*.

Table 4-7. Summary logs table (SDI_SUMMARY_LOGS) (page 1 of 2)

Column	Description
LOG_ID	Primary key for this table.
TICKET_ID	Ticket ID imported using the connector. In some cases such as connection errors or authentication failures, the value is **SUMMARY.**
STATUS	Current state of the ticket. Possible values are as follows: • **Retrieved/Not processed.** The ticket was retrieved and has not been processed. • **preFilter Passed.** The ticket passed the `preFilter` function and was sent to the `convert` function. • **Rejected in preFilter.** The ticket did not pass `preFilter` criteria. • **Ticket converted.** The ticket passed the `convert` function and was sent to the `postFilter` function. • **postFilter Passed.** The ticket passed the `postFilter` function and was sent to the `sender` function. • **Rejected in postFilter.** The ticket did not pass the `postFilter` function. • **Error occurred in JavaScript.** An exception occurred in the `preFilter, convert,` or `postFilter` function when processing the JavaScript conversion file. • **Ticket processed.** The ticket was created in the target system. • **Errors occurred when sending the ticket.** An exception occurred and the ticket could not be sent to the `sender`.
LAST_UPDATE_DATE	Last time the ticket was updated in PPM Center.
COMPONENT	Component that logged the message—the connector, converter, or sender.

Table 4-7. Summary logs table (SDI_SUMMARY_LOGS) (page 2 of 2)

Column	Description
ADAPTER_NAME	Service desk name in the adapter settings file.
MESSAGES	If the value is **Y,** further details for this log entry are provided in the log details table (`SDI_LOG_DETAILS`). If the value is **N,** no further details are provided.
IN_PROCESS	If the value is **Y,** processing of this ticket is complete. If the value is **N,** processing of this ticket is not yet complete.

Log Details Table

The log details table (`SDI_LOG_DETAILS`) includes the details described in *Table 4-8* for the errors that have a value of **Y** in the **MESSAGES** column of the summary logs table.

Table 4-8. Log details table (SDI_LOG_DETAILS)

Column	Description
LOG_DETAIL_ID	Primary key for this table
LOG_ID	Foreign key to the entry in the `SDI_SUMMARY_LOGS` table
DETAILS	Detailed error message captured when the error occurred

Configurable Logging for Conversion Scripts

Configurable logging is useful for debugging your integration mapping. During testing, you can specify log messages that appear at key points in the conversion script to indicate correct or incorrect conversion. Before deploying the integration to production, you would typically want to comment out the messages for correct operation so they do not quickly accumulate in the logs.

If you want to view log messages describing the activity that occurs 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 `<PPM_Home>/script-logs` directory. Each adapter logs messages in a separate log file. The names of the log files are based on the names of the adapters for which the files log errors.

Within any of the script functions, a logging object with the following syntax should be included:

```
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.

Logging is also controlled by the severity specified in the PPM Center `logging.conf` file.

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

```
logger.info("Processing ticket " +
                serviceManagerRFC.get("header.changeNumber"));
```

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 this logging object, make sure the following line is included at the beginning of the conversion script:

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

5 Integration of PPM Center with Universal CMDB

Introduction to Integration of PPM Center with Universal CMDB

HP Universal CMDB consists of a business-service-oriented data model with built-in discovery of the following:

- Configuration items (CIs) and their dependencies
- Visualization and mapping of business services
- Tracking of configuration changes

When you integrate PPM Center with Universal CMDB, you can select CIs and run impact analysis reports from change requests in PPM Center, to determine which components of a system will be affected by a software change, and to what extent. The integration assists IT managers and Change Advisory Boards in deciding whether a change request should be approved for development or deployment.

For example, your software change might involve upgrading a database server. Before you can perform the upgrade, you need to stop the server. In some cases this could prevent users from accessing crucial services, or even cause a crash of your production system. Impact analysis determines the effect on the entire system of stopping the server, and gives you a report showing the components that will be impacted. This enables you to plan the change with minimal disturbance to your operations.

For more information about the benefits of this integration, see *Integration of PPM Center with HP Universal CMDB* on page 19.

For information about the versions supported for integration, see the *System Requirements and Compatibility Matrix*.

No software needs to be installed on the HP Universal CMDB server to integrate PPM Center and HP Universal CMDB. However, see the *System Requirements and Compatibility Matrix*.

For references to more information about HP Universal CMDB, see *HP Universal CMDB Documentation* on page 23.

Integration of PPM Center with Mercury Application Mapping was supported with PPM Center version 7.5 and Managing Application Change (MAC), but integration of PPM Center with Mercury Application Mapping is *not* supported with PPM Center version 8.00 and ALM. The MAM Impact Analysis field group is no longer available in version 8.00. During an upgrade of PPM Center to version 8.00, any MAM Impact Analysis reports in version 7.5 are attached to the associated requests as references, so the reports remain available to view after the upgrade.

Using Impact Analysis in a Change Request Lifecycle

Since a software change might be developed and deployed over a lengthy period of time, you might want to generate an Impact Analysis Report at the following stages in the lifecycle of the change request:

- **Before you approve or develop the change.** Before you approve or develop the change, it is useful to forecast the effect that introducing the change will have on your production system. You describe the intended change, specify the components that you think will be affected, and run impact analysis to forecast the effect of the change.

  The resulting report gives you an indication of how your system will cope with the change after the change has been developed and deployed, and helps you decide whether to approve the change for development.

- **After the change is approved for deployment to a production system, but before you deploy the change.** While the software change is being developed and then evaluated for quality, modifications may occur in your system infrastructure. For example, servers might be added or removed, or applications might be changed. As a result, the original impact analysis may no longer give an accurate indication of what will happen when you introduce the change. So after the change has been developed, evaluated, and approved for deployment, you perform another impact analysis to give you an up-to-date picture.

Configuring Universal CMDB for the Integration

To configure Universal CMDB for the integration, configure views in Universal CMDB and create a PPM Center user and password in Universal CMDB. See the Universal CMDB documentation, listed in *HP Universal CMDB Documentation* on page 23.

Configuring PPM Center for the Integration

Perform the procedures in this section to configure PPM Center for the integration.

- PPM server must have the same domain name as the Universal CMDB server. For example, if the Universal CMDB server domain name is abc.chn.hp.com, the PPM server must be xyz.chn.hp.com, such as anbo.chn.hp.com.
- PPM server must be running on the save protocol as the Universal CMDB server. For example, if the Universal CMDB server is running on HTTPS, the PPM server must be running on HTTPS as well.

Configuring server.conf Parameters in PPM Center

For more information about the steps in this procedure, see the *Installation and Administration Guide*.

To add and specify the parameters related to Universal CMDB integration to the PPM Center `server.conf` configuration file:

1. Stop the PPM Server.
2. Run the following script:

   ```
   sh ./kConfig.sh
   ```

   Set the parameters and values as shown in the following table. (All parameter names begin with `com.kintana.core.server.` but that is not shown in the table.)

Parameter	Value

UCMDB_SERVER_URL	URL of the Universal CMDB server:
	`http://<UCMDB_Host>:<port>/ucmdb/`
	or
	`https://<UCMDB_Host>:<port>/ucmdb/`
	where `<UCMDB_Host>` represents the host machine on which Universal CMDB is running.
	Note: If the Universal CMDB server is configured to support HTTPS, make sure you configure the UCMDB_SSL_KEYSTORE_PATH parameter.

UCMDB_GATEWAY_URL	URL of the Probe Gateway component of the Discovery and Dependency Mapping (DDM) Probe. The Probe Gateway provides communication (HTTP or HTTPS) between the Probe Manager and the Universal CMDB user for processes such as downloading tasks and returning task results. The value for `<UCMDB_Host>:<port>` is usually the same as for the UCMDB_SERVER_URL parameter. `http://<UCMDB_Host>:<port>/mam/gateway?`
UCMDB_USER	Universal CMDB user name, for example, admin. This user name must include only single-byte characters.
UCMDB_PASSWORD	Password for Universal CMDB user specified in UCMDB_USER. This password must be encrypted as described in *Encrypting the Password Specified as a server.conf Parameter*.

Parameter	Value
UCMDB_SERVER_VERSION	Version of the Universal CMDB server. • For Universal CMDB versions 7.50 and 8.00, specify `7.5` or `7.50` as the version of Universal CMDB being used on the Universal CMDB server, even if Universal CMDB is at version 8.00. • For Universal CMDB version 9.00, specify `9.00` as the version of Universal CMDB.
UCMDB_MAX_CI_NUMBER	Maximum number of CIs a request is allowed to have. Valid values are from 1 to 100. If a value greater than 100 is specified, the PPM Server will not restart and displays an error message. The default is 20.
UCMDB_SSL_KEYSTORE_PATH	Universal CMDB keystore path, used only if the UCMDB_SERVER_URL parameter uses HTTPS.
IMPACT_ANALYSIS_REPORT_CATEGORY	Impact analysis report category, for example, `UCMDB`.
IMPACT_ANALYSIS_REPORT_SEVERITY	Impact analysis report severity, for example, `Warning(1)`.
UCMDB_NAME_FIELD	The field that stores the CI name, for example, `name`.

3. Restart the PPM Server.

Encrypting the Password Specified as a server.conf Parameter

The password that you assigned to the `UCMDB_PASSWORD` parameter must be encrypted, as follows:

- *For PPM Center versions 8.00, 8.00.01, and 8.02*

  a. Navigate to the `<PPM_Home>/bin/ucmdb` directory.

  b. Run the `kEncryptUcmdbPassword.sh` utility.

c. Specify the password you want to encrypt.

   The utility encrypts the password and displays the encrypted text.

d. Copy the text in the `Encrypted text` section on the screen and paste the text as the value for `UCMDB_PASSWORD` in the `server.conf` file, making sure that you do not copy any carriage returns into the file.

- *For PPM Center version 8.03 and later*

  Starting from PPM Center version 8.03, you need to encrypt the Universal CMDB password with PPM's encryption tool `kEncrypt.sh`.

  To encrypt the password,

  a. Navigate to the `<PPM_Home>/bin` directory.

  b. Run the following:

     ```
     sh kEncrypt.sh -t admin
     ```

     The encrypted text returns.

  c. Copy and paste the encrypted text as the value for parameter `UCMDB_PASSWORD` in the `server.conf` file.

Cookies need to be enabled for the browser you use.

Configuring a Request Type

The integration requires a request type with the Universal CMDB Impact Analysis field group. The ALM - Request for Change (RFC) request type provided with ALM includes this field group, which is enabled by default.

If necessary, you can add the Universal CMDB Impact Analysis field group to a different request type, as follows:

1. Log on to PPM Center.
2. From the menu bar, select **Open > Administration > Open Workbench.**

   The PPM Workbench opens.

3. From the shortcut bar, select **Demand Mgmt > Request Types.**

   The Request Types Workbench opens.

4. Select the request type to which you will add the Universal CMDB Impact Analysis field group.

5. Open the request type and its request header type.

6. Click **Field Groups.**

7. In the Field Groups window, scroll down and select the checkbox to enable the Universal CMDB Impact Analysis field group.

8. Click **OK** to add the Universal CMDB Impact Analysis field group to the request header type.

9. Expand **Universal CMDB Impact Analysis** in the **Prompt** column on the **Fields** tab in the request header type.

10. Select the **CI List** field, and click **Edit.**

11. On the **Attributes** tab, select **No** for the **Display Only** option and select **Yes** for the **Display** option.

12. Select the **Security** tab and edit field-level security for the **CI List** field as needed.

13. Click **OK** to save and close the Edit window and click **OK** to save and close the Request Header Type window.

14. Return to the request type, which now has the Universal CMDB Impact Analysis section, including the **CI List** field, based on the changes you made to the request header type.

15. Use the **Layout** tab to reposition the **Impacted Configuration Items** section on the request type, as desired.

On the **Status Dependencies** tab for the **CI List** field, leave the **Required, Reconfirm,** and **Clear** options set to **No.**

You can change the **Visible** and **Editable** options as desired.

Using the Integration

The Configuration Management Database (CMDB) in Universal CMDB contains information about all your CIs (servers, applications, hosts, and so on) and their relationships. CIs can vary widely in complexity, size, and type, from an entire system (including all hardware, software, and documentation) to a single module or minor hardware component.

For example, the CMDB contains information about which CIs are affected when other CIs stop functioning or have operational problems.

You generally perform impact analysis as follows:

- Select the CIs that you suspect might be affected by the planned software change.

  HP recommends using CI names in Universal CMDB that will be meaningful to you in PPM Center.

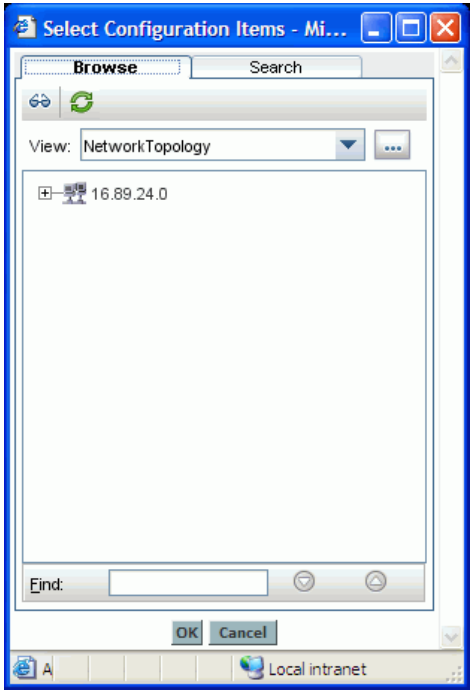
- Run impact analysis on the selected CIs. Impact analysis analyzes the relationships among the selected CIs in the CMDB, and generates a report showing the CIs that will be affected by the planned change.
- Run impact analysis at additional points. Examples:
  - Before approving a change, to forecast the effect that the change will have on your system.
  - After the change has been created, in case your system infrastructure has changed since the previous impact analysis was performed.

Selecting CIs in Universal CMDB and Adding the CIs to a Request

To select the desired CIs in Universal CMDB to add to the request:

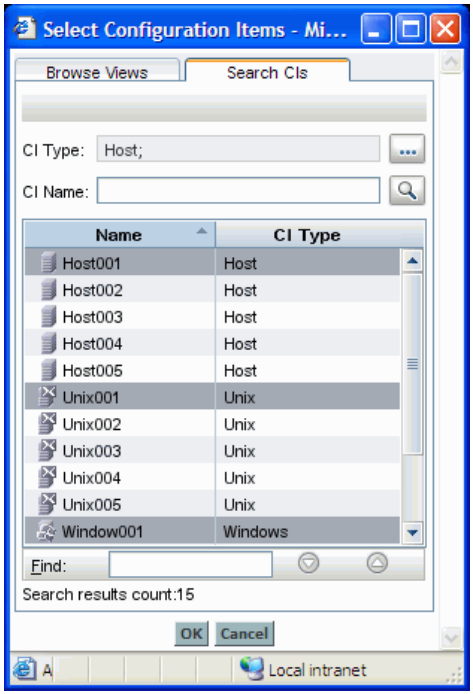
1. Log on to PPM Center.
2. From the menu bar, select **Create > Request.**
3. Create a request using a request type that includes the Universal CMDB Impact Analysis field group.
4. In the **Impacted Configuration Items** section of the new request, click **Select Configuration Items.**

   The CI selector applet from Universal CMDB launches, with **Browse** and **Search** tabs.
5. Use the tabs to select the desired CIs for the request.
   - To use the **Browse** tab, select a view such as **Network Topology** from the **View** list.



   Expand the view as desired. You can select multiple items in the tree by using **`Ctrl` + click** or **`Shift` + click.**

- To use the **Search** tab, complete the **Search for** field to limit the search results, and select a **CI Type.** Click the search icon for the **CI Name** field and select items as needed. You can select multiple items by using **`Ctrl` + click** or **`Shift` + click.**

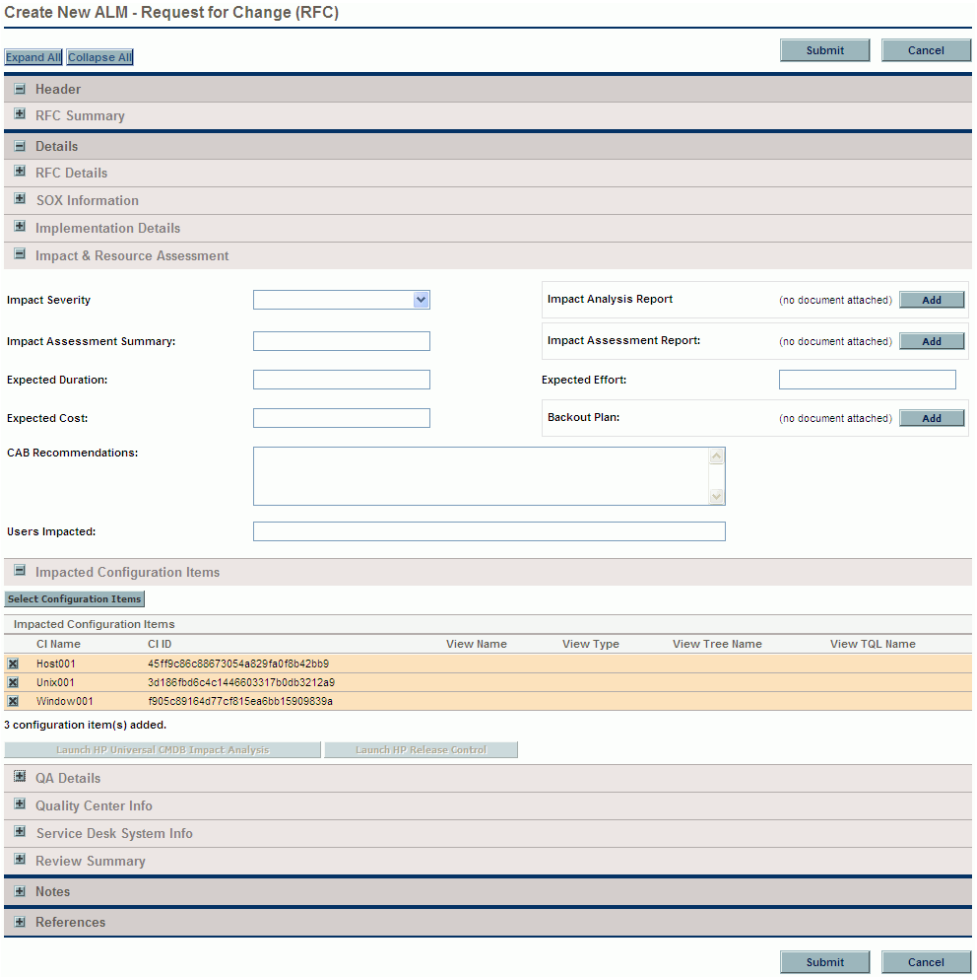


6. Click **OK** to add the selected CIs to the request, under the **Impacted Configuration Items** heading in the **Universal CMDB Impact Analysis** section. The added CIs are shaded in color. Duplicate CIs are not added.

   For each CI, data appears in the **CI Name** and **CI ID** columns. If you selected CIs using the **Browse** tab in the Universal CMDB applet, data also appears for the **View Name, View Type, View Tree Name,** and **View TQL Name** columns. Data does not appear for these columns if you selected CIs using the **Search** tab, because the same CI can exist in multiple views.

   If adding the CIs to the request would exceed the maximum number allowed by the `UCMDB_MAX_CI_NUMBER` parameter in the `server.conf` file, none of the selected CIs are added.

   When you select and add CIs in Universal CMDB to the PPM Center request, the CIs are never changed or deleted in Universal CMDB.



7. As necessary, click the **Delete** icon to the left of any CI you want to delete.

   The **Delete** icon becomes an undo icon to allow you to undo the pending deletion.

8. After the desired CIs are listed in the request, click **Submit** (or **Save** for an existing request) to add the list of CIs to the request.

If a request with a list of CIs is copied, the list of CIs is not copied to the new request.

The CIs in a request are available as part of standard Web services for a request. The token is `REQ_VP_KNTA_UCMDB_CI_LIST`. The value of the field represented by this token is a comma-separated list of CI IDs.

Generating Impact Analysis Reports

To generate an Impact Analysis Report for the CIs that have been added to a request:

1. Click the **Launch HP Universal CMDB Impact Analysis** button in the **Impacted Configuration Items** section of the request. Log in to Universal CMDB if prompted to do so.

   An Impact Analysis Report is generated in Universal CMDB.

2. Add the Impact Analysis Report to the request, using the **Impact Analysis Report** field in the **Impact & Resource Assessment** section of the request.

3. Based on the impact analysis report, make your recommendations in an Impact Assessment Report. Add your report to the request using the **Impact Assessment Report** field in the **Impact & Resource Assessment** section of the request.

The **Launch HP Release Control** button appears if PPM Center is also integrated with HP Release Control or HP Change Control Management, as described in Chapter 7, *Integration of PPM Center with Release Control or Change Control Management,* on page 241.

Attaching Impact Analysis Report for CIs to a Request in PDF format

In addition to viewing Universal CMDB Impact Analysis Report online by clicking the **Launch HP Universal CMDB Impact Analysis** button on the request page, starting from PPM Center version 8.03, you can also attach a Universal CMDB Impact Analysis Report for CIs in PDF format to requests in PPM Center.

This integration solution applies to Universal CMDB version 8.06 only.

New and Modified Settings

To enable this integration, the following settings are modified or introduced:

- **Universal CMDB Impact Analysis** field group**:** This field group is modified to include a new field **Report**. When the field group is enabled for a request type, an **Impact Analysis Report** field for report attachment will be added to any request you create based on the request type.
- **`ksc_download_ucmdb_impactreport`**: A new system special command added for downloading the Universal CMDB Impact Analysis Report.

  The following three optional values are available for advanced configuration purpose. You can append them to the special command, which will offer you the flexibility of setting filters for the report to be generated on the request page.

  - `-CATEGORY "<value>"`
  - `-SEVERITY "<value>"`
  - `-LANG "<value>"`

  If no values are set for the command, the values in `server.conf` will take effect. If no values are found in the `server.conf` file, the following Universal CMDB built-in default values will take effect:

Parameter	Value
Category	`Change`
Severity	`New`
Lang	`en`

  Examples:

  - To invoke the special command directly without any parameters:
    ```
    ksc_download_ucmdb_impactreport
    ```
  - To invoke the special command with parameters:
    ```
    ksc_download_ucmdb_impactreport -CATEGORY "change" -
    SEVERITY "plan" -LANG "fr"
    ```

- To invoke the special command with token parameters:
  `ksc_download_ucmdb_impactreport -CATEGORY "[REQD.P.<token name>]"`

- New `server.conf` parameters

  Table 5-1 lists new parameters that are added to the `server.conf` configuration file to enable the integration.

  The parameter names listed in this table are shortened versions of the actual names, all of which start with the string `com.kintana.core.server`. For example, the full name of the `CMQC_SUPPORT_REQUEST_ID` parameter is `com.kintana.core.server.CMQC_SUPPORT_REQUEST_ID`. To add a parameter to the server.conf file, you must use its full name.

Table 5-1. New server.conf parameters

Parameter Name	Brief Description
IMPACT_ANALYSIS_ REPORT_CATEGORY	Sets default category value for the impact analysis report, for example, `change` or `operation`.
IMPACT_ANALYSIS_ REPORT_SEVERITY	Sets default severity value for the impact analysis report, for example, `MINOR(3)`. For available values, see *Table 5-2*.
IMPACT_ANALYSIS_ REPORT_LANGUAGE	Sets default language code, for example, `fr`. For supported languages and codes, see *Table 5-3*.
ONLINE_IMPACT_ ANALYSIS_REPORT	Enable or disable online impact analysis report. By default, it is enabled.

Table 5-2. Universal CMDB category and severity parameters

Category	Severity	
	ID	Code
Change	0	NO CHANGE
	1	PLAN
	2	NEW
	3	CANCEL

Category	Severity	
	ID	Code
Operation	0	NORMAL
	1	WARNING(1)
	2	WARNING(2)
	3	MINOR(3)
	4	MINOR(4)
	5	MINOR(5)
	6	MINOR(6)
	7	MAJOR(7)
	8	MAJOR(8)
	9	CRITICAL

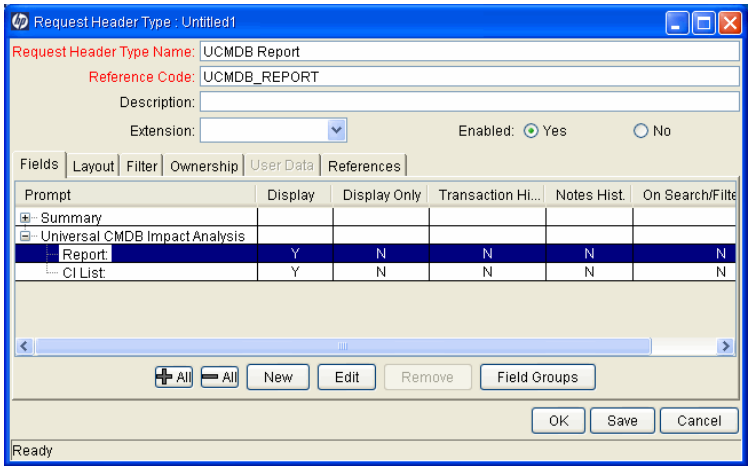
Table 5-3. Languages supported for the Impact Analysis Report

Description	Code
GERMAN	de
ENGLISH	en
SPANISH	es
FRENCH	fr
ITALIAN	it
JAPANESE	ja
KOREAN	ko
BRAZILIAN PORTUGUESE	pt
RUSSIAN	ru
SIMPLIFIED CHINESE	zh

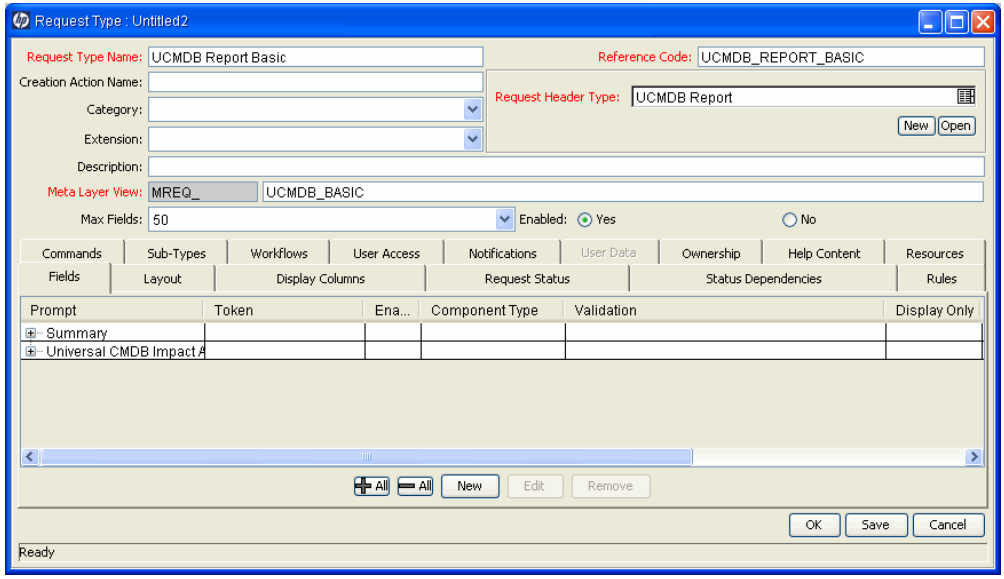
Basic Configuration Example

For a basic configuration, default values will be used.

1. In PPM Workbench, create a new request header type by going to **Demand Mgmt > Request Header Type > New Request Header Type**. Enable **Universal CMDB Impact Analysis** field group, and set **Display** attribute for both **Report** and **CI List** fields to **Yes**.



2. Create a new request type using the request header type you just created.

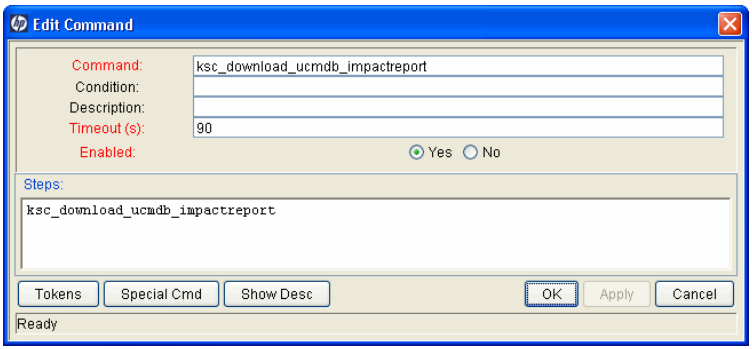


3. Create a workflow execution step that invokes the special command for downloading Universal CMDB Impact Analysis Report: `ksc_download_ucmdb_impactreport`.

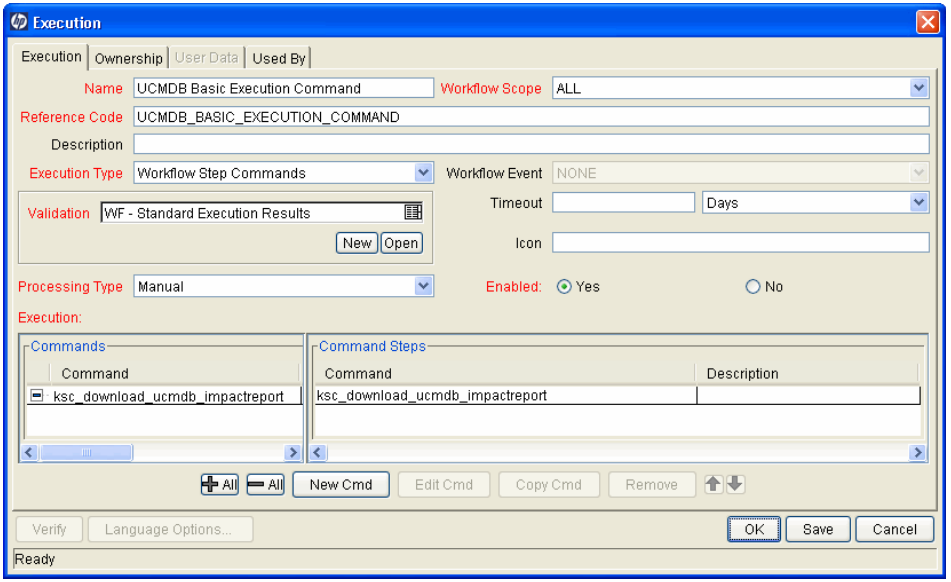
   a. In PPM Workbench, click **Configuration > Workflows**.

   b. In the Workflow Step Sources window, under Workflow Step Sources, select **Executions**, and click **New**. The Execution window opens.

   c. Provide a name for the execution step, select **Workflow Step Commands** for **Execution Type** field, and click **New Cmd**. In the New Command window, enter the new system special command, and click **OK**.



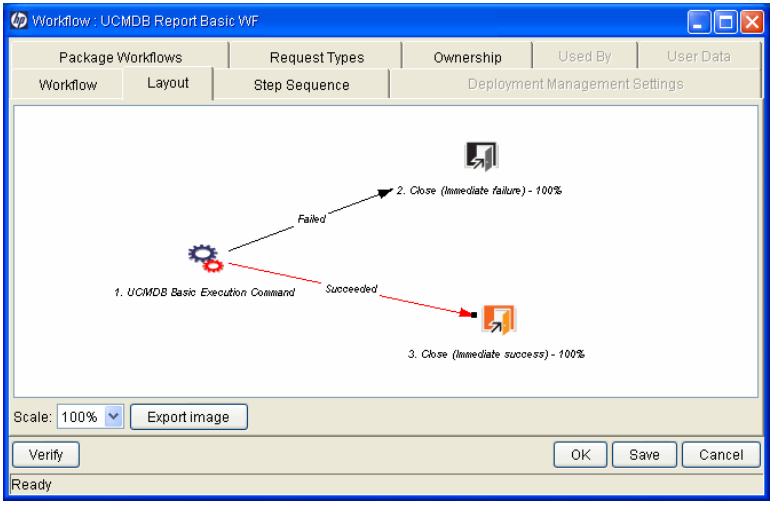
   d. Save the Execution step.



4. Create a new workflow.

   a. In the Workflow Workbench window, click **New Workflow**. In the Workflow window that opens, provide a name, and select **Requests** for the **Workflow Scope** field, and select **Yes** for **Enabled**.

   b. Go to **Layout** tab, drag the workflow execution step you just created to the Layout window, set **Security,** configure the transitions.

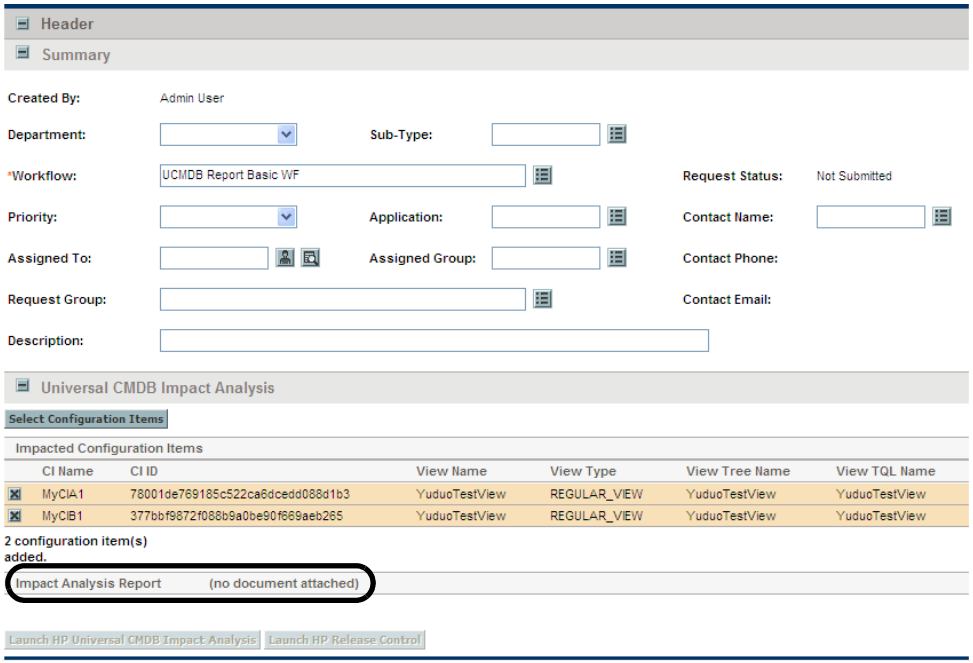


   c. Save the workflow.

5. In PPM Center, create a Universal CMDB request based on the request type you created in step 2 on page 156.

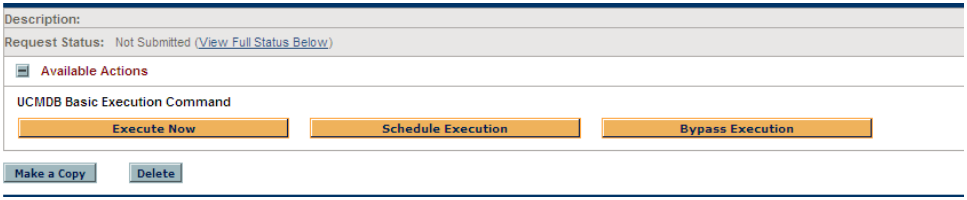
   a. For **Workflow** field, select the workflow you created earlier.

   b. Under Universal CMDB Impact Analysis section, click **Select Configuration Items** and add CIs for which you need to generate a report.

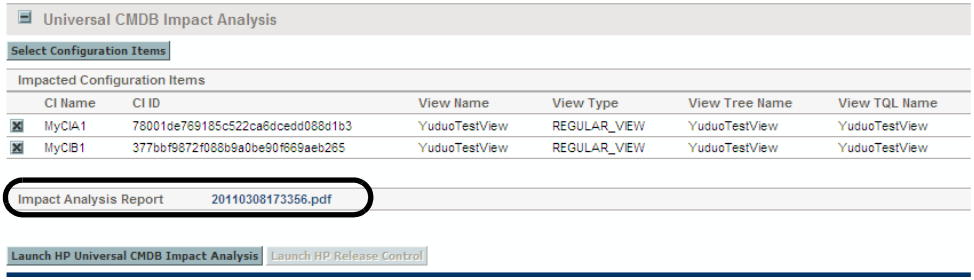


c. Provide values for other fields as necessary and submit the request.

6. Open the request and click **Execute Now** to execute the command.



7. The Impact Analysis Report is attached to the request in PDF format, with automatically generated file name of `<YYYYMMDDHHMMSS>.pdf`.



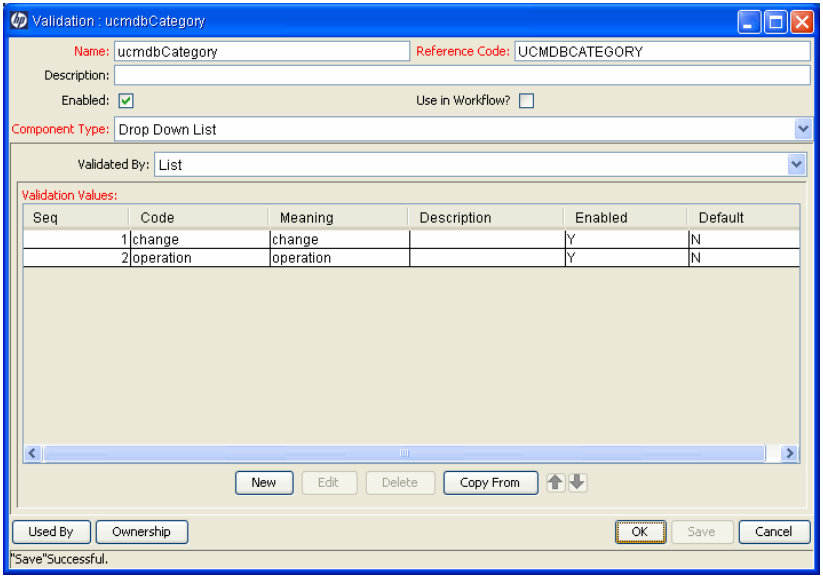
8. You may click the PDF report link to view the report.

Advanced Configuration Example

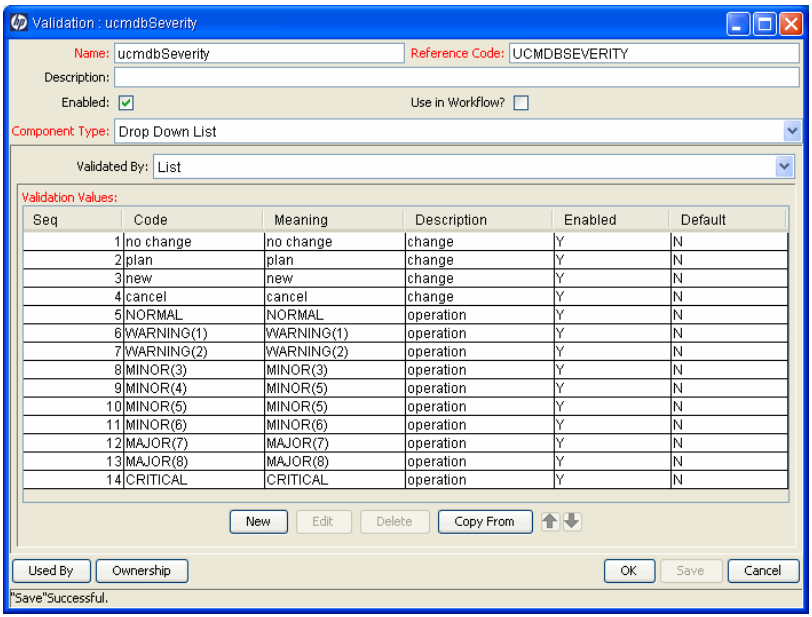
You can choose to pass optional `category`, `severity`, and `language` parameters for Universal CMDB Impact Analysis Report to the system special command. You can also pass them by token.

1. Create new validations for request type field options.

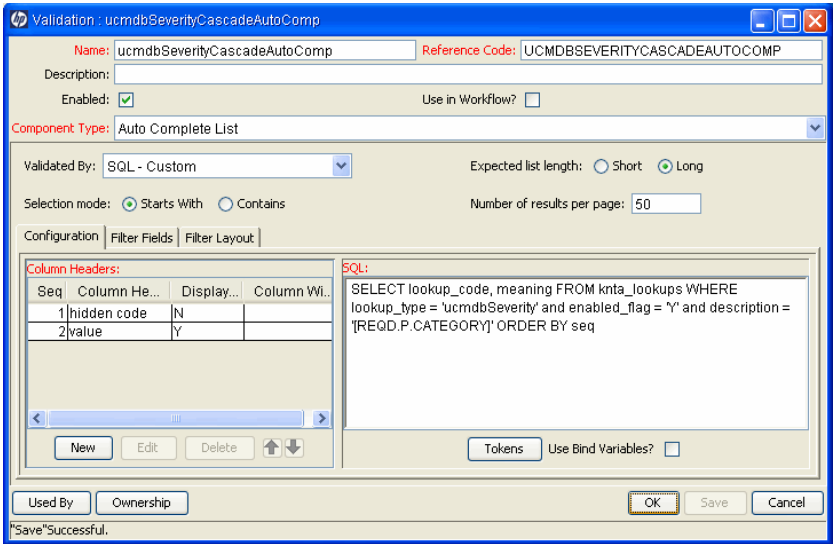
   a. Category



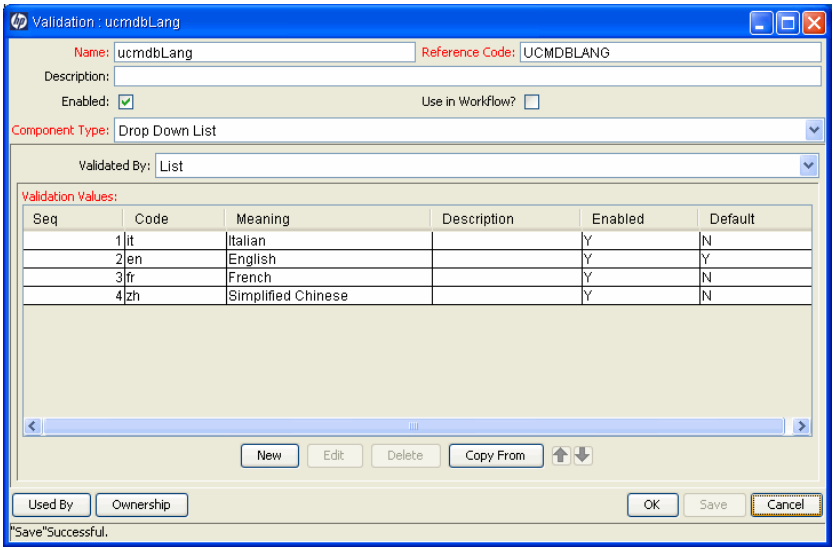
b. Severity



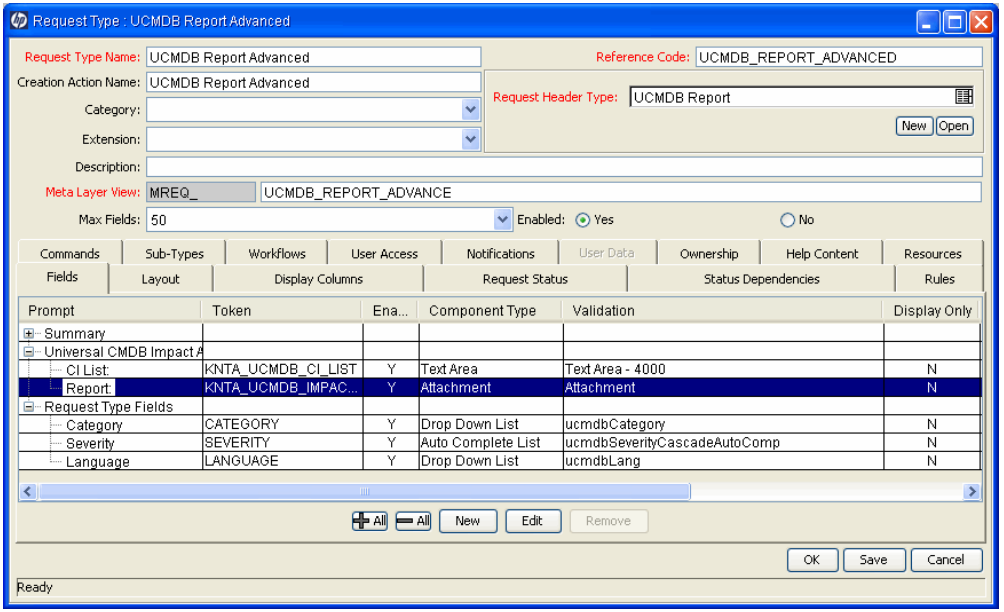
(Optional) You can create an auto-complete list to implement severity cascade on the basis of the above ***ucmdbSeverity*** validation.



c. Language

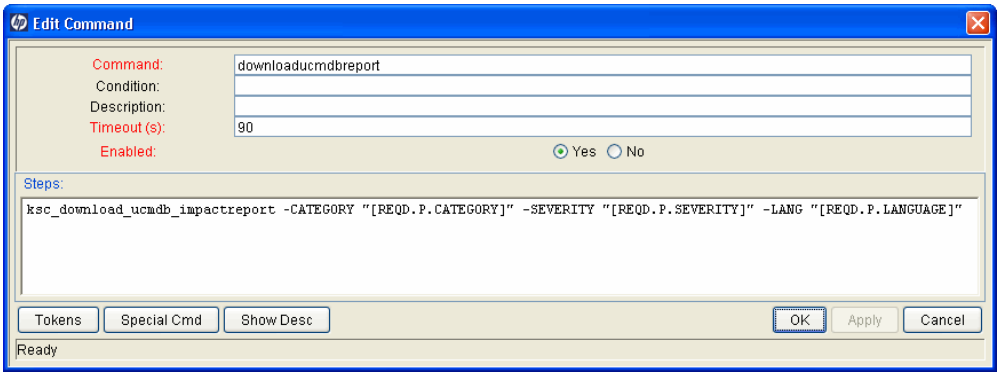


2. Create a Universal CMDB request type, with three request type fields for Category, Severity, and Language.



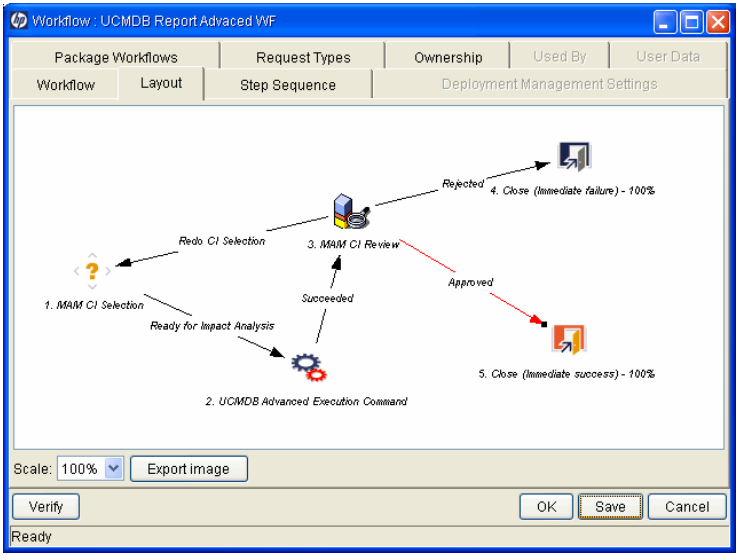
3. Create a workflow execution step that invokes the special command for downloading Universal CMDB Impact Analysis Report with advanced options:

```
ksc_download_ucmdb_impactreport -CATEGORY
"[REQD.P.CATEGORY]" -SEVERITY "[REQD.P.SEVERITY]" -LANG
"[REQD.P.LANGUAGE]"
```

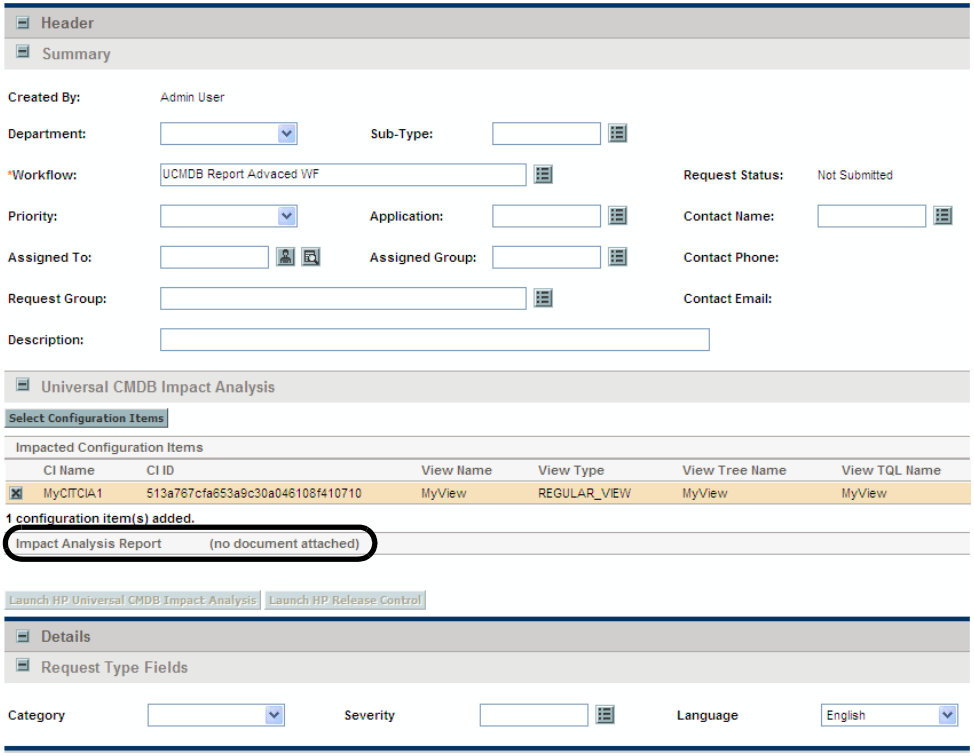


Enter the command manually. Copying and pasting the command may introduce unwanted characters, which may result in potential execution error.

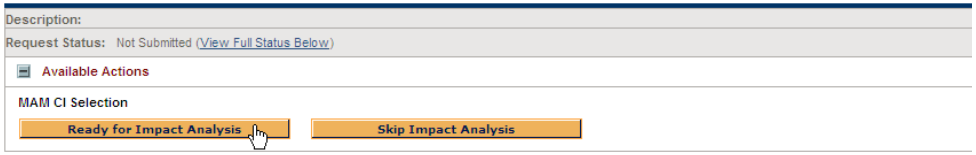
4. Create a workflow with the above workflow execution step, configure the workflow transitions, and save the workflow.



5. In PPM Center, create a Universal CMDB request using the request type you just created. For **Workflow** field, select the one you created earlier. Select configuration items in order to generate an impact analysis report, and submit the request.

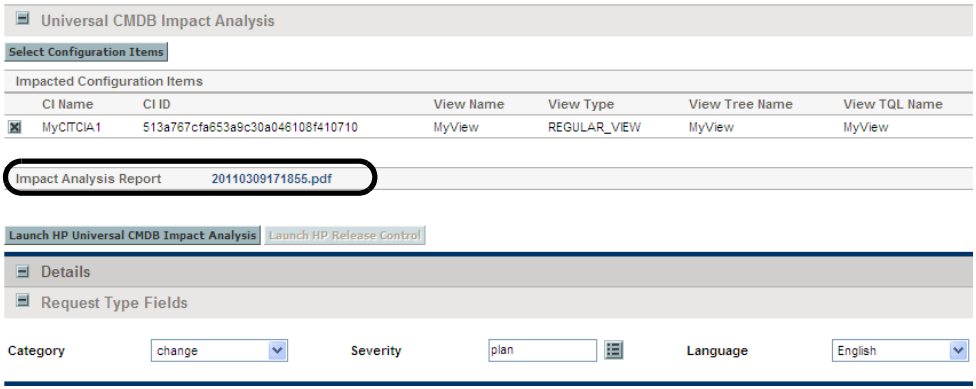


6. Open the request, execute the first workflow execution step.



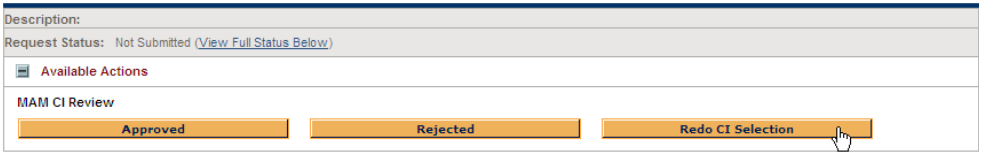
7. Go to the Request Type Fields section of the request, set desired values for **Category**, **Severity**, and **Language** fields as filters for the report to be generated, then click **Execute Now** to execute the second workflow execution step.

8. The impact analysis report is attached to **Impact Analysis Report** field, with automatically generated file name of `<YYYYMMDDHHMMSS>.pdf`.



9. You may click the PDF file link to view the report.

10. (Optional) To generate a report for more CIs, you can click the **Redo CI Selection** workflow step in the Available Actions section to run the workflow again.



6 Integration of PPM Center with Quality Center

Introduction to Integration of PPM Center with Quality Center

Integrating PPM Center with Quality Center enables you to create Quality Center requirements and defects while using PPM Center. This allows users of both applications to participate in the processing of defects, change requests, and release requests.

In PPM Center, a request type is a template, and when you create a request, you must select a request type. With integration, creating the request also automatically creates a defect or requirement in the Quality Center project to which the PPM Center request type is mapped as part of configuring the integration. For example, a PPM Center request of type Defect could create a defect in Quality Center project A, whereas a PPM Center request of type RequestForChange could create a requirement in Quality Center project B.

When an IT manager or business liaison enters a change request or creates a release comprising a group of change requests in PPM Center, PPM Center–Quality Center integration causes a requirement to be created in Quality Center. This informs QA personnel that they should begin the QA process.

PPM Center–Quality Center integration allows ongoing synchronization between fields such as status fields that have been mapped in a request for change in PPM Center and the corresponding defect or requirement in Quality Center.

Upon completion of the QA process, the IT manager or business liaison is notified via the PPM Dashboard and can complete the deployment process.

A software tool with wizards is provided to simplify the integration process, including mapping fields in PPM Center requests to fields in Quality Center projects.

One PPM Server can work with multiple Quality Center projects, even projects on multiple Quality Center servers.

For more information about the benefits of this integration, see *Integration of PPM Center with HP Quality Center* on page 20 and *Benefits and Functionality of the Integration*.

For information about versions supported for integration, see the *System Requirements and Compatibility Matrix.*

No software needs to be installed on the Quality Center server to integrate PPM Center and Quality Center. However, see the *System Requirements and Compatibility Matrix.*

For references to more information about HP Quality Center, see *HP Quality Center Documentation* on page 23.

Benefits and Functionality of the Integration

Integrating PPM Center and Quality Center provides the following benefits to users of each application:

- **Data sharing.** The integration allows data sharing between PPM Center and Quality Center. Business managers and IT personnel using PPM Center gain visibility into how a project is affected by both the quality control process and the parameters that are collected in Quality Center. They can use Quality Center capabilities when creating requests for changes.
- **Inclusion of Quality Center data in the workflow.** The PPM Center workflow is a well-defined process that allows IT managers to plan, track, and deploy software enhancements. Integration allows you to build your own workflows and steps in PPM Center while using fields and data from Quality Center. The Quality Center defect resolution capabilities become part of the workflow. This makes the quality process an integral and formal part of the IT processes.

- **QA-dependent workflow progression.** Progress from one step in the workflow to the next can be made dependent on progress by the QA team. PPM Center shows the IT manager how a project is affected by the quality defects that are collected in Quality Center. The IT manager can view the information from Quality Center and decide whether a defect has been resolved or an enhancement can be deployed. Drill-down capabilities between PPM Center and Quality Center provide more detailed data than each application provides separately.

- **Direct activation of processes, and creation of Quality Center requirements and defects from PPM Center.** Processes can be activated by PPM Center—creating a request in PPM Center also creates a defect or requirement in Quality Center when the relevant step in the PPM Center workflow is activated. When you create a new request in PPM Center of a type that is synchronized with Quality Center, you can select the Quality Center server on which a corresponding requirement or defect gets created.

- **Synchronization of mapped field values between PPM Center and Quality Center.** When fields are mapped between a PPM Center request type and a Quality Center defect or requirement, changing the value of a mapped field in one application can automatically change the value of the corresponding field in the other application. For example, when you change a status of a defect to **Fixed** in PPM Center, one of the provided execution steps changes the status in the corresponding Quality Center project to **Fixed.**

  Users can specify that one of the following occurs for a pair of mapped fields:

  - Changing the field in Quality Center automatically changes the field in PPM Center to the same value, that is, Quality Center is dominant for the mapped pair.

  - Changing the field in PPM Center automatically changes the field in Quality Center to the same value, that is, PPM Center is dominant for the mapped pair.

  - Changing the field in either application automatically changes the field in the other application, that is, the mapping is bidirectional.

Synchronization of defects enables the following:

- Developers can use PPM Center to manage the defect-fixing process, while QA personnel continue to use Quality Center.
- Project managers and IT managers can view all the defects in the system, whether the defects originated in PPM Center or in Quality Center. This helps the managers to decide on content for the next release or new requirements and enhancements.
- QA personnel can use Quality Center to manage defects created through PPM Center.

- **Request hierarchy synchronization.** The hierarchical structure of requirements in Quality Center can be synchronized with the structure of the corresponding requests in PPM Center.
- **Synchronization of the PPM Center Notes field.** The integration allows you to synchronize the PPM Center **Notes to be added on save** field with a field in Quality Center. When you update the content of the field in a PPM Center request, the corresponding field is updated in Quality Center.

ALM - Defect Template with Quality Center Integration Request Type

The PPM Center request type provided for the Quality Center integration is the ALM - Defect Template with Quality Center Integration request type. This request type uses only the ALM - Defect Template with Quality Center Integration workflow, and you cannot choose a different workflow. This prevents you from inadvertently using a workflow that is not enabled for integration.

The integration also uses the general purpose ALM - Release Management request type (see *ALM - Release Management Request Type* on page 70).

Although you can create new request types from scratch, HP recommends that you use the provided request type as a template to create them. In the PPM Workbench, you can copy the provided request type and modify the copy. If you create your own request types to integrate PPM Center and Quality Center, make sure you use workflows that are enabled for integration.

You can also create a new request type with a customized request header type.

Figure 6-1 shows the Create New ALM - Defect Template with Quality Center Integration page that appears when you create a request and select the

ALM - Defect Template with Quality Center Integration request type. *Table 6-1* describes the fields in the Defect Template with Quality Center Integration request, including some fields that do not appear until the request is created or until other conditions are met.

Figure 6-1. ALM - Defect Template with Quality Center Integration request

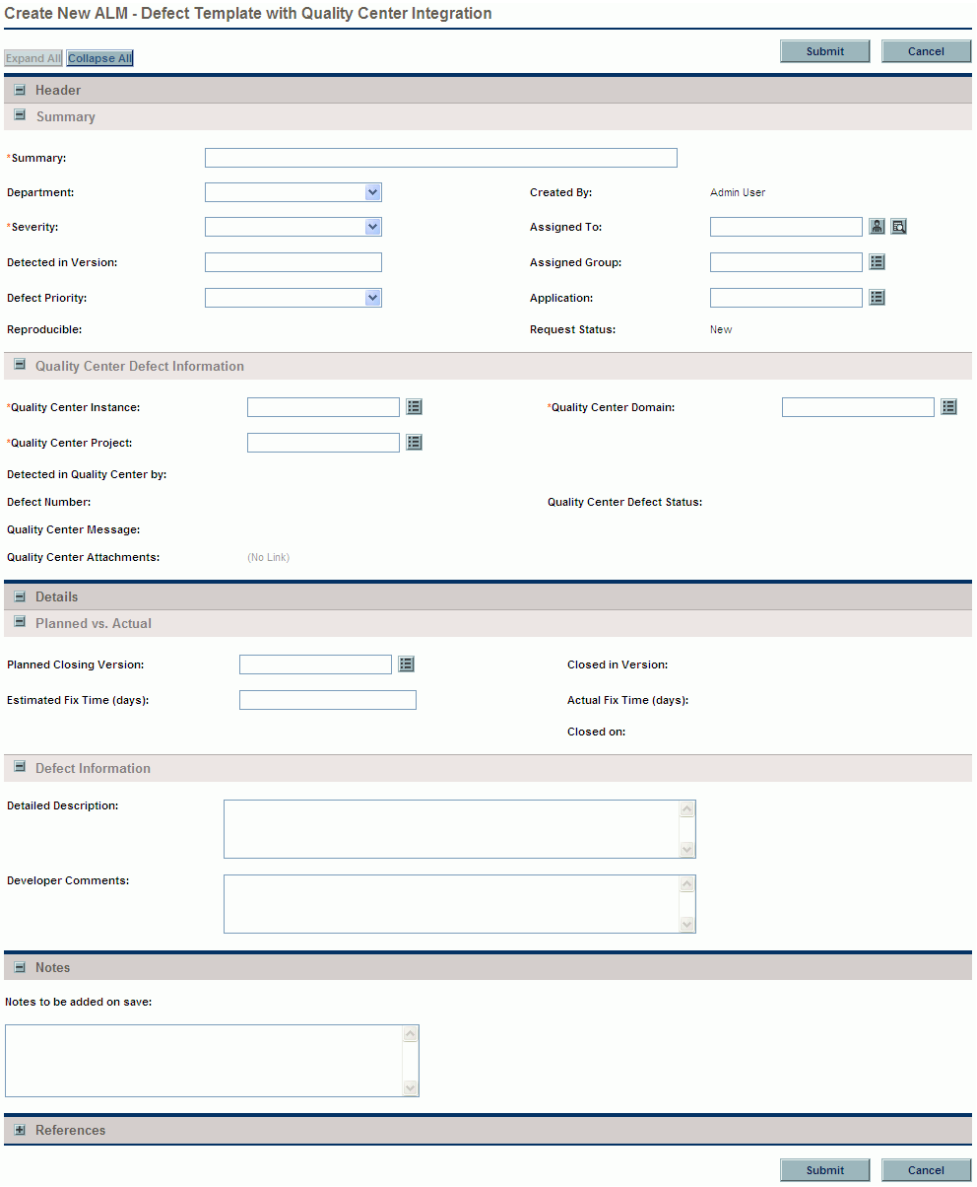


Table 6-1. ALM - Defect Template with Quality Center Integration request fields (page 1 of 2)

Field Name (*Required)	Description
Summary section	
Request No.	(Added after the request is created) Number of the request
Created On	(Added after the request is created) Date the request was created
*Summary	Summary description of the request
Department	Department to which the user belongs
Created By	User who created the request
*Severity	Severity of the defect
Assigned To	Developer assigned to work on the defect
Detected in Version	Version of the application in which the defect was detected
Assigned Group	Group responsible for addressing the defect
Defect Priority	Priority of the defect
Application	Application in which the defect was discovered
Reproducible	Option to indicate whether the defect is reproducible
Request Status	Status of the request
Quality Center Defect Information section [a]	
*Quality Center Instance	Quality Center instance that will receive the new PPM Center request
*Quality Center Domain	Quality Center domain of the working project
*Quality Center Project	Quality Center project that is linked with this request type
Detected in Quality Center by	User in Quality Center who detected the defect

Table 6-1. ALM - Defect Template with Quality Center Integration request fields (page 2 of 2)

Field Name (*Required)	Description
Defect Number	(Added after the defect is created in Quality Center) Defect number in Quality Center
Quality Center Defect Status	(Added after the defect is created in Quality Center) Status of the defect in Quality Center
Quality Center Message	(Read-only. Added after the defect is created in Quality Center.) Message indicating whether the last update to the request was successfully synchronized in the Quality Center defect, or an error message if synchronization failed
Quality Center Attachments	URL of the attached requirement document
Planned vs. Actual section	
Planned Closing Version	Version of the application targeted to have the defect fix
Closed in Version	Version of the application that has the defect fix
Estimated Fix Time (days)	Original estimate of the number of days it would take to fix the defect
Actual Fix Time (days)	Actual number of days it took to fix the defect
Closed on	Date the defect was closed in Quality Center
Defect Information section	
Detailed Description	Detailed description of the defect
Developer Comments	Developer comments regarding the defect

a. Fields in the Quality Center Defect Information section remain visible by default but are not used if PPM Center is not integrated with HP Quality Center.

The administrator can remove the **Quality Center Defect Information** section from the request type by removing the Quality Center Defect Information field group from the ALM - Defect Template with Quality Center Integration request header type.

See the *HP Demand Management Configuration Guide* for details about request header types and field groups.

To submit an ALM - Defect Template with Quality Center Integration request:

1. Log on to PPM Center.
2. From the menu bar, select **Create > Request.**

   The Create New Request page appears.
3. On the Create New Request page, in the **Request Type** field, select **ALM - Defect Template with Quality Center Integration** and click **Create.**

   The Create New ALM - Defect Template with Quality Center Integration page appears, displaying the appropriate release request fields.

   Required fields have a red asterisk. All other fields are optional, but are often helpful when others are reviewing an open request. For information concerning a specific field, click the **Help** icon next to the field (if available).
4. Complete the fields in all sections as appropriate.

   The **Notes** section contains fields where notes and information concerning the request can be entered and stored. Typically, when you create a request, you do not need to add a note to it. However, add a note if you want to convey additional information to the reviewers and processors of the request.

   In the **References** section of the request, you can add useful references such as a Web-accessible file or a document or file attached from a local machine. For more information about adding references, see the *HP Demand Management User's Guide.*
5. On the Create New Request page, click **Submit.**

   The request is submitted. The Request Creation Confirmed page appears.

PPM Center can be configured to allow you to save the request before you submit it. To have this feature enabled, see your application administrator.

After submitting the request, on the Request Creation Confirmed page you can click the link for the particular request number in the **Request #** field to view the detail page of the newly generated request.

When the request is submitted, it is assigned an initial status, such as New. The request is then routed along the ALM - Defect Template with Quality Center Integration workflow (see *ALM - Defect Template with Quality Center Integration Workflow* on page 176).

Request Header Types

By default, when you create a new request type from a provided one, the new request type uses the same request header type as the provided request type uses.

When creating a new request type, you can do the following:

- Use the supplied request header type as is.
- Copy the request header type, customize the copy, and use the customized copy in the new request type.
- Create a completely new request header type.

Your request header type must include the Quality Center fields that appear in the provided request header type. If you customize a request header type, make sure you do not delete the Quality Center fields.

If you create a new request header type, add the required integration fields by selecting the appropriate field group, as follows:

1. Log on to PPM Center.
2. From the menu bar, select **Open > Administration > Open Workbench.**

   The PPM Workbench opens.
3. From the shortcut bar, select **Demand Mgmt > Request Header Types.**

   The Request Header Type Workbench opens.
4. In the Request Header Type Workbench, click **New Request Header Type.**

   The Request Header Type window opens.
5. Click **Field Groups.**

   The Field Groups window lists the available field groups.

6. To select the appropriate field group:

   - For a defect header, select the **Quality Center Defect Information** field group.
   - For a request for change header, select the **Quality Center Info** field group.

ALM - Defect Template with Quality Center Integration Workflow

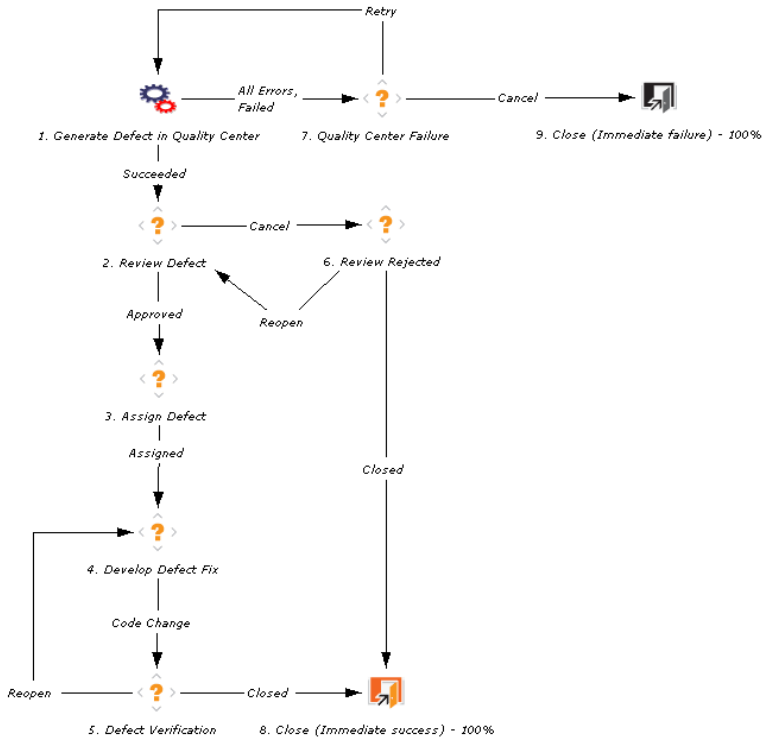
For integration of PPM Center with Quality Center, ALM provides the ALM - Defect Template with Quality Center Integration workflow, which includes execution steps to create a defect or requirement in Quality Center. You can use this workflow as a template for creating your own workflows.

Although you can create new workflows from scratch, HP recommends that you create them from this template. To create a new workflow, you use the PPM Workbench to create a copy of a provided workflow, and then modify the copy (add, delete, or change its steps) to suit your needs.

The integration also uses the general purpose ALM - Release Request workflow to create a release entity that includes several requests for change. This workflow can be used for ITIL purposes whether or not PPM Center is integrated with other applications. For more information, see *ALM - Release Request Workflow* on page 76.

The ALM - Defect Template with Quality Center Integration workflow is used to create a defect and to track how the defect is resolved. See *Figure 6-2* and workflow step 5, Defect Verification.

Figure 6-2. ALM - Defect Template with Quality Center Integration workflow



When a request of type ALM - Defect Template with Quality Center Integration is created in PPM Center, the first step in the workflow creates a defect in Quality Center. Subsequent steps cause the defect status in Quality Center to change to Open, Reopen, Fixed or Closed, depending on the stage in the PPM Center workflow.

Types of Workflow Steps

As with any PPM Center workflow, the ALM - Defect Template with Quality Center Integration workflow can contain the following types of steps:

- **Decision steps.** Steps that require action from the user in order to proceed. When the user reaches the decision step, the user sees a set of choices. Each choice causes the workflow to proceed in a different manner. For example, at one decision step in a workflow, a project manager might be offered the choice of either deploying a package or sending it back to QA for more testing.

- **Condition steps.** Steps that determine the direction that the workflow takes.
- **Execution steps.** Steps that are automated through PPM Center. For example, an execution step might create a requirement or defect in Quality Center, execute a script, or run a build.

ALM provides two execution steps that can be used in PPM Center to build a workflow for integration of PPM Center with Quality Center. The execution steps create a defect or a requirement in Quality Center.

PPM Center-Quality Center Integration Tool

Integration requires installing the PPM Center-Quality Center Integration Tool on any Windows machine that can open HTTP connections to the PPM Server and to the Quality Center server. This tool enables Quality Center projects for integration and maps PPM Center fields to Quality Center fields.

When the user enables a Quality Center project for integration using the PPM Center-Quality Center Integration Tool, the tool performs one of the following actions:

- If the project is new, the tool creates Quality Center lists and adds Quality Center workflow scripts to the user's existing scripts.
- If the project already exists, the tool updates some of the Quality Center lists so that those lists contain the same values as they would for a new project.

The lists and Quality Center scripts create a Quality Center project that can work as is with the provided PPM Center components.

As described in the following sections, the integration tool changes the value lists and workflow enforcement in a Quality Center project to enable the project for integration.

Changes to Value Lists

For a new project, the integration tool adds two new value lists and adds a new value to an existing default value list, as follows:

- New Requirement Status list, with the following values:
  - New
  - Cancelled
  - Closed
  - 1-Requirements Setup Completed
  - 2-Test Plan Setup Completed
  - 3-Test Lab Setup Completed
  - 4-Running Tests in Quality Center
  - 5-Test Execution Completed
  - 6-Running Sanity Tests in Quality Center
  - 7-Sanity Testing Completed
- New Test Level list, with the following values:
  - Functional
  - Integration
  - Regression
  - Sanity
- New value of Deleted for the existing Bug Status list

For an existing project, these lists are updated or added as necessary to contain the same values as they would for a new project.

Workflow Enforcement

The PPM Center-Quality Center Integration Tool will update the Quality Center project workflow to enforce the following constraints on Quality Center entities:

- **Defect.** The user can make only the following status changes:
  - Fixed to Closed
  - Rejected to Closed
  - Fixed to Reopen
- **Requirement.** The user can make only the following status changes:
  - New to 1-Requirements Setup Completed
  - 1-Requirements Setup Completed to 2-Test Plan Setup Completed
  - 2-Test Plan Setup Completed to 3-Test Lab Setup Completed
  - 4-Running Tests in Quality Center to 5-Test Execution Completed
  - 6-Running Sanity Tests in Quality Center to 7-Sanity Testing Completed

Overview of Installation and Configuration Process

The procedures for configuring PPM Center and Quality Center for integration are described in detail in the following sections, and are summarized as follows:

- If an earlier version of the PPM Center-Quality Center Integration Tool was installed, uninstall it.
- Install the PPM Center-Quality Center Integration Tool. This tool enables a Quality Center project for integration and maps PPM Center fields to Quality Center fields in an XML mapping.

- Configure integration of a Quality Center project as follows:
  - Use the PPM Center-Quality Center Integration Tool to enable a Quality Center project for integration.
  - Use the PPM Center-Quality Center Integration Tool to create a mapping between PPM Center fields and Quality Center fields.
  - Map the Notes field in an existing project.
  - Use the PPM Center-Quality Center Integration Tool to deploy the mapping to PPM Center and Quality Center.
  - Configure a new project if you want to integrate both existing and new defects in a Quality Center project.
- Configure PPM Center for integration, including specifying `server.conf` parameters.
- As necessary, use the request type and workflow provided as templates in ALM to create your own PPM Center request types and workflows enabled for integration of PPM Center with Quality Center.
- Configure request hierarchy synchronization, if desired.

Installing the PPM Center-Quality Center Integration Tool

Integration requires installing the PPM Center-Quality Center Integration Tool on a Windows machine that can open HTTP connections to the PPM Server and to the Quality Center server.

To install this tool:

1. If an earlier version of the PPM Center-Quality Center Integration Tool was installed, uninstall it. See *Uninstalling the Integration Tool*.

2. Copy the PPM Center-Quality Center Integration Tool `setup.exe` file to a Windows machine that can open HTTP connections to the PPM Server and to the Quality Center server. This file is located in the PPM Server at:

   `<PPM_Home>/integration/mac/ppmqcintegrationtool`

   where `<PPM_Home>` represents the path where your PPM Center instance is installed. For example: `xyzserver/E/PPMServer`.

3. Double-click the `setup.exe` file to launch the InstallShield wizard.

   By default, the tool gets installed in the `C:/Program Files/Hewlett-Packard/PPM Center-Quality Center Integration Tool` directory.

4. Follow the instructions in the wizard. When the installation completes, do not launch the PPM Center-Quality Center Integration Tool yet.

Proceed to *Configuring a Quality Center Project for the Integration* on page 183.

Uninstalling the Integration Tool

If you want to uninstall the PPM Center-Quality Center Integration Tool (for example, to be able to run the tool from another Windows machine only), select **Start > Settings > Control Panel > Add/Remove Programs** and follow the instructions on the screen.

You use the tool to create an initial mapping between PPM Center fields and Quality Center fields (or to revise an existing mapping). Unless you need to install a later version of the tool, before you uninstall the tool, remember to use it to deploy the mapping to both PPM Center and Quality Center simultaneously.

Configuring a Quality Center Project for the Integration

Before beginning this configuration, verify that Web services are enabled for use with PPM Center, as follows:

For more information about the steps in this procedure, see the *Installation and Administration Guide*.

1. Stop the PPM Server.
2. Run the following script:

   ```
   sh ./kConfig.sh
   ```

3. Verify that the `ENABLE_WEB_SERVICES` parameter in the PPM Center `server.conf` configuration file is set to `true`.
4. Restart the PPM Server.

As documented in the following sections, you establish integration of PPM Center with Quality Center independently for each Quality Center project as needed, using wizards in the PPM Center-Quality Center Integration Tool to do the following:

- Enable a Quality Center project for integration
- Create the XML mapping file between PPM Center and Quality Center fields
- Deploy this mapping file to PPM Center and Quality Center

You might also need to manually map the Notes field in a PPM Center request to the Quality Center project.

Enabling a Quality Center Project for the Integration

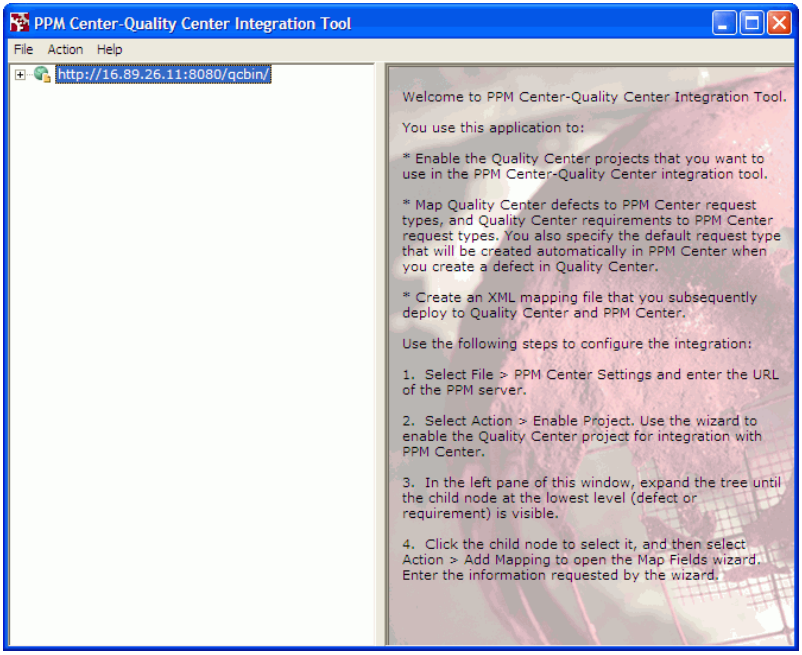
Use the PPM Center-Quality Center Integration Tool to enable a Quality Center project for the integration as described in this section.

HP strongly recommends that you enable a project only once, otherwise problems might occur in the integration. There is no reason to enable a project twice. You can use the integration tool to change the configuration of a project at any time.

To enable a Quality Center project for integration:

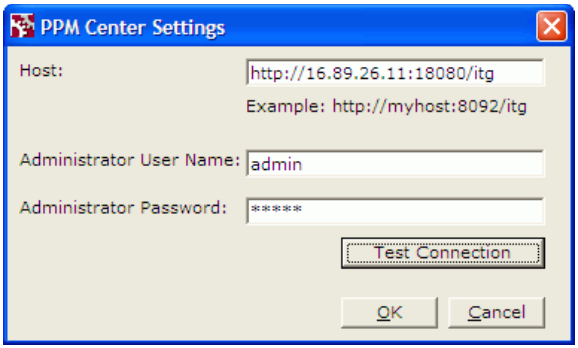
1. From the Windows Start menu, select **All Programs > Hewlett-Packard > PPM Center-Quality Center Integration Tool.**

   The main PPM Center-Quality Center Integration Tool window opens.



2. Select **File > PPM Center Settings.**

   The PPM Center Settings window opens.



3. In the **Host** field, type the URL of the PPM Server.

   If the PPM Server is installed in a WAN, use the IP address for the PPM Server, for example `http://192.60.28.01:8080`, rather than its host name, for example `http://ppmhost:8080`.

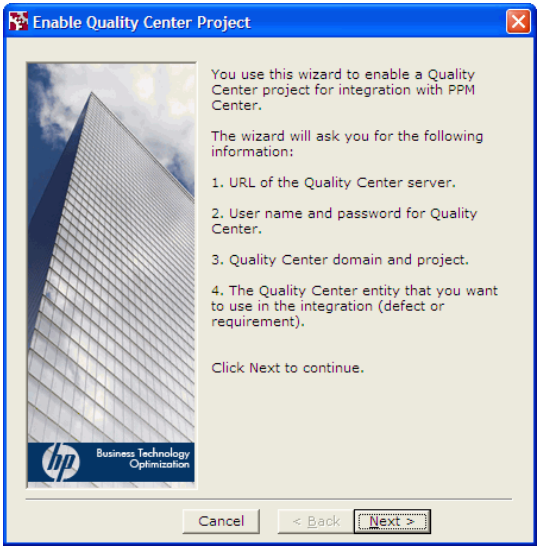
4. In the **Administrator User Name** and **Administrator Password** fields, type the PPM Center user name and password.

5. Click **Test Connection** to test the connection with PPM Center.

6. If a message appears stating that connection was successful, click **OK** to close the PPM Center Settings window, otherwise resolve the connection issue.

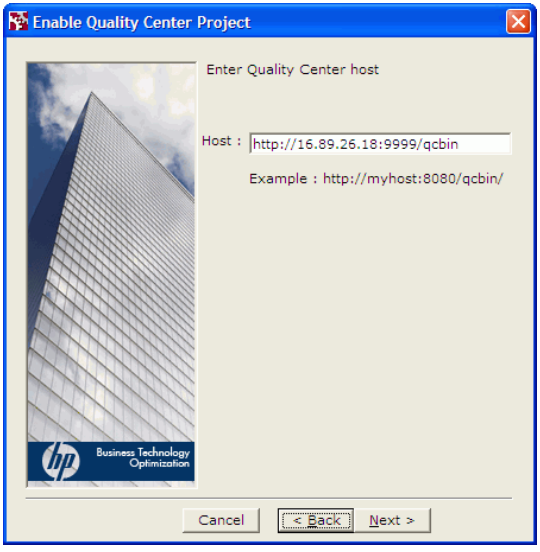
7. In the main PPM Center-Quality Center Integration Tool window, select **Action > Enable Project.**

   The Enable Quality Center Project wizard opens.

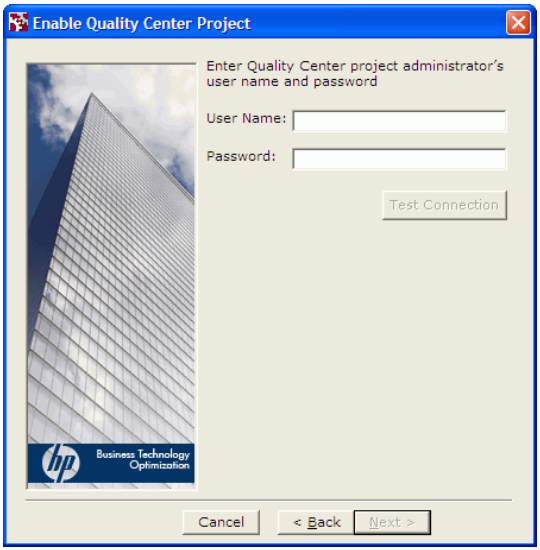


8. Click **Next** to continue.

9. In the **Host** field, type the URL of the Quality Center server.



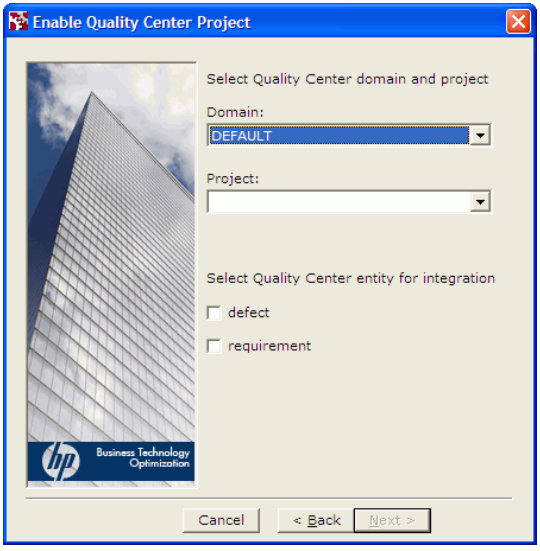
10. Click **Next** to continue.



11. In the **User Name** and **Password** fields, specify the user name and password of the Quality Center project administrator.

12. Click **Test Connection** to test the connection with Quality Center.

13. If a message appears stating that connection was successful, click **OK** on the message, then click **Next.** Otherwise resolve the connection issue.

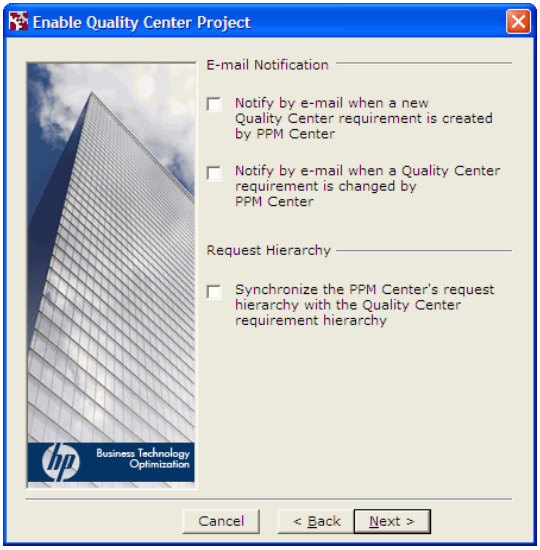


14. Select a Quality Center domain and project, and specify whether you want to map Quality Center defects, requirements, or both.

    If you are enabling defects but not requirements for integration, skip to step 17 on page 189.

15. Click **Next** to continue.

    If you are enabling requirements for integration, the following window appears.



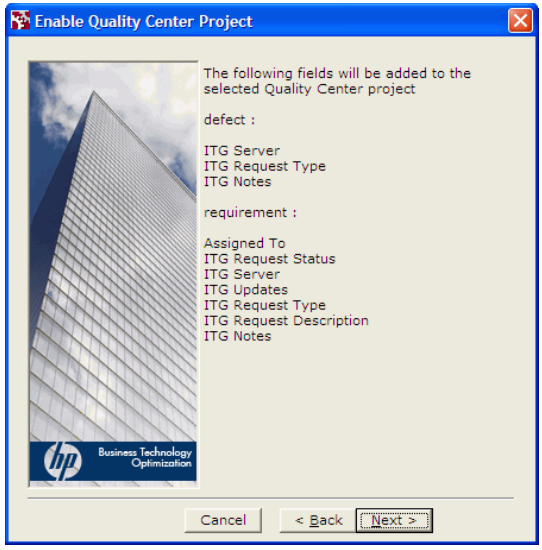
    You can use this window to do the following:

    - Request notification by email when a PPM Center request creates a new Quality Center requirement.
    - Request notification by email when a PPM Center request updates a field in an existing Quality Center requirement.
    - Synchronize the PPM Center request hierarchy with the Quality Center requirement hierarchy. For information about this synchronization, see *Request Hierarchy Synchronization* on page 222.

16. Select the desired checkboxes.

17. Click **Next** to continue.

    The wizard displays the user-defined fields in the PPM Center project that will be added to the Quality Center project to enable mapping the Quality Center fields to PPM Center fields, for defects, requirements, or both, as specified in step 14 on page 188.



Prior to version 7.0, PPM Center was known as Mercury IT Governance Center or ITG. For PPM Center version 8.00, field names in Quality Center and in the integration tool in the context of Quality Center still use ITG when referring to PPM Center.

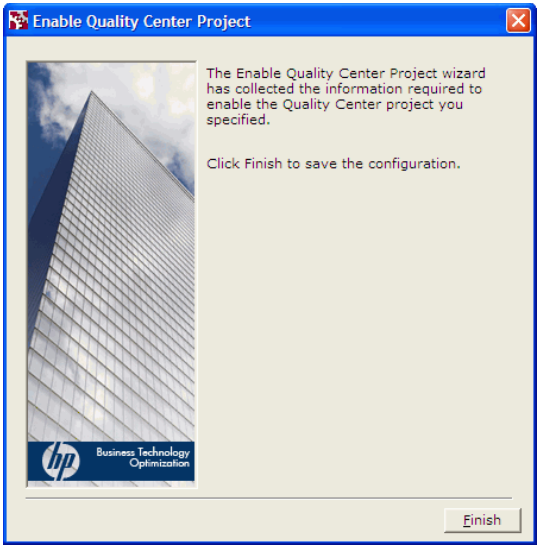
18. Click **Next** to continue.

    The listed fields are added to the Quality Center project, and the Quality Center workflow script is updated to support integration with PPM Center.

If the Quality Center project already contains one or more fields with the same names, a dialog box asks you whether you want to change the names of the added fields. If you select **Yes,** the added fields will be given different names. If you select **No,** the procedure to enable the project for integration is aborted.

If the Quality Center project does not have a workflow script in its repository, a dialog box asks you whether you want to create a new one. If you select **Yes,** a new script with support for the integration is added to the Quality Center repository. If you select **No,** the script file is not created.

If the project is not new and its script files have been previously customized, select **No** and manually merge the customized scripts with the scripts that the wizard adds automatically, which are located in the installation directory of the PPM Center-Quality Center Integration Tool.



19. Click **Finish** to complete enabling the project for integration and close the wizard.

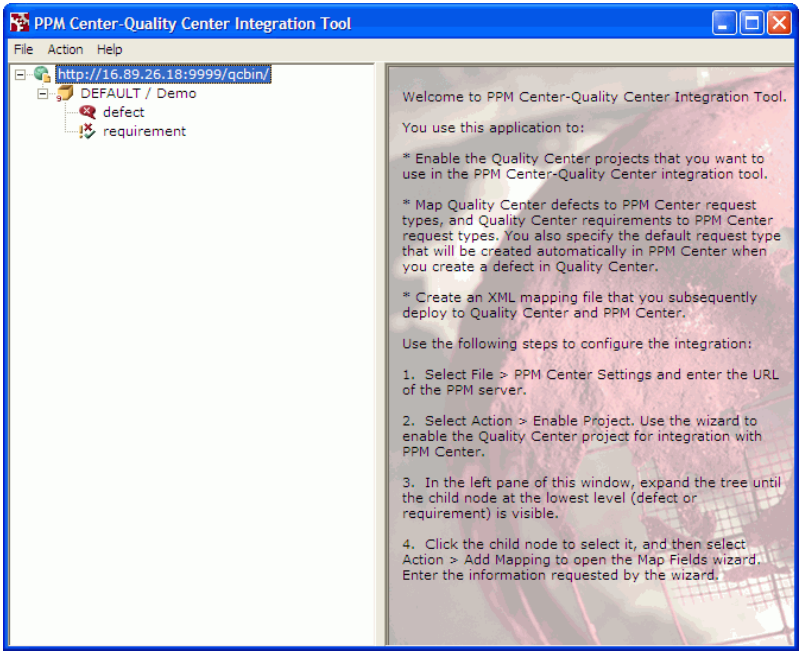
Creating the Mapping Between PPM Center and Quality Center Fields

After you enable a Quality Center project for the integration, you use the PPM Center-Quality Center Integration Tool to map a particular PPM Center request type to a Quality Center defect or requirement and to specify the desired mapping between the PPM Center fields and the Quality Center fields.

For information about the provided default mappings, see *Default Quality Center–PPM Center Field Mappings* on page 231.

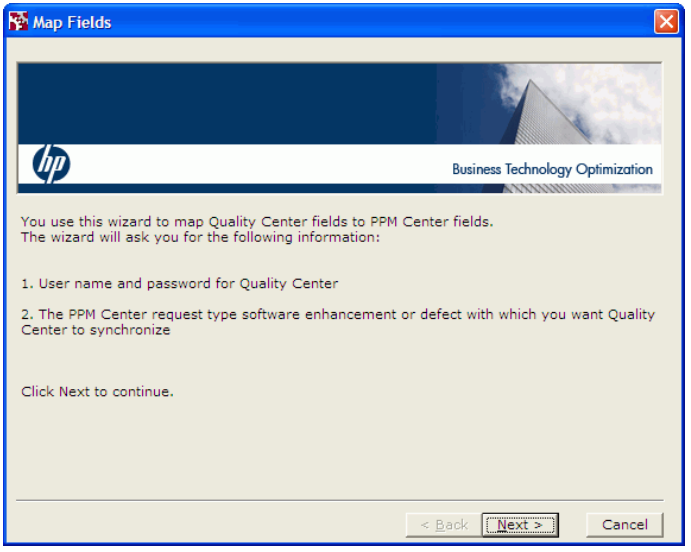
To create the mapping:

1. In the left pane of the PPM Center-Quality Center Integration Tool, expand the tree until the child node at the lowest level (**defect, requirement,** or both) is visible.

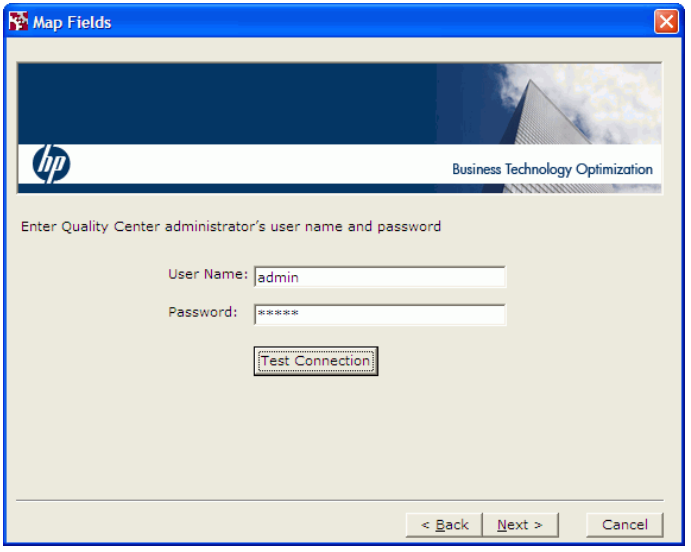


2. Click the child node you want to map and select **Action > Add Mapping** (or right-click the node you want to map and click **Add Mapping**).

   The Map Fields wizard opens.



3. Click **Next** to continue.



4. In the **User Name** and **Password** fields, type the user name and password of the Quality Center administrator.

5. Click **Next** to continue.

   The **PPM Center Request Type** field appears with a drop-down list.

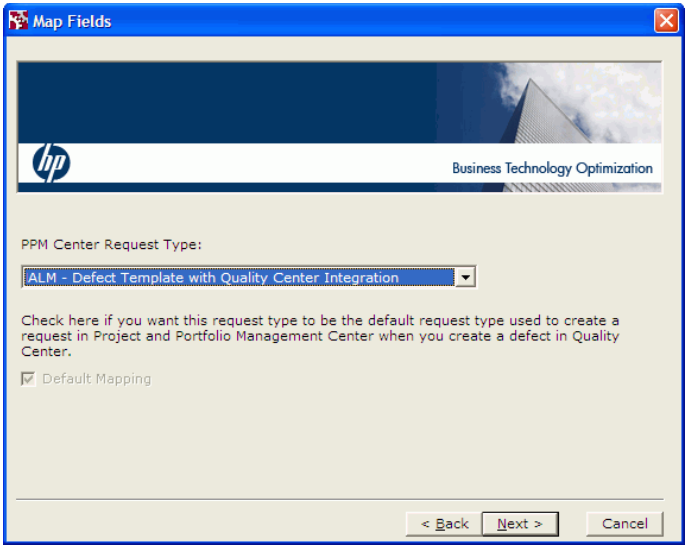
6. Click the arrow of the drop-down list to display a list of all the PPM Center request types that can be mapped to a Quality Center defect or requirement (depending on which you selected in step 2 on page 192).

   As provided by HP, the only PPM Center request type available to map to a Quality Center defect is the ALM - Defect Template with Quality Center Integration request type.

   As provided by HP, the only PPM Center request types available to map to a Quality Center requirement are the following:

   - ALM - Release Management
   - ALM - Request for Change (RFC)

7. Select the request type in PPM Center that is to be mapped to the Quality Center defect or requirement.



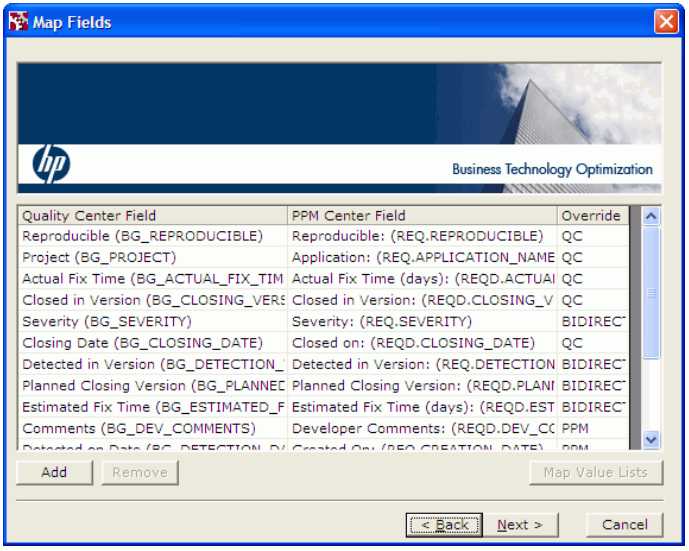
8. If you are mapping the request type to a defect, but not if you are mapping the request type to a requirement, the window includes the **Default Mapping** checkbox.

   If this is the first mapping you are creating from a PPM Center request type to a Quality Center defect for the project, the checkbox is selected and disabled so that you cannot clear the checkbox.

   If this is not the first such mapping, the checkbox is cleared and enabled. Select the checkbox if you want the request type you are now mapping to become the default PPM Center request type for Quality Center defects for the project.

9. Click **Next** to continue.

   From the integration tool, the wizard displays the default mapping between the Quality Center fields and PPM Center fields for the request type you selected. In this Map Fields window, the fields map either a PPM Center request type for defects to a Quality Center defect, or a PPM Center request type for changes to a Quality Center requirement.



   The **Quality Center Field** column displays the DB field name (the name of the column in the database) in parentheses.

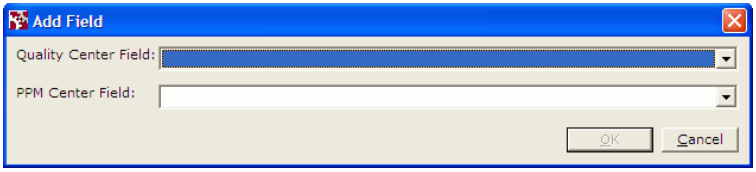
   The **PPM Center Field** column displays the PPM Center token in parentheses.

The **Override** column specifies which field, if any, is the dominant field for a pair. The **Override** column can have one of the following values for any pair of mapped fields (row):

- **QC.** In this case, changing the value of the Quality Center field causes the same change to be applied to the mapped PPM Center field. That is, the Quality Center field is dominant. If the value in the PPM Center field is changed, the value in the Quality Center field is not affected.
- **PPM.** In this case, changing the value of the PPM Center field causes the same change to be applied to the mapped Quality Center field. That is, the PPM Center field is dominant. If the value in the Quality Center field is changed, the value in the PPM Center field is not affected.
- **BIDIRECTIONAL.** In this case, changing the value of the field in either PPM Center or Quality Center causes the same change to be applied to the mapped field in the other application.

10. If you want to change which field, if any, is dominant for a field mapping, click the value in the **Override** column for the field mapping of interest, and select another value from the list that appears.
11. If you want to add a pair of fields to the mapping, do the following:
    a. Click **Add.**

       The Add Field window opens.

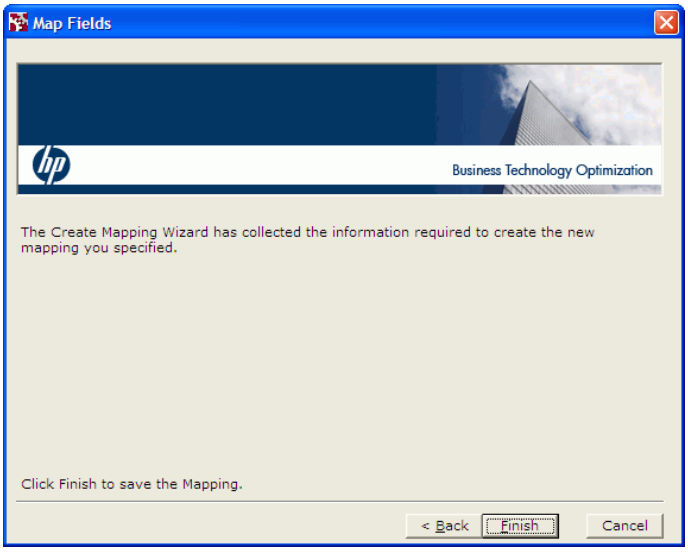


    b. In **Quality Center Field** and **PPM Center Field,** select the fields you want to map to each other.
    c. Click **OK.**

       The pair of fields is added to the mapping and appears in the list.

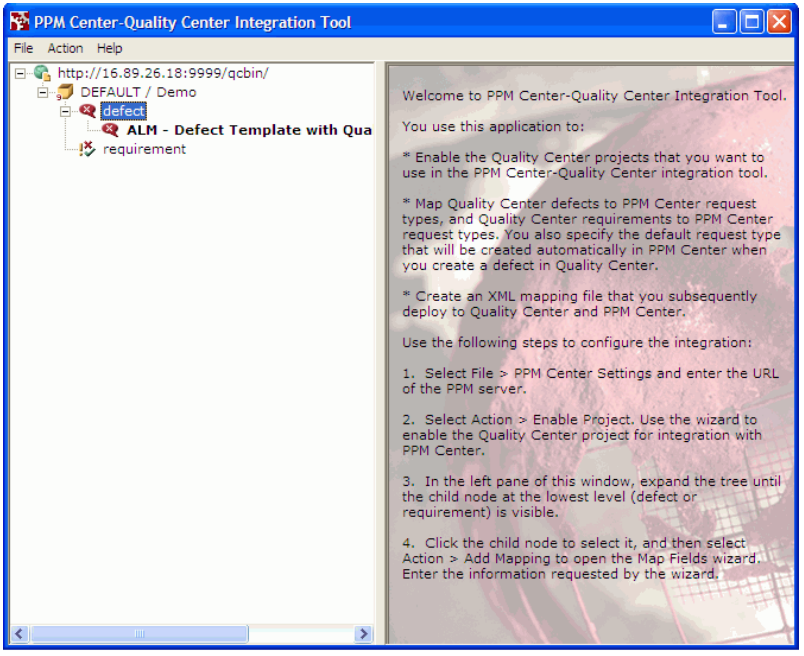
If the mapped fields in a pair have different sets of valid values, you must resolve the differences so that a change to one field can update the other. See *Resolving Lists of Valid Values* on page 198.

12. If you want to remove a pair of fields from the mapping, do the following:
    a. Click a line to select the pair.
    b. Click **Remove.**
    c. When the application asks whether you want to delete the selected line or lines, click **Yes.**
13. Click **Next** to continue.



14. Click **Finish** to save the mapping and close the wizard.

    The new mapping is displayed in the PPM Center-Quality Center Integration Tool. (In the example, expand the **defect** list.)



15. By default, a local copy of the mapping file (`ITGQCIntegration.xml`) is saved in the Windows directory in which you installed the PPM Center-Quality Center Integration Tool. As discussed later, you will use the tool to deploy the mapping file to the PPM Server and the Quality Center server. Then the integration can operate without any dependency on the local Windows machine.

    If you want to save the XML file elsewhere, select **File > Save To** and specify the location.

    If you want to open an XML file stored in another location, click **File > Open.**

16. Click **File > Exit** to close the PPM Center-Quality Center Integration Tool.

Resolving Lists of Valid Values

This section describes how to resolve differences between the sets of valid values for a pair of mapped fields, so that a change to one field correctly updates the other.

To open the mapping file and access the Map Value Lists window:

1. Open the mapping file as described in *Viewing and Changing a Mapping* on page 210.
2. Select the row for the pair of fields of interest and click **Map Value Lists.**

Some field pairs are automatically mapped and their mappings cannot be changed.

The Map Value Lists window opens, displaying the lists of valid values for each field in the pair.

Resolve the differences between the sets of valid values based on which of the following three cases applies.

Case One

If you created a new user-defined field in Quality Center and mapped the field to a PPM Center field that has a list of values, create a new Quality Center list of valid values from the PPM Center list, as follows:

1. Select the **Create a new list in Quality Center...** option in the Map Values List window.
2. In the **List Name** field, specify a name for the list or accept the default.
3. Click **OK.**

   A new Quality Center value list containing the PPM Center values is created and associated with the Quality Center field.

Case Two

If the fields in the pair have different sets of values and some records in the Quality Center project already use the current list values, but from now on you want to use the values that appear in the PPM Center list, add the PPM Center values to the Quality Center list, as follows:

1. Select the **Add the PPM Center values to the existing Quality Center list** option in the Map Values List window.
2. Click **OK.**

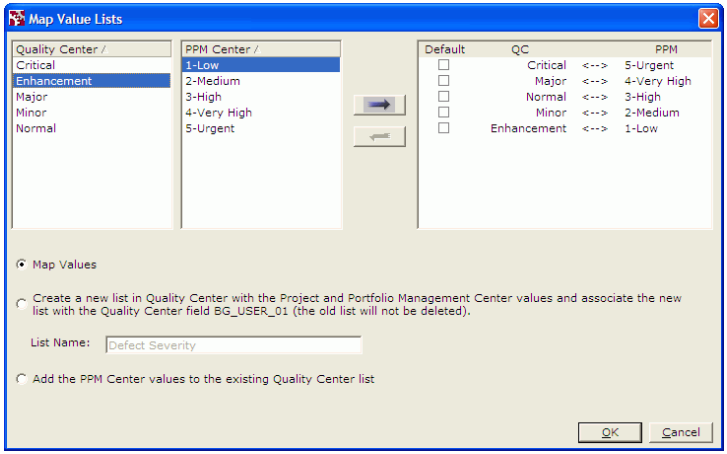
   The Quality Center value list now includes the PPM Center values as well as the original Quality Center values.

Case Three

If both fields in the pair already have lists of values that you need to map or remap, do so as follows:

1. Select the **Map Values** option in the Map Values List window.
2. Select a value in the Quality Center list, select the value in the PPM Center list to which you want to map it, and click the right-arrow button.

   The pair of mapped values appears in the right pane of the Map Value Lists window. For example, if the value representing lowest impact in the Quality Center field is **Enhancement** and the value representing lowest impact in the PPM Center field is **1-Low,** map the two values as shown in the following figure.



Between the **QC** and **PPM** columns in the right pane, the mapping displays one of the following:

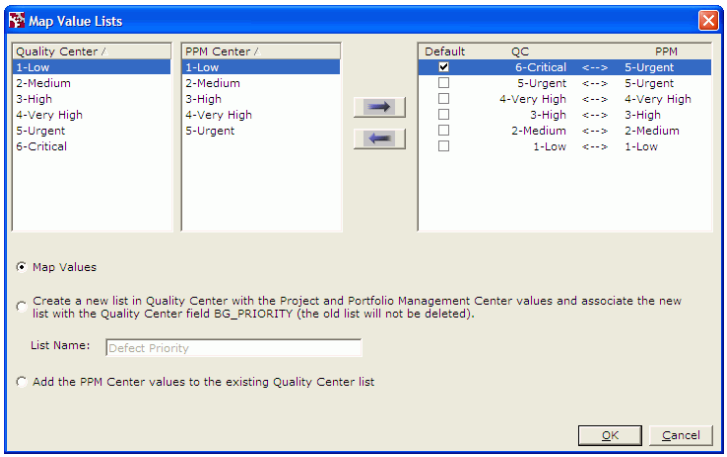
- **-->** if the **Override** column for the pair of fields is set to **QC**
- **<--** if the **Override** column for the pair of fields is set to **PPM**
- **<-->** if the **Override** column for the pair of fields is set to **BIDIRECTIONAL**

3. Repeat step 2 for all the values that require mapping.

   - You must map all the values in the Quality Center list if Quality Center is dominant for that field pair, as indicated by **QC** in the **Override** column in the Map Fields window and by **-->** between the **QC** and **PPM** columns in the right pane of the Map Value Lists window.
   - Similarly, you must map all the values in the PPM Center list if PPM Center is dominant for that field pair, as indicated by **PPM** in the **Override** column in the Map Fields window and by **<--** between the **QC** and **PPM** columns in the right pane of the Map Value Lists window.
   - You must map all the values in both lists if neither field of the pair is dominant, as indicated by **BIDIRECTIONAL** in the **Override** column in the Map Fields window and by **<-->** between the **QC** and **PPM** columns in the right pane of the Map Value Lists window.

   If you map two or more values in one list to one value in the other list, you must select a checkbox in the **Default** column to indicate which mapping prevails.

Consider the example in the following figure, where the two value lists are of different lengths and the mapping is **BIDIRECTIONAL.**



In this example, you must do the following:

a. Map two or more values in one list to a single value in the other list. Here, both the values **Critical** and **Urgent** for the field in Quality Center have been mapped to a value of **Urgent** for the field in PPM Center.

b. Select the appropriate **Default** checkbox to eliminate ambiguity as to which pair will be used to map the values. In this example, if the field in PPM Center changes to a value of **Urgent,** the value of the field in Quality Center becomes **Critical,** based on the selected **Default** pair of values. If the second checkbox, for which the PPM Center value is also **Urgent,** had been chosen as the default instead, when the field in PPM Center changes to a value of **Urgent,** the value of the field in Quality Center would become **Urgent.**

4. Click **OK.**

   The PPM Center values and Quality Center values for the field become mapped as you have specified.

Mapping the Notes Field in PPM Center to an Existing Project

When you enable a new Quality Center project for integration, the integration tool attempts to create new fields in the Quality Center project to correspond to the **Notes to be added on save** field for the PPM Center request. When you update the content of this field in a PPM Center request, the corresponding field is updated in Quality Center.

When you enable a new project, the new fields are named as follows:

- For a defect, the added field in the Defects table is called **BG_USER_<*XX*>,** for example **BG_USER_25.**
- For a requirement, the added field in the Requirements table is called **RQ_USER_<*XX*>,** for example **RQ_USER_26.**

If you enable an existing project that already includes some user-defined memo fields, the added fields may have different names.

Since the Quality Center fields are memo fields and there can be no more than three user-defined memo fields per table, the attempt to map Notes to memo fields may fail. If the attempt fails, you cannot use the integration tool to map the **Notes to be added on save** field. Instead, you must add the memo fields to the project manually, and edit the XML mapping file by adding one of the following to the appropriate mapping file, using the example:

- For defects:

```
<param name="BUG_ITG_NOTES">BG_USER_25</param>
```

- For requirements:

```
<param name="REQ_ITG_NOTES">RQ_USER_26</param>
```

Deploying the Mapping File to PPM Center and Quality Center

After you have completed the mapping, use the PPM Center-Quality Center Integration Tool to deploy the XML mapping file (`ITGQCIntegration.xml`) to PPM Center and to Quality Center.

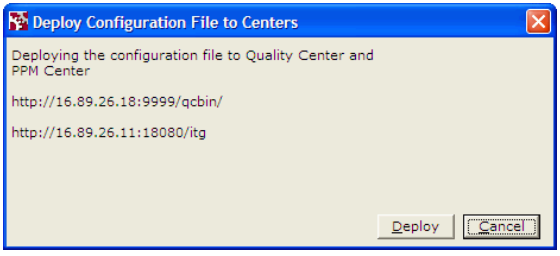
At certain times, you might need to manually edit or back up the XML mapping file. When you created the XML mapping file, it was stored either in the directory in which you installed the integration tool or in another directory that you specified (see step 15 on page 197). If you do not know where the file is located, check the Windows registry. The path in the registry is `HKEY_LOCAL_MACHINE\SOFTWARE\Hewlett-Packard\PPM Center-Quality Center Integration Tool`.

Remember to redeploy the mapping file to both PPM Center and Quality Center.

To deploy the XML mapping file to PPM Center and Quality Center:

1. Verify that the PPM Center `server.conf` parameters are as specified in step 2 on page 206. Set the `ENABLE_QUALITY_CENTER_INTEGRATION` parameter to `true`.
2. In the main window of the PPM Center-Quality Center Integration Tool, select **File > Deploy to Centers.**

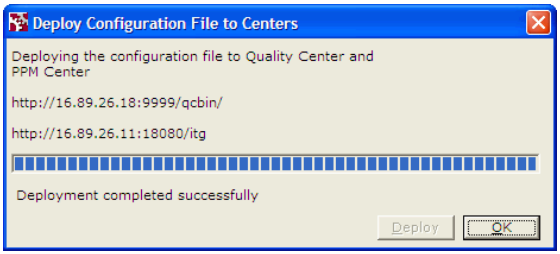
   The Deploy Configuration File to Centers window opens, listing the URLs of the PPM Center and Quality Center servers to which the mapping file will be deployed.



3. Click **Deploy.**

   The tool starts the deployment process. If any errors occur during deployment, a message is displayed in the window.

4. When the deployment completes, a message indicating that deployment completed successfully is added to the Deploy Configuration File to Centers window.



5. Click **OK** to close the window.

On the PPM Server, the mapping file is deployed to the `<PPM_Home>/conf` directory, where `<PPM_Home>` represents the path where the PPM Center instance is installed.

On the Quality Center server (or servers), the mapping file is deployed to the `<QC_Home>/repository/sa/DomsInfo/BTO` directory, where `<QC_Home>` represents the path where Quality Center is installed.

For information about changing and otherwise maintaining existing mappings, see *Managing Existing Mappings* on page 207.

This completes creating and deploying the mapping file. To configure PPM Center for the integration, proceed to *Configuring PPM Center for the Integration*.

Configuring PPM Center for the Integration

Before beginning to configure the integration as described in the following sections, make sure that ALM has been installed and initially configured as described in Chapter 2, *Installing and Setting Up ALM Software,* on page 25.

Establishing Server Connections for Supported Versions

Make sure that the HTTP port is open between the PPM Server and Quality Center machines.

Verify that a supported version of Quality Center is installed and running (see the *System Requirements and Compatibility Matrix*).

Configuring server.conf Parameters in PPM Center

For more information about the steps in this procedure, see the *Installation and Administration Guide*.

Add and specify (or, if present, just specify) the parameters related to Quality Center integration to the PPM Center `server.conf` configuration file, as follows:

1. Stop the PPM Server.

2. Run the following script:

```
sh ./kConfig.sh
```

Set the parameters and values as shown in the following table. (All parameter names begin with `com.kintana.core.server.` but that is not shown in the table.)

Parameter	Value
ENABLE_QUALITY_CENTER_INTEGRATION	Set this parameter to `false` if an XML mapping file has not been generated and deployed to PPM Center and Quality Center. Set this parameter to `true` if an XML mapping file has been generated and deployed to PPM Center and Quality Center, so that integration can be enabled. If a mapping file has not been deployed and you set this parameter to `true`, the PPM Server will not restart. This parameter controls whether PPM Center attempts to send information to Quality Center. (Even if this parameter is set to `false`, Quality Center sends information to PPM Center.)
BASE_URL (already present in `server.conf`)	The URL of the PPM Server. By default, contains the host name of the PPM Server, for example, `http://ppmhost:8080`. However, if the PPM Server is installed in a WAN, use the IP address of the PPM Server, for example, `http://192.60.80.01:8080`, rather than its host name.
ENABLE_QUALITY_CENTER_METRICS_SYNC	Always set this parameter to `false`. It does not apply to ALM.

3. Restart the PPM Server.

For information about using the integration, see *Using the Integration of PPM Center with Quality Center* on page 215.

Managing Existing Mappings

After you have configured PPM Center and Quality Center for integration, you can use the integration tool to make changes to the configuration.

You can change the configuration for a request type mapping or for an entire Quality Center project. When you change a mapping for a project, the changes apply to all the request types mapped to the project. For example, if you delete the mapping for a project, the mapping for all of the project's mapped request types is also deleted.

As described in the following sections, you can do the following:

- Delete a mapping
- Disable a mapping
- Re-enable a previously disabled mapping
- View and change a mapping
- Change the default request type
- Enable and disable request hierarchy synchronization
- Enable and disable email notification on requirement creation
- Enable and disable email notification on requirement update

Remember to redeploy the mapping file to PPM Center and Quality Center after any mapping revision described in the following sections. See *Deploying the Mapping File to PPM Center and Quality Center* on page 203.

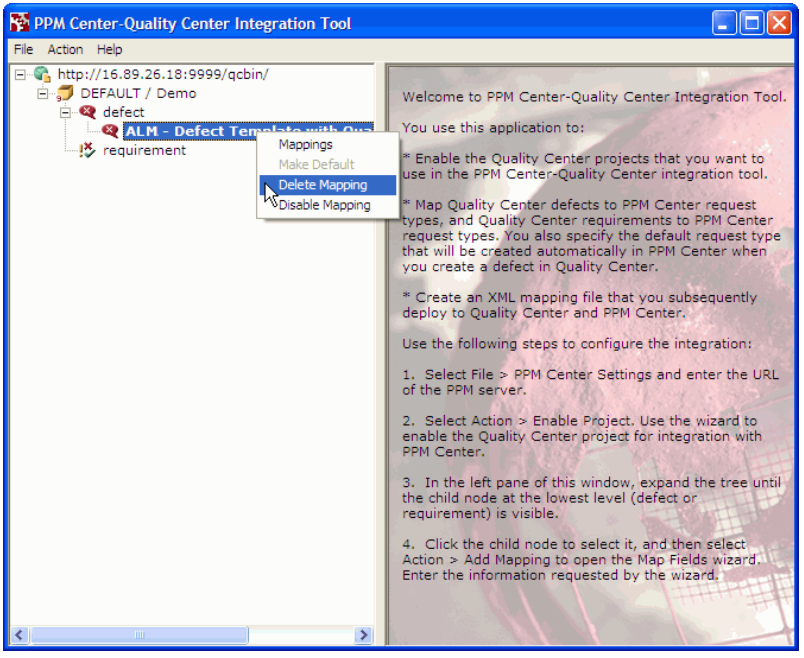
Deleting a Mapping

When you delete a mapping, the connection between the corresponding fields in PPM Center and Quality Center is removed, and updating a field in one application no longer causes an update in the other.

If you later want the applications to update each other, you will need to create a new mapping.

To delete a mapping:

1. Right-click the project or request type of interest and select **Delete Mapping.**



   The tool asks whether you want to delete the mapping.

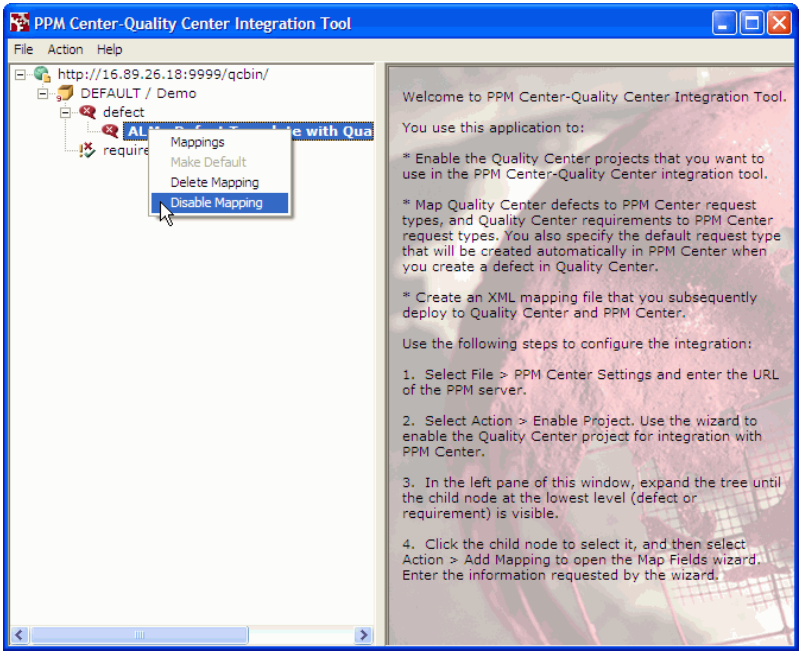
2. Click **Yes.**

Disabling and Re-Enabling a Mapping

When you disable a mapping, the mapping is not deleted, but creating a request in PPM Center does not create a defect or requirement in the Quality Center project, and creating a defect in Quality Center does not create a request in PPM Center. In addition, updating a field in one application does not update the field to which it is mapped in the other application.

To disable the mapping between a request type and a defect or requirement:

1. Right-click the project or request type of interest and select **Disable Mapping.**



   The tool asks whether you want to disable the mapping.

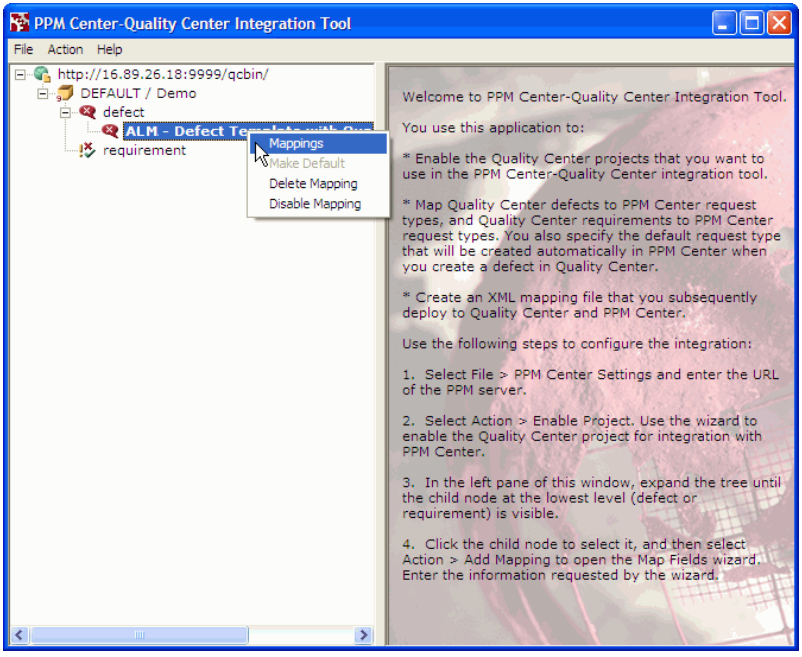
2. Click **Yes.**

To enable a mapping that was previously disabled, right-click the project or request type and select **Enable Mapping.**

Viewing and Changing a Mapping

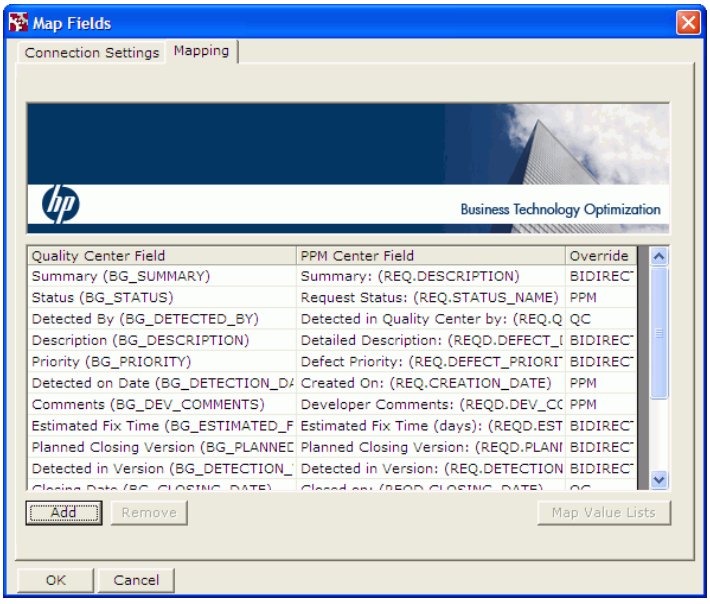
To view a mapping and make changes to the mapping:

1. Right-click the request type of interest and select **Mappings.**



The Map Fields window opens.

2. If the **Mapping** tab is not already selected, select it to display the mapping.



3. Use this tab to change the mapping in the same way you created the original mapping. See *Creating the Mapping Between PPM Center and Quality Center Fields* on page 191.

Changing the Default Request Type for a Quality Center Defect

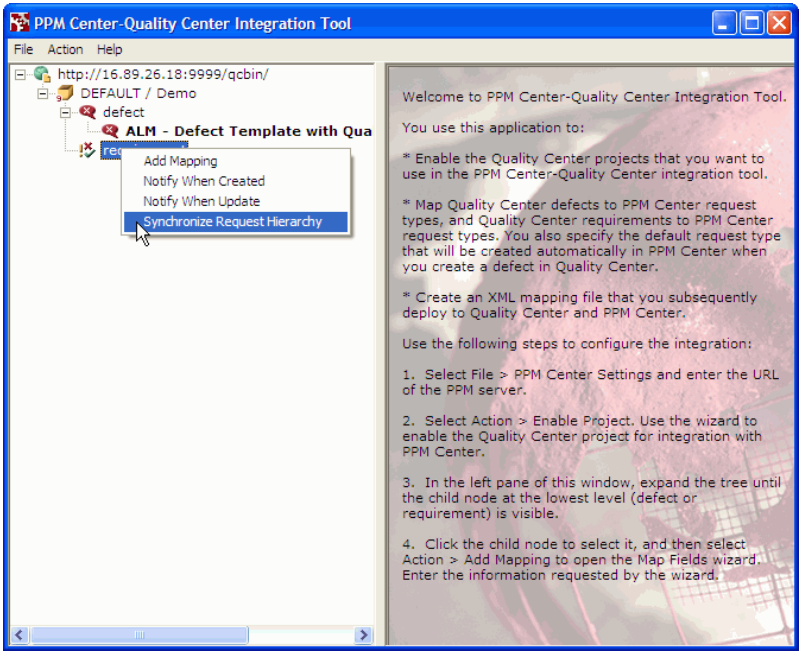
To change the default request type used to create a request in PPM Center when you create a defect in Quality Center, right-click the request type you want to use as the default, and select **Make Default.**

Enabling and Disabling Request Hierarchy Synchronization

You can enable or disable the request hierarchy synchronization between a PPM Center request and a Quality Center requirement.

To enable the synchronization:

1. Right-click **requirement.**
2. If the **Synchronize Request Hierarchy** option is *not* selected (has no check mark), click it to select the option.



To disable the synchronization:

1. Right-click **requirement.**
2. If the **Synchronize Request Hierarchy** option *is* selected (has a check mark), click it to clear the option.

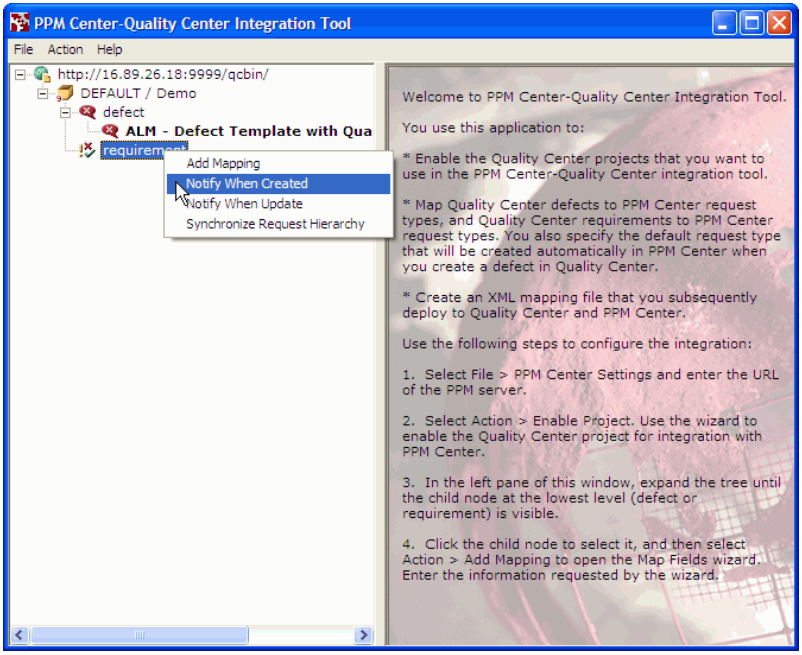
For information about request hierarchy synchronization, see *Request Hierarchy Synchronization* on page 222.

Enabling and Disabling Email Notification on Requirement Creation

You can enable or disable sending an automatic email notification when a requirement is created by the integration.

To enable the email notification for requirement creation:

1. Right-click **requirement.**
2. If the **Notify When Created** option is *not* selected (has no check mark), click it to select the option.



To disable the email notification for requirement creation:

1. Right-click **requirement.**
2. If the **Notify When Created** option *is* selected (has a check mark), click it to clear the option.

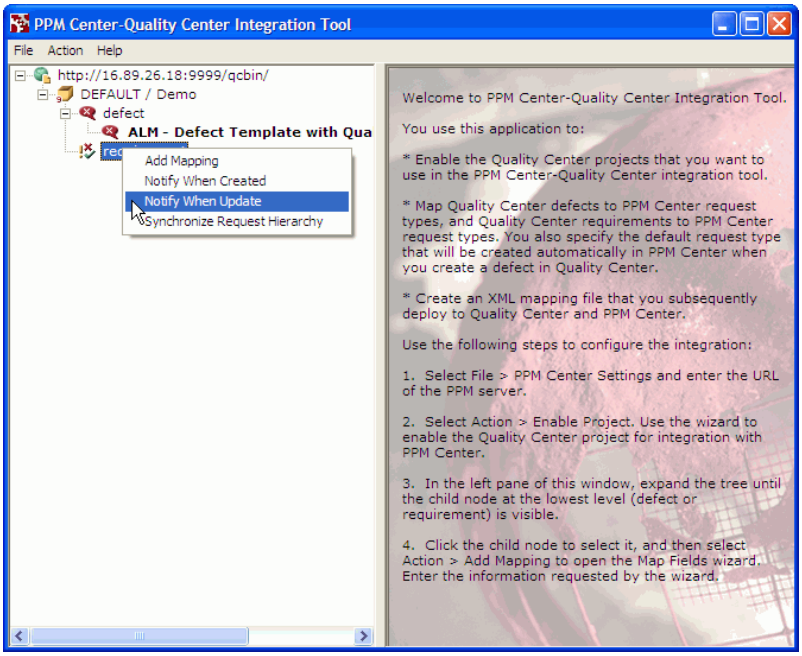
Enabling and Disabling Email Notification on Requirement Update

You can enable or disable sending an automatic email notification when a requirement is updated by the integration.

You can enable or disable sending an automatic email notification when a requirement is created by the integration.

To enable the email notification for requirement update:

1. Right-click **requirement.**
2. If the **Notify When Update** option is *not* selected (has no check mark), click it to select the option.



To disable the email notification for requirement update:

1. Right-click **requirement.**
2. If the **Notify When Update** option *is* selected (has a check mark), click it to clear the option.

Using the Integration of PPM Center with Quality Center

This section describes how the request types and workflows provided in ALM support integration of PPM Center with Quality Center.

Steps in PPM Center Workflows that Involve Integration with Quality Center

Several workflows and subworkflows provided in ALM have steps that are related to the integration of PPM Center with Quality Center, as follows:

- The ALM - Request For Change workflow (see *ALM - Request For Change Workflow* on page 43) calls the following subworkflows at the indicated steps:
  - At step 17, the ALM - Request For Change workflow calls the Plan Tests Sub WF (see *ALM - Plan Tests Sub WF Subworkflow* on page 54).

    In this subworkflow, step 1, Quality Process Mode, determines whether the test planning will be done manually or using integration of PPM Center with Quality Center. If integration is to be used, the following additional subworkflow steps relate to the integration:
    - Step 4, Quality Process Entry
    - Step 5, Generate Requirement in Quality Center
    - Step 6. Quality Center Failure
    - Step 7, Quality Center Requirements Setup
    - Step 8, Quality Center Test Plan Setup
    - Step 9, Quality Center Test Lab Setup
  - At step 22, the ALM - Request For Change workflow calls the Deploy and Test Changes Sub WF (see *ALM - Deploy and Test Changes Sub WF Subworkflow* on page 56).

    In this subworkflow, step 3, Quality Process Mode, determines whether the testing will be done manually or using integration of PPM Center with Quality Center. If integration is to be used, the following additional subworkflow step relates to the integration:
    - Step 5, Quality Center Test Execution

- The ALM - Defect Template with Quality Center Integration workflow generates a defect or requirement in Quality Center as soon as a request of the associated type is created. See *ALM - Defect Template with Quality Center Integration Workflow* on page 176.
- The ALM - Release Request workflow (see *ALM - Release Request Workflow* on page 76), includes the following steps that relate to integration of PPM Center with Quality Center for the release management process:
  - Step 3, Integrate with Quality Center?
  - Step 4, Quality Process Entry
  - Step 5, Create Release Requirement in Quality Center
  - Step 6, Quality Center Failure

Configuring Request Types and Workflows for the Integration

This section provides guidelines on how to build request types and workflows that support the integration of PPM Center with Quality Center.

To enable integration between PPM Center requests and Quality Center projects, you must ensure that the request types and projects have the necessary matching fields and that the workflows use steps that support integration.

ALM provides request types and workflows that use Quality Center capabilities, and the workflows include the required steps. You can create integration-enabled request types and workflows in any of the following ways:

- By using the PPM Workbench to copy the provided ALM request types and workflows, which already contain the components required for integration, and changing the copies as needed. This is often the easiest approach.
- By creating new request types and workflows that incorporate the components required for integration.
- By customizing your existing PPM Center request types and workflows by adding the components required for integration.

After you configure the required request types and workflows, you use the PPM Center-Quality Center Integration Tool to map the PPM Center fields and their valid values to the Quality Center fields and their valid values (see *Creating the Mapping Between PPM Center and Quality Center Fields* on page 191).

For detailed information about configuring request types and workflows, see the *HP Demand Management Configuration Guide* as necessary.

Configuring Request Types

The guidelines to configure a request type for integration are as follows:

- Make sure the request header type for the request type includes the Quality Center Info field group. Only request types with this field group can be mapped to Quality Center defects or requirements. See *Request Header Types* on page 175.

By default, the Quality Center Info field group is included in the ALM - Request for Change (RFC) request type and in the ALM - Release Management request type, but not in the ALM - Defect Template with Quality Center Integration request type.

- Decide which request type to map to each Quality Center project, then make sure that the request type and project have the required mapping of corresponding fields.

- Make sure that each pair of mapped fields includes the required valid values. For example, if a Quality Center field contains a lookup list, make sure that the corresponding field in the PPM Center request accepts those values. If you update a field in one application with a value that is not valid in the other application, the field in that other application will not be updated.

  For details, see *Resolving Lists of Valid Values* on page 198.

Quality Center workflows can limit the changes a user can make to a field. For example, a script might specify that at a certain point in the Quality Center workflow, the user cannot change the status from Open to Closed.

If you update a PPM Center field with a value that is valid in the corresponding Quality Center field, the Quality Center field will be updated, even if it should not be updated according to the Quality Center workflow script.

Configuring Workflows

The guidelines to configure a workflow for integration are as follows (refer to the *HP Demand Management Configuration Guide* for details as necessary):

- Make sure the workflow includes execution steps and decision steps that enable the integration of PPM Center with Quality Center. The workflows provided by ALM include such steps.

  A PPM Center decision step that depends on Quality Center (that is, a PPM Center request that is supposed to be updated by a Quality Center status change) can have its status changed in Quality Center only by a user who has Administrator rights.

- If you need to customize a workflow to create a defect or a requirement, HP recommends using the execution steps that are included in the ALM - Defect Template with Quality Center Integration workflow, instead of building the steps yourself. To create defects or requirements in Quality Center, your workflow must include one of the following execution steps that uses the stated special command:

  - To create defects, the **ALM - Create QC Defect** execution step with the `ksc_create_defect_in_QC` special command
  - To create requirements, the **ALM - Create QC Requirement** execution step with the `ksc_create_requirement_in_QC` special command

  In the **Properties** tab of the workflow execution step, specify a value in the **Request Status** field that is valid for Quality Center, for example, **1-Requirements Setup Completed** when creating a requirement.

  Once an execution step has created a requirement or defect in Quality Center, then every time the PPM Center request status changes, the Quality Center requirement or defect status also changes if the same PPM Center status exists for the Quality Center requirement or defect. For example, if the PPM Center request status changes to Open, the Quality Center requirement or defect status will also change to Open, as long as Open is one of the values allowed in the status field of the requirement or defect.

  For more information about configuring workflow steps, see the *HP Demand Management Configuration Guide*.

After Quality Center sends an update to PPM Center, Quality Center waits for a response, and the Quality Center record remains locked until Quality Center receives the response. Meanwhile, if PPM Center advances to the next workflow step and attempts, for example, to update (synchronize) Quality Center with a new request status, Quality Center rejects the update since the record is locked.

Therefore, a PPM Center workflow should not contain successive steps such that the first causes a PPM Center request to advance based on a change in Quality Center status, and the second causes PPM Center to attempt to update Quality Center. Make sure there is an intervening step between two such steps.

- When a PPM Center request is integrated with a Quality Center project, you can use a change in the Quality Center status to cause the PPM Center request to advance through an active decision step to the next step in the associated PPM Center workflow. For example, when the QA manager sets the status of a Quality Center project to indicate that test planning is complete, the corresponding request in PPM Center can automatically advance from the step in the associated workflow awaiting that notification.

  Conversely, whenever the status of a PPM Center request changes, PPM Center notifies Quality Center, and (assuming the new status is valid in Quality Center), Quality Center users can take appropriate action such as starting tests.

  To enable this functionality, you must design the workflow decision steps such that the following three items have the same values:

  - Quality Center status that will trigger the advancement in the PPM Center workflow.
  - Transition name (which is specified as the **Meaning** field of the validation value for the workflow step source) for the active decision step in the PPM Center workflow.

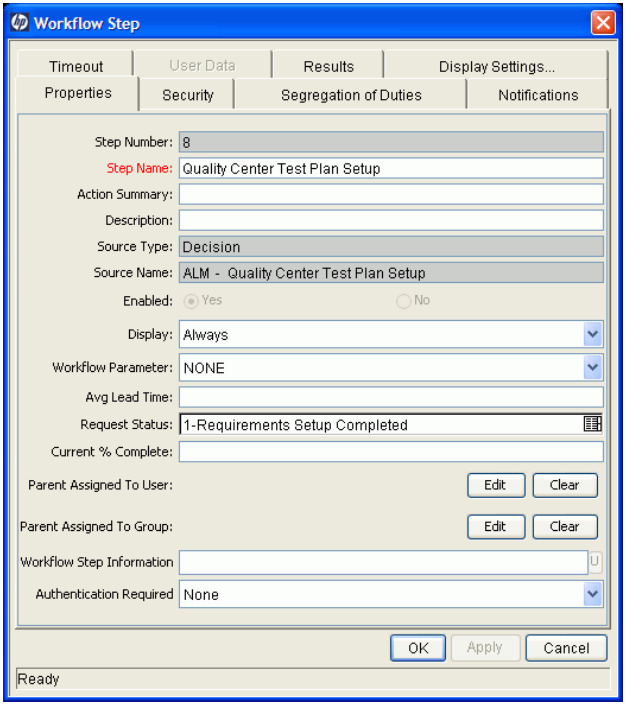
    HP recommends that you give the **Meaning** field of the transition a value that is unique to this transition, that is, a value that does not exist anywhere else in the workflow. When this value becomes assigned to the **ITG Status** field in Quality Center, the PPM Center workflow advances if the value matches a valid transition in an active workflow step. If the workflow has more than one active step and the **Meaning** is not unique, the workflow could advance to an unintended step.

- **Request Status** field in the destination step in the PPM Center workflow.

If the Quality Center status does not appear in the list of valid request status values in PPM Center, PPM Center sends an error message to Quality Center, the Quality Center status reverts to its previous value, and the PPM Center workflow does not advance.

For example, in the following portion of the ALM - Plan Tests Sub WF subworkflow, the transition from step 7 to step 8 is called **1-Requirements Setup Completed.**

If you double-click step 8 (the destination step), the **Properties** tab of the Workflow Step window shows that the value in the **Request Status** field is also **1-Requirements Setup Completed.**



All three items—the Quality Center status, the transition, and the **Request Status** field of the destination step—have the same value. Therefore, if the QA team changes the Quality Center status to **1-Requirements Setup Completed** when step 7 is active, the workflow will advance to step 8.

If you need to change the value of the **Request Status** field of the destination step, in the **Properties** tab of the Workflow Step window for that step, specify the new value in the **Request Status** field and click **OK.**

If you need to change the **Meaning** field that defines the transition name, right-click the preceding decision step and select **Edit Source;** in the **Validation** section of the Decision window, click **Open;** click the validation value (row) of interest and click **Edit;** specify the new value in the **Meaning** field; and click **OK** to close all open windows. For more detailed information, see the *HP Demand Management Configuration Guide.*

Request Hierarchy Synchronization

The integration of PPM Center with Quality Center allows you to synchronize the hierarchies of requests in PPM Center and requirements in Quality Center, as in the following example sequence:

1. A PPM Center request named Request A is created.
2. With integration, a corresponding Requirement A is automatically created in Quality Center.
3. A PPM Center request named Request B is created with a reference to Request A indicating that Request A is the parent of Request B.
4. A corresponding Requirement B is automatically created in Quality Center. If request hierarchy synchronization is implemented, since Request B is the child of Request A, Requirement B is automatically created as the child of Requirement A.

If Requirement A does not exist in Quality Center, creating a reference in PPM Center from Request B to Request A has no effect on Quality Center.

If you later delete the relationship (the reference) between Request A and Request B in PPM Center, the relationship between Requirement A and Requirement B is automatically deleted in Quality Center. Instead of being a child of Requirement A, Requirement B becomes a child of the Quality Center default root requirement for PPM Center requests.

If you synchronize hierarchies, any changes you make to the hierarchy in PPM Center are automatically reflected in the hierarchy of the Quality Center project. Thus, changes made to a Quality Center project can be overridden later by updates to the corresponding PPM Center request.

PPM Center allows a request to have multiple parents, but Quality Center limits a requirement to only one parent. If a PPM Center request has multiple parents, Quality Center does not duplicate that hierarchy in the project, and PPM Center displays a message indicating a problem with hierarchy synchronization.

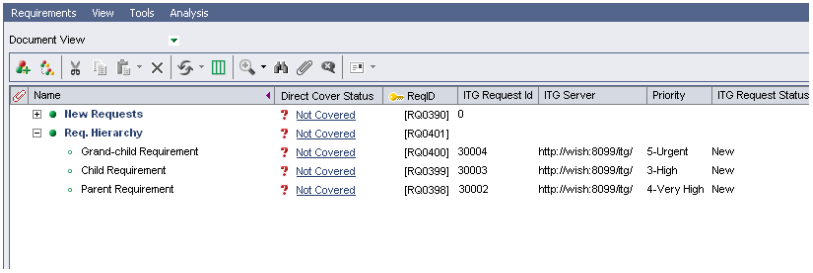
Enabling Request Hierarchy Synchronization

Synchronization between the PPM Center request type and the Quality Center project must be enabled as follows, depending on whether a mapping has been created:

- If a mapping has not been created between the Quality Center requirement and the PPM Center request type, as you use the PPM Center-Quality Center Integration Tool to enable the project for integration, select the checkbox in the Request Hierarchy section in the Enable Quality Center Project wizard. See step 15 on page 188.
- If a mapping has been created, in the PPM Center-Quality Center Integration Tool, right-click the request type and select Synchronize Request Hierarchy.

Example of Request Hierarchy Synchronization

The following screen shows a Quality Center requirement called **Req. Hierarchy** with three requirements.



Each requirement is mapped to a PPM Center request of type ALM - Request for Change (RFC). The request numbers in PPM Center are shown in the **ITG Request Id** column. When created, the **RFC Summary** fields of the requests were specified as **Parent Requirement, Child Requirement,** and **Grand-child Requirement** to indicate their intended hierarchy (first in PPM Center and then automatically as requirements in Quality Center) after the relationships among the requests are established in PPM Center.

When you open a request, you can add a different request in the **References** section and specify the relationship of the reference request to the request you opened. For example, the reference request can be a child or a parent of the open request.

For the example, you could use any one of the following methods to establish the relationships among requests, which would then automatically synchronize the relationships among the associated Quality Center requirements:

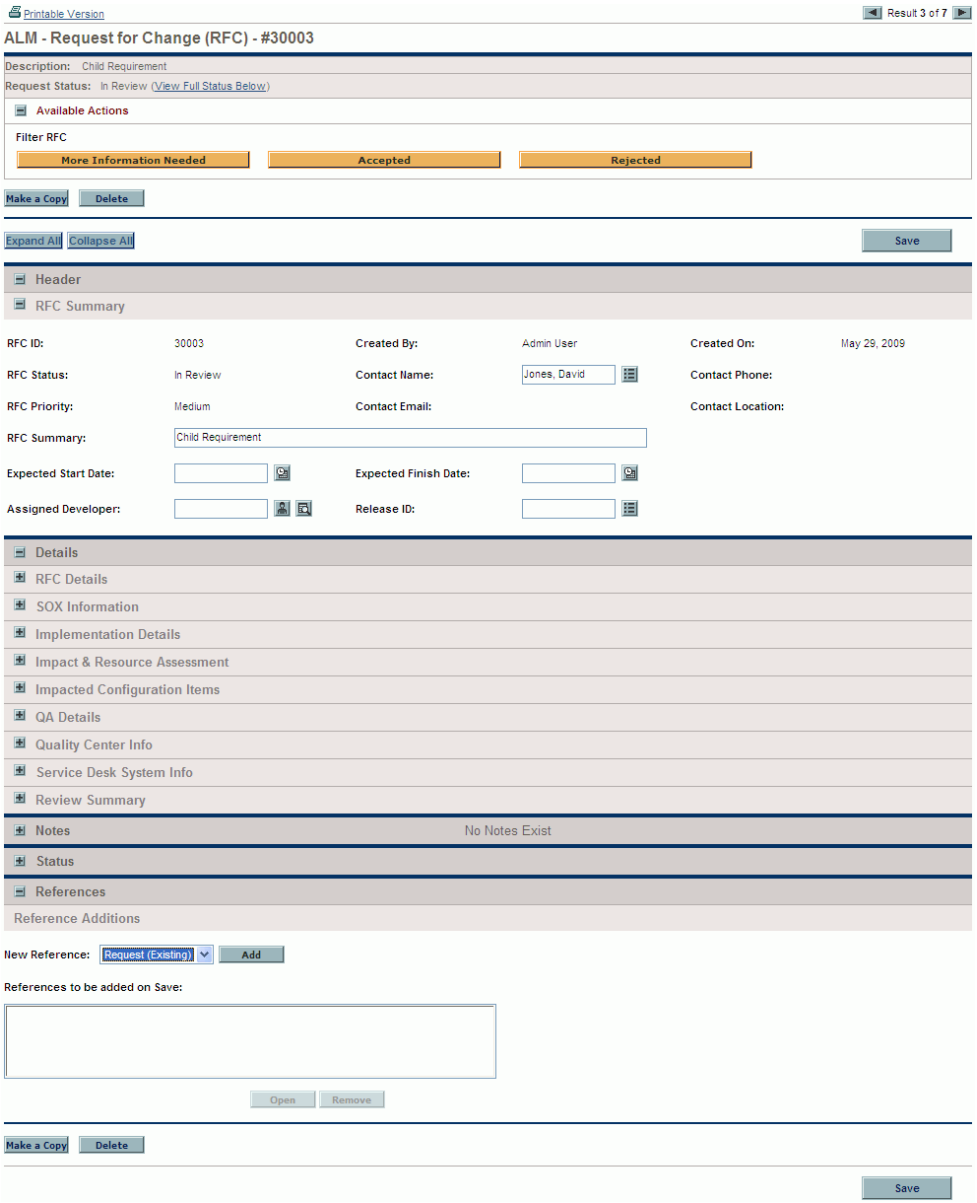
- Open request 30002 and make it the parent of request 30003, and then open request 30003 and make it the parent of request 30004.
- Open request 30003 and make it the child of request 30002, and then open request 30004 and make it the child of request 30003.
- Open only request 30003 and make it both the child of request 30002 and the parent of request 30004. This method is slightly quicker and is used in the following procedure.

To create the relationships between the requests, in PPM Center:

1. Select and open the request for which you want to define one or more relationships.

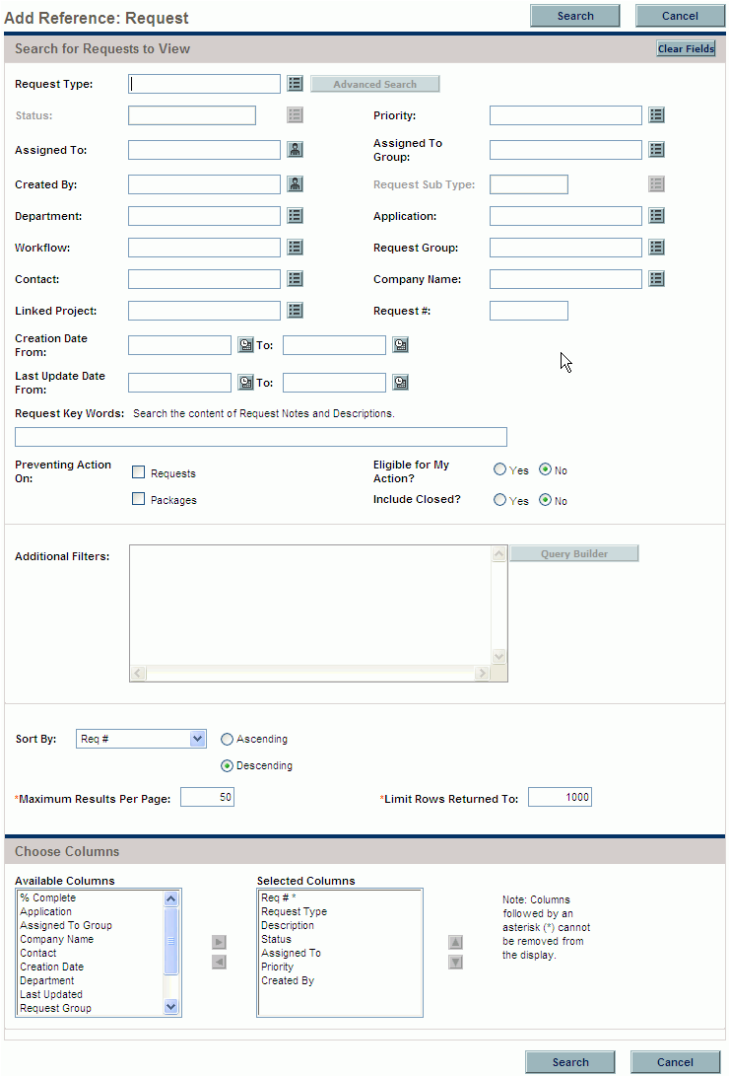
   In the example, open request 30003.

2. In the **Reference Additions** section of the request, in the **New Reference** drop-down list, select **Request (Existing).**



3. Click **Add.**

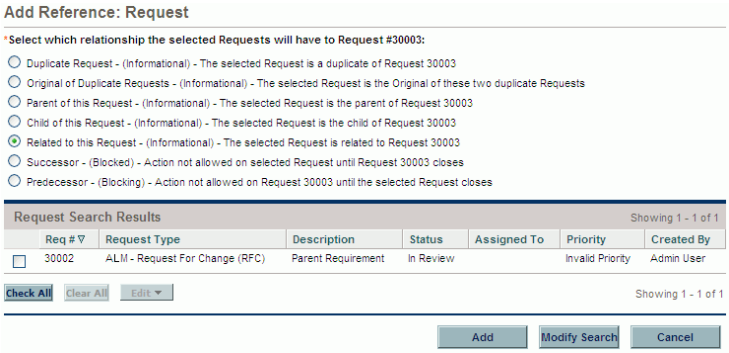
The Add Reference: Request window opens.



4. Specify data about the request to be related to the open request, and click **Search.**

   In this example, type `30002` in the **Request #** field and click **Search.**

   If the search is successful, the following window opens.



   The window allows you to select from the search results which requests will be references (in the example, 30002 is the only request found using the specified search criteria), and to select an option to specify the relationship the reference request (or requests) will have to the open request (30003 in the example).

5. In the **Request Search Results** section, select the checkbox for the request that is to be made a reference.

6. In the upper section of the window, select the option for the relationship you want this reference request to have to the open request.

   In this example, select **Parent of this Request** because you want reference request 30002 to be the parent of open request 30003.

7. Click **Add.**

   The reference request and its relationship are added to the **References to be added on Save** text box in the open request.

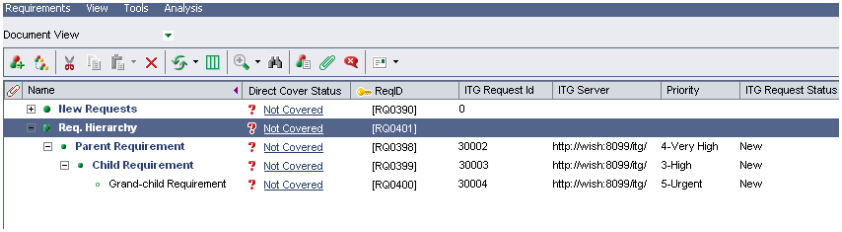
8. Repeat step 2 on page 225 through step 7 (or step 3 on page 226 through step 7) as necessary to create parent and child relationships with additional requests.

In this example, follow step 3 through step 7, but in step 4 type **30004** in the **Request #** field to make that request the one to reference, and in step 6 select **Child of this Request** because you want reference request 30004 to be the child of open request 30003.

9. Click **Save.**

The reference requests with which you have defined relationships are listed in the **References** section, **Requests** subsection of the open request.

In Quality Center, the requirements (rows) are now reorganized and indented to reflect the relationship hierarchy you specified among the PPM Center requests.



Default Quality Center–PPM Center Field Mappings

This section lists the default field mappings that are available when integrating the following:

- The Requirements Module in Quality Center with the ALM - Request for Change (RFC) request type in PPM Center (see *Default Field Mappings for Quality Center Requirements*)
- The Defects Module in Quality Center with the ALM - Defect Template with Quality Center Integration request type in PPM Center (see *Default Field Mappings for Quality Center Defects* on page 236)

Default Field Mappings for Quality Center Requirements

This section summarizes the default field mappings for the integration between the Requirements Module in Quality Center and the ALM - Request for Change (RFC) request type in PPM Center. This section includes the following tables:

- *Table 6-2* describes the default requirement mappings that can be modified. The **Override** column indicates which field is dominant by default—PPM Center (if set to **PPM**), Quality Center (if set to **QC**), or neither (if set to **BIDIRECTIONAL**). For more information, see step 9 on page 194.
- *Table 6-3* on page 234 describes the fields that were added to Quality Center requirements to support integration with PPM Center requests. These fields should not be modified (except for their Labels, as desired).
- *Table 6-4* on page 235 describes the fields that were added to PPM Center requests to support integration with Quality Center requirements. These fields should not be modified (except for their Field Prompts, as desired).

Table 6-2. Requirements mapping you can modify (page 1 of 2)

Quality Center Field Name, Database ID, and Field Type	PPM Center Field Name, Database ID [a], and Field Type	Override
Priority RQ_REQ_PRIORITY Enumeration	RFC Priority PRIORITY_CODE Drop-down list	PPM
Author [b] RQ_REQ_AUTHOR User list	Created By CREATED_BY User list	PPM

Table 6-2. Requirements mapping you can modify (page 2 of 2)

Quality Center Field Name, Database ID, and Field Type	PPM Center Field Name, Database ID [a], and Field Type	Override
ITG Request Status [c, d] RQ_USER_XX [e] Enumeration	RFC Status [c] STATUS_ID List	PPM [c]
	Quality Center Status [d] KNTA_QC_REQUIREMENT_STATUS Text (300)	QC [d]
Name RQ_REQ_NAME Text (255)	RFC Summary DESCRIPTION Text (200)	PPM
ITG Request Description RQ_USER_XX [e] Memo	RFC Description RFC_DESCRIPTION Text (1800)	PPM
Assigned To RQ_USER_XX [e] User list	Quality Center Assigned To User KNTA_QC_ASSIGNED_TO Quality Center user list (uses a special validation that retrieves the Quality Center user list for a specific project)	PPM

a. The listed PPM Center database IDs are the same as in the PPM Workbench. The exact database IDs are displayed by the integration tool.

b. The Author field in Quality Center displays the name of the user who created the request in PPM Center. Quality Center can accept any name, but PPM Center cannot. If you configure this field to be bidirectionally updateable and a user selects a user name in Quality Center that does not exist in PPM Center, the operation will fail. User name lists must therefore be synchronized.

c. When the RFC Status field is updated in PPM Center, the new status is sent to Quality Center. If the new status matches one of the requirement statuses in Quality Center, the ITG Request Status field in Quality Center is updated; if not, the update is ignored by Quality Center.

d. When the status of a requirement is updated in Quality Center, the Quality Center Status field in PPM Center is correspondingly updated if the value sent by Quality Center is a valid workflow step transition in PPM Center.

e. The Quality Center fields with the database ID of RQ_USER_XX are user fields that are added to Quality Center when using the integration tool to enable a project. The value of XX is determined when the user field is added to Quality Center.

Table 6-3 describes the fields that were added to Quality Center requirements to support integration with PPM Center requests. These fields should not be modified (except for their Labels, as desired).

Table 6-3. Fields added to Quality Center requirements to support integration with PPM Center requests

Field Name	Field Database ID	Field Type	Description
ITG Server	RQ_USER_XX	Text (120)	User field containing the PPM Center URL.
ITG Request Type	RQ_USER_XX	Text (40)	User field containing the PPM Center request type of the corresponding PPM Center request. Used for field mapping.
ITG Notes	RQ_USER_XX	Memo	Quality Center memo field. Stores PPM Center notes. Always overridden by PPM Center. Added to Quality Center if the user chooses to synchronize the Notes field.
ITG Updates	RQ_USER_XX	Text (120)	User field for integration messages. Shows last operation success/error message in case of failure.
ITG Request ID	RQ_REQUEST_ID	Integer	System field containing PPM Center request ID.

Table 6-4 describes the fields that were added to PPM Center requests to support integration with Quality Center requirements. These fields should not be modified (except for their Field Prompts, as desired).

Table 6-4. Fields added to PPM Center requests to support integration with Quality Center requirements

Field Name	Field Database ID	Field Type	Description
Quality Center Instance	KNTA_QC_INSTANCE	List retrieved from the XML mapping file	Quality Center instance URL.
Quality Center Domain	KNTA_QC_DOMAIN	List retrieved from the XML mapping file	Quality Center domain.
Quality Center Project	KNTA_QC_PROJECT	List retrieved from the XML mapping file	Quality Center project.
Quality Center Assigned To User	KNTA_QC_ASSIGNED_TO	Not applicable	Obsolete field that is not used by ALM. Do not use.
Quality Center Requirement No.	KNTA_QC_REQUIREMENT_NO	Numeric Text (10 digits)	Quality Center requirement ID.
Quality Center Status	KNTA_QC_REQUIREMENT_ STATUS	Text (300)	Quality Center requirement status.
Quality Center Message	KNTA_QC_REQUIREMENT_ INT_MSG	Text (300)	Integration messages. Shows last operation success/error message.
Quality Center Attachments	KNTA_QC_REQUIREMENT_ ATT_URL	URL	URL for Quality Center attachments page.
Quality Center Dashboard Subject	KNTA_QC_DASHBOARD_ SUBJECT	Not applicable	Obsolete field that is not used by ALM. Do not use.
Quality Center Requirements coverage	KNTA_QC_REQUIREMENT_ COVERAGE	Not applicable	Obsolete field that is not used by ALM. Do not use.
Quality Center Open Defects	KNTA_QC_OPEN_DEFECTS	Not applicable	Obsolete field that is not used by ALM. Do not use.

Default Field Mappings for Quality Center Defects

This section summarizes the default field mappings for the integration between the Defects Module in Quality Center and the ALM - Defect Template with Quality Center Integration request type in PPM Center. This section includes the following tables:

- *Table 6-5* describes the default defect mappings that can be modified. The **Override** column indicates which field is dominant by default—PPM Center (if set to **PPM**), Quality Center (if set to **QC**), or neither (if set to **BIDIRECTIONAL**). For more information, see step 9 on page 194.
- *Table 6-6* on page 239 describes the fields that were added to Quality Center defects to support integration with PPM Center requests. These fields should not be modified (except for their Labels, as desired).
- *Table 6-7* on page 240 describes the fields that were added to PPM Center requests to support integration with Quality Center defects. These fields should not be modified (except for their Field Prompts, as desired).

Table 6-5. Defect mappings you can modify (page 1 of 3)

Quality Center Field Name, Database ID, and Field Type	PPM Center Field Name, Database ID [a], and Field Type	Override
Reproducible BG_REPRODUCIBLE Y/N	Reproducible REPRODUCIBLE Y/N	QC
Project BG_PROJECT List	Application APPLICATION_CODE List	QC
Actual Fix Time BG_ACTUAL_FIX_TIME Date	Actual Fix Time (days) ACTUAL_FIX_TIME Date	QC

Table 6-5. Defect mappings you can modify (page 2 of 3)

Quality Center Field Name, Database ID, and Field Type	PPM Center Field Name, Database ID [a], and Field Type	Override
Closed in Version BG_CLOSING_VERSION List	Closed in Version CLOSING_VERSION Text (40)	QC
Severity BG_SEVERITY Enumeration	Severity SEVERITY Drop-down list	BIDIRECTIONAL
Closing Date BG_CLOSING_DATE Date	Closed on CLOSING_DATE Date	QC
Detected in Version BG_DETECTION_VERSION List	Detected in Version DETECTION_VERSION Text (40)	BIDIRECTIONAL
Planned Closing Version BG_PLANNED_CLOSING_VER List	Planned Closing Version PLANNED_CLOSING_VER List	BIDIRECTIONAL
Estimated Fix Time BG_ESTIMATED_FIX_TIME Number	Estimated Fix Time (days) ESTIMATED_FIX_TIME Numeric Text (10 digits)	BIDIRECTIONAL
Comments BG_DEV_COMMENTS Memo	Developer Comments DEV_COMMENTS Text (1800)	PPM
Detected on Date BG_DETECTION_DATE Date	Created On CREATION_DATE Date	PPM
Priority BG_PRIORITY Enumeration	Priority DEFECT_PRIORITY_CODE Drop-down list	BIDIRECTIONAL

Table 6-5. Defect mappings you can modify (page 3 of 3)

Quality Center Field Name, Database ID, and Field Type	PPM Center Field Name, Database ID [a], and Field Type	Override
Description BG_DESCRIPTION Memo	Detailed Description DEFECT_DESCRIPTION Text (1800)	BIDIRECTIONAL
Detected By BG_DETECTED_BY Quality Center users list	Detected in Quality Center by QC_DETECTED_BY Text (40)	QC
Status [b, c] BG_STATUS Enumeration	Request Status [b] STATUS_ID List	PPM [b]
	Quality Center Defect Status [c] KNTA_QC_DEFECT_STATUS Text (300)	QC [c]
Summary BG_SUMMARY Text (255)	Summary DESCRIPTION Text (200)	BIDIRECTIONAL

a. The listed PPM Center database IDs are the same as in the PPM Workbench. The exact database IDs are displayed by the integration tool.

b. When the Request Status field is updated in PPM Center, the new status is sent to Quality Center. If the new status matches one of the defect statuses in Quality Center, the Status field in Quality Center is updated; if not, the update is ignored by Quality Center.

c. When the status of a defect is updated in Quality Center, the Quality Center Defect Status field in PPM Center is correspondingly updated if the value sent by Quality Center is a valid workflow step transition in PPM Center.

Table 6-6 describes the fields that were added to Quality Center defects to support integration with PPM Center requests. These fields should not be modified (except for their Labels, as desired).

Table 6-6. Fields added to Quality Center defects to support integration with PPM Center requests

Field Name	Field Database ID	Field Type	Description
ITG Server	BG_USER_XX [a]	Text (120)	User field containing PPM Center URL.
ITG Request Type	BG_USER_XX [a]	Text (40)	User field containing the PPM Center request type of the corresponding PPM Center request. Used for field mapping.
ITG Notes	BG_USER_XX [a]	Memo	Quality Center memo field. Stores PPM Center notes. Always overridden by PPM Center. Added to Quality Center if the user chooses to synchronize the Notes field.
ITG Request ID	BG_REQUEST_ID	Integer	System field containing PPM Center request ID.

a. The Quality Center fields with the database ID of BG_USER_XX are user fields that are added to Quality Center when using the integration tool to enable a project. The value of XX is determined when the user field is added to Quality Center.

Table 6-7 describes the fields that were added to PPM Center requests to support integration with Quality Center defects. These fields should not be modified (except for their Field Prompts, as desired).

Table 6-7. Fields added to PPM Center requests to support integration with Quality Center defects

Field Name	Field Database ID	Field Type	Description
Quality Center Instance	KNTA_QC_DEFECT_INSTANCE	List retrieved from the XML mapping file	Quality Center instance URL.
Quality Center Domain	KNTA_QC_DEFECT_DOMAIN	List retrieved from the XML mapping file	Quality Center domain.
Quality Center Project	KNTA_QC_DEFECT_PROJECT	List retrieved from the XML mapping file	Quality Center project.
Detected in Quality Center by	QC_DETECTED BY	Text (40)	The Quality Center user who detected the defect.
Defect Number	KNTA_QC_DEFECT_NO	Numeric Text (10 digits)	Quality Center defect ID.
Quality Center Defect Status	KNTA_QC_DEFECT_STATUS	Text (300)	Quality Center defect status.
Quality Center Message	KNTA_QC_DEFECT_INT_MSG	Text (300)	Integration messages. Shows last operation success/error message.
Quality Center Attachments	KNTA_QC_DEFECT_ATT_URL	URL	URL for Quality Center attachments page.
Quality Center Assigned To User	KNTA_QC_DEFECT_ASSIGNED_TO	List	Obsolete field that is not used by ALM. Do not use.

7 Integration of PPM Center with Release Control or Change Control Management

Introduction to Integration of PPM Center with Release Control or Change Control Management

In this chapter, references to HP Release Control (the successor product to HP Change Control Management) also apply to supported versions of HP Change Control Management, except where distinctions between Release Control and Change Control Management are described as needed.

Integrating PPM Center with HP Change Control Management or its successor product, HP Release Control, enables you to link directly from a change request in PPM Center to associated impact analysis data in HP Change Control Management or HP Release Control. Based on the information provided in HP Change Control Management or HP Release Control, you can then decide whether to approve or reject the deployment of the change request.

For more information about the benefits of this integration, see *Integration of PPM Center with HP Release Control or HP Change Control Management* on page 21.

For information about the versions supported for integration, see the *System Requirements and Compatibility Matrix*.

No software needs to be installed on the HP Release Control or Change Control Management server to integrate PPM Center with HP Release Control or Change Control Management. However, see the *System Requirements and Compatibility Matrix*.

For references to more information about HP Release Control or HP Change Control Management, see *HP Release Control Documentation* on page 23 or *HP Change Control Management Documentation* on page 24.

Configuring HP Release Control for the Integration

To configure HP Release Control for integration, you must do the following:

- Configure the PPM Center Web Services adapter in HP Release Control
- Configure the JavaScript files in HP Release Control

For more information about the steps in this procedure, see the *Installation and Administration Guide*.

Before beginning this configuration, verify that Web services are enabled for use with PPM Center, as follows:

1. Stop the PPM Server.
2. Run the following script:

   ```
   sh ./kConfig.sh
   ```

3. Verify that the `ENABLE_WEB_SERVICES` parameter in the PPM Center `server.conf` configuration file is set to `true`.
4. Restart the PPM Server.

Configuring the PPM Center Web Services Adapter

To establish integration, you must configure the PPM Center Web Services adapter in HP Release Control to convert change requests that come from PPM Center to generic requests that HP Release Control can process, as follows:

1. Configure the PPM Center Web Services connector settings as described in the *HP Release Control Installation and Configuration Guide* or the *HP Change Control Management Installation and Configuration Guide.*

Before version 7.0, PPM Center was known as Mercury IT Governance Center or ITG. HP Release Control and HP Change Control Management software and documentation might still refer to PPM Center as IT Governance Center or ITG.

2. In the `itg-ws-adapter.settings` file, under `<request-type level="1">`, set the `requestTypeName` to the name of the PPM Center request type representing a PPM Center release, for example, **ALM - Release Management.**

3. In the `itg-ws-adapter.settings` file, under `<request-type level="2">`, set the `requestTypeName` to the name of the PPM Center request type representing a PPM Center change, for example, **ALM - Request for Change (RFC),** and set the `parentRequestTypeName` to the value of the `requestTypeName` in step 2.

Configuring the JavaScript Files

Configure the JavaScript files in HP Release Control or HP Change Control Management for the integration with PPM Center.

If PPM Center is (or will be) integrated with HP Universal CMDB as well, additional configuration steps may be required in HP Release Control or HP Change Control Management before configuring the JavaScript.

Refer to documentation for HP Release Control or HP Change Control Management, and contact HP Release Control Support as necessary.

Configuring PPM Center for the Integration

Before beginning to configure the integration as described in this section, make sure that ALM has been installed and initially configured as described in Chapter 2, *Installing and Setting Up ALM Software,* on page 25.

Establishing Server Connections for Supported Versions

Make sure that the HTTP port is open between the PPM Server and the HP Release Control or HP Change Control Management machines.

Verify that a supported version of HP Release Control or HP Change Control Management is installed and running (see the *System Requirements and Compatibility Matrix*).

Configuring the server.conf Parameter in PPM Center

For more information about the steps in this procedure, see the *Installation and Administration Guide*.

To be able to open HP Release Control from PPM Center as part of the integration, add and specify the parameter related to Release Control integration to the PPM Center `server.conf` configuration file, as follows:

1. Stop the PPM Server.
2. Run the following script:

   ```
   sh ./kConfig.sh
   ```

   Set the parameter and value as shown in the following table. (All parameter names begin with `com.kintana.core.server.` but that is not shown in the table.)

Parameter	Value
CCM_MACHINE_URL	URL of the Release Control server: `http://<CCM_Host>:<Port>/ccm/` where `<CCM_Host>` represents the host machine on which Release Control is running

3. Verify that the `ENABLE_WEB_SERVICES` parameter in the `server.conf` file is set to `true`.
4. Restart the PPM Server.

Using the Integration of PPM Center with Release Control

ALM provides the ALM - Releases portlet to facilitate the release request process (see *ALM - Releases Portlet* on page 84). If PPM Center and HP Release Control are integrated, for each release request you can click the **Click to View** link in the **View Impact** column in the portlet to log in to HP Release Control. When you log in, HP Release Control displays the **Overview** tab and other tabs. The information displayed for the selected change request includes the following, for example:

- The "service desk application" from which the request originated. From the perspective of HP Release Control, PPM Center is a service desk application in this context.
- On the **Request Details** tab, the request ID number of the original change request, with a link to open the change request in PPM Center.
- On the **Request Details** tab, the planned and actual start and end times for execution of the request.
- On the **Overview** tab, the number of configuration items (CIs) and applications that are affected by the request, with links that access the **Impact Analysis** tab, where details of the affected CIs and applications are displayed.
- On the **Collaboration** tab, the communication among users regarding action items.

If PPM Center is integrated with HP Release Control (or HP Change Control Management) *and* with HP Universal CMDB, you can click the **Launch HP Release Control** button in the **Impacted Configuration Items** section of an ALM - Request for Change (RFC) request in PPM Center to access HP Release Control.

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