# **HP Value Stream**

Software Version: 2.1

## Requirement to Deploy Concept and Configuration Guide

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## Part I: Requirement to Deploy Concept Guide

## Chapter 1: Requirement to Deploy Value Stream Concepts

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## Overview

The Requirement to Deploy (R2D) Value Stream provides a prescription for the key service life cycle data artifacts that IT needs to closely manage and define, build, test, and deploy an IT service. By understanding these artifacts and implementing the relationships between them, IT is finally equipped to control the quality, utility, schedule, cost, and sourcing of any aspect of a service that the business requests.

To accomplish this, the R2D Value Stream provides the framework for creating and sourcing a new service or modifying an existing service. The R2D Value Stream is initiated when it receives a demand signal from the business in the form of an approved IT contract and conceptual service blueprint from the Strategy to Portfolio (S2P) Value Stream. The R2D Value Stream ends when the requested service or modification is either deployed into production or packaged for future deployment through a Request to Fulfill (R2F) Value Stream catalog request.

The key inputs for the R2D Value Stream are:

- **IT contracts**, which originate from the business and are an output of the S2P Value Stream as a result of its Proposal Management function
- Conceptual service blueprints, which are generated from the S2P Value Stream Service Portfolio Management Functional Component
- Requirements, which are generated from the S2P Value Stream Demand Management Functional
   Component
- **Policies and standards**, which originate from the S2P Value Stream Policy Management Functional Component where the growing body of guidelines and best practice requirements are captured from IT and the business

The inputs above are assessed, rationalized, and elaborated with more detail and ultimately become content that is consumed and produced and passed on in the R2D Value Stream.

**Note:** For deployment and configuration instructions, see Part III:Requirement to Deploy Configuration Guide.

### Who Should Read This Guide

This guide explains the motivation to install and use the Requirement to Deploy Value Stream. It describes what the value stream implementation will achieve and describes the workflow between the products that comprise the value stream.

This guide is intended for:

- Project managers
- IT architects
- Developers
- Deployment technicians
- Quality engineers
- Release managers
- Presales and sales personnel
- PSO
- Anyone who wants to learn about a framework for creating, modifying, or sourcing a service

The information in this guide may duplicate information available in other Value Stream documentation, but is provided here for convenience.

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## Requirement to Deploy Value Stream Objectives

IT departments today experience challenges in meeting the expectations of the business in planning, developing, and delivering requested services. The R2D Value Stream is designed to ensure predictable, cost-effective, high quality results to the business while also promoting high levels of re-use, flexibility, agility, and collaboration across IT to support traditional and new methods for service creation and sourcing.

Key objectives to meet in support of giving the business what it needs are to:

## • Make service delivery predictable, even across globally dispersed teams, multiple suppliers, and multiple development methodologies

Services today are sourced or developed in cooperation with many different parties or configurations. All parties are working with their own processes and tooling. IT must be able to provide a good overview of the planned activities, should speak a common language with all parties involved, and should provide a methodology for how to achieve the best quality.

Cloud sourcing, Agile development, and other innovations have created the need for IT to be able to manage development and delivery of services in a hybrid environment. IT needs an R2D Value Stream framework that can accommodate everything, including:

- contracts for SaaS/subscription services
- fast, lightweight application releases, such as mobile applications or those built using Agile methodologies (for example SCRUM, extreme programming)
- traditional applications that utilize more structured project-driven release cycles
- everything in between

## • Ensure that each service release is high quality and fit for purpose, and meets customer expectations

IT still experiences too many incidents immediately after release of a service into production. IT must establish control over the quality of a service regardless of the number of vendors that are part of the delivery.

## • Optimize time spent on planning to drive predictability of delivery time, as well as accuracy to ensure the business gets what it asked for when it asked for it

Poor estimates at the start of an IT project on elements such as estimates for service design, development, and delivery ensure missing the delivery schedule later. Better estimates help drive better trends for "on-time delivery," but must be balanced with pressures of "Agile methods" and "continuous delivery" that shorten planning and development windows. When tracked and optimized, the trends on plan versus estimate from the cycles of the R2D Value Stream

plan/design/deliver can be used by the Strategy to Portfolio Value Stream for continuous improvement.

## • Standardize service development and delivery to the point where re-use of service components is the norm

IT continues to struggle to find ways to increase the quality and speed of service delivery while also lowering costs. In support of these efficiency and quality goals, IT must have a framework in which to drive the re-use of existing service components at multiple stages of the development life cycle across multiple services. IT must work successfully with multiple internal and external contributors and be able to integrate the data process and tools required to work with globally dispersed teams, outsourcers, traditional and Cloud-based suppliers. Furthermore, IT must maintain control of the governance of this service delivery value stream and be able to track and measure internal and vendor performance, costs, quality, and on-time delivery. The ability to re-use requirements, source code, documentation, test scripts, service monitors, and other artifacts of the service development life cycle is a key contributor to managing cost, increasing quality and predictability, and accelerating release cycles.

## Build a culture of collaboration between IT Operations and IT Development to support service release success

Both IT Development and IT Operations are paying a price for the poor collaboration that is the norm in many IT departments. Development organizations build and test services in a silo and surprise IT Operations by "throwing release packages over the fence" for immediate delivery. IT Operations may not manage the IT infrastructure to adapt for new standards and environments fast enough to meet the requirements of new developments from the Service Design and Development team. IT must make clear the role of IT Operations in the R2D Value Stream life cycle such that requirements and inputs from both sides are received at each stage of the service life cycle.

#### • Put rigorous structure in place to lessen the impact of the IT reality - high staff turnover

High turnover in IT means knowledge is lost and schedules are impacted—particularly in low cost labor markets where employers are suffering high employee turnover rates. The R2D Value Stream helps capture the knowledge that would otherwise be lost and cause schedules to be delayed.

#### • Drive predictable outcomes without driving out innovation

Innovation and process efficiency are two pillars of competitive advantage that IT departments bring to the business, yet these two pillars often have trouble co-existing. The emphasis on on-time project delivery tends to stifle innovation, creating a conflict between these two priorities. IT must continuously improve its ability to execute in such a way that on-time innovation is the norm. The R2D Value Stream identifies the core automation enablers and the key data exchanges required to accomplish this goal. For example, focusing efforts on automation of test, release, and deployment provides more time and resource for innovation in service design and development.

## Requirement to Deploy Value Stream Diagram

The following diagram illustrates the Functional Components and Artifacts that comprise the Requirement to Deploy Value Stream as described in version 1.2 of Reference Architecture.



## **Requirement to Deploy Functional Components**

The following functional components support the definition, development, and governance of the artifacts and service model entities utilized in the R2D Value Stream:

- **Project.** Receive IT contracts, coordinate the creation, and provide ongoing execution oversight of IT Projects aimed at the creation of new or enhancements to existing IT services.
- **Requirements.** Manage requirements through the life cycle of the service. Maintain traceability of each requirement to the original request that generated the demand throughout the service life cycle. Collect, refine, scope, and track progress of requirements.
- Service Design. Create the logical service blueprint and service design technical specifications for the service(s). Ensure these meet the requirements from the IT Contract, IT Project and/or demand, and make it perform against the Key Performance Indicators (KPIs), Key Risk Indicators (KRIs) and Service Level Agreements (SLAs). The output of the Service Design Functional Component is used by the Service Development Functional Component to guide, source, create, and secure the service.
- Service Development. Ensure that the service is developed in accordance with design specifications, organizational policies and standards, and both functional and non-functional requirements, so that the service can be operated successfully and in line with customer expectations and requirements. Produce and manage source and documentation that is stored in the definitive media library (DML).
- **Build.** Create, manage, secure, and track builds. Implement build automation. Manage the delivery of builds to Release Design Functional Component. Maintain builds in the DML.
- Release Design. Manage the service release, release packages, and service release blueprints for developing and delivering new or changed services into production, and facilitate a smooth transition to IT operations. Ensure the appropriate security measures (based on the risk posture of the service) are part of plan.
- Test. Plan and execute tests which ensure that the service will support the customer's requirements at the agreed service levels, including system/integration testing, user acceptance testing, performance testing, and load testing.
- **Defect.** Keep track of all defects, including their origin, status, importance, and relation to requirements and known errors.
- **Change Control.** Ensure standardized, auditable methods and procedures, with efficient and prompt handling of all changes to mitigate business risk and minimize impact.

The R2D Value Stream is process agnostic in that while methods and processes may change—for example, Agile, Waterfall, ITIL, Cobit, and so on—the functional components and data artifacts that comprise the value stream remain constant.

### **Requirement to Deploy Artifacts**

The Requirement to Deploy Value Stream contains both key and auxiliary artifacts that interact with the configuration items that comprise the physical service model.

The artifacts for this value stream are:

- **Build.** A build is the activity of assembling a number of configuration items to create part of an IT service. The term is also used to refer to a release that is authorized for distribution—for example, software build, server build, or laptop build. The build is part of the release package.
- **Defect.** A defect is a flaw in a component or system that can cause the component or system to fail to perform its required function, such as an incorrect statement or data definition. A defect, if encountered during execution, may cause a failure of the component or system.
- IT Project. An IT Project is a temporary endeavor with a defined beginning and end, undertaken to achieve an objective or outcome at a certain cost. In the context of this reference architecture, the typical project outcome is the delivery of a new service or modification of an existing service or application.
- Logical Service Blueprint. A logical service blueprint provides the structure, behavior, and design for the components that make up a new or changed service and describes how those components relate to one another. The logical service blueprint can be thought of as what is traditionally expressed in IT terms as the design. The logical service blueprint, together with the service release and service release blueprint, make up the logical service model.
- **Requirement.** A requirement is a formal statement of what is needed. Such a statement identifies a necessary attribute, capability, characteristic, or quality of a system for it to have value and utility to a user. Requirements are managed throughout the life of an IT service, not just through the duration of an IT Project. Requirements are increasingly framed as use cases, user stories, scenarios, or similar concepts and, rather than always in large "batches," may move independently through the R2D pipeline.
- Release Package. A release package is a collection of one or more builds, together with a service release blueprint, which describes how these builds can be deployed (as one build for the application server, one build for the database, and one for the front end). The release package is the collection of the builds and service release blueprint which shows how this can be deployed in various infrastructure environments. A release package might also contain other release objects that are not the result of a build process, such as training material, known errors, or run books.
- Request for Change. A request for change (RFC) is a formal proposal for a change to be made. It includes details of the proposed change, and may be recorded on paper or electronically. An RFC is an artifact that describes the intended addition, modification, or removal of anything that could have an effect on IT services. The scope should include all IT services, configuration items, processes, and documentation. Its intention is to make sure that anything that is needed is tracked to minimize the risk in operations.
- Service Design Package. The design package provides the necessary details that describe the

design of the IT service—at least sufficient to a given stage in its development. It may be iteratively refined.

- Service Release. The service release describes the characteristics associated with a specific release of a service. The service release not only contains the blueprints and packages, but also the support components of a release; such as value delivery chain activities, training, and documentation.
- Service Release Blueprint. A service release blueprint provides the description and procedures in
  order to activate, deploy, and operate a service and its underlying components, including
  applications and technology.
- Source. Represents all kinds of sources used within the build process or packaged into a build to make up an application or service. This may include, but is not limited to: build scripts, configuration files, localization files, code in programming languages, code of monitors, HTML, CSS, and JavaScript.
- Test Case. A test case is one or a set of test cases which contain a set of input values, execution preconditions, expected results and execution post conditions, developed for a particular objective or test condition, such as to exercise a particular program path or to verify compliance with a specific requirement. A test case is developed based on a requirement or a defect, and the same test case can be applied across many releases.

Part II: Requirement to Deploy Use Cases

## Chapter 2: Requirement to Deploy Use Cases

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### Overview

The use cases in this document describe the Requirement to Deploy Value Stream, which covers planning and designing a new or modified service, through development and testing, to release and deployment.

## Generic End-to-End Service Development Use Case

This section contains the following topics:

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### Overview

The Generic End-to-End Service Development Use Case illustrates the creation of a new service or modification of an existing one. The use case starts with the creation of a project; goes through service design, development and testing; and ends with releasing new content.

## Use Case Diagram

The following diagram provides a high level data flow for a generic end-to-end service development use case of the Requirement to Deploy Value Stream.



### Use Case Steps

- Project Manager receives IT contract and creates an IT Project. Creates corresponding Development Project/Releases. Specifications captured in the original project forwarded to Requirements Management system—preserving a link to enable review of the requirements status and progress at the project level.
- 2. Project Manager submits a request for change (RFC) for each service release. The RFC goes through the normal change process until approval.
- 3. Business Analyst logs requirements linked to Business Services. Refines and updates existing requirements; prioritizes.
- 4. IT Architect receives IT contract, conceptual service, and related requirements. Creates a logical service blueprint for new/modified service. Associates logical service blueprint with conceptual service, corresponding requirements, release entities, and design specifications.
- 5. Developer develops according to design specifications, including monitors. Manages source code.
- 6. Build Manager produces builds and runs unit testing. Automatically provisions and runs integration, performance, and user interface tests.
- Tester creates test plan and defines manual and automated tests, executes tests, and logs defects. Defects considered as known errors published in the Knowledge Management system. Tests linked to the requirements. Status and progress can be reported in the release level and the project level.
- 8. Release Manager tracks release progress, defines dependencies between releases, and assembles all release artifacts—deployment model, build artifacts, monitor templates, documentation, known errors, training assets, maintenance scripts, and so on. Defines schedule for deployment into production.

- 9. Deployment Manager deploys new release to production, including:
  - Monitors
  - Known errors to the knowledge base
  - Documentation and training assessment
  - New catalog entry (when relevant) and creates configuration items (CIs) in the CMDB for each instantiation
  - Updates the Service Portfolio with the status of the new available service
  - Updates the Request for Change

# Example: Delivering New Mobile Employee Expense Management Service

The Deliver New Mobile Employee Expense Management Service is a real life example of the generic use case. It describes the service life cycle from the early planning phases until the delivery phase.

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#### Overview

An Enterprise IT organization is delivering a new business service. To achieve this, a project needs to be created, planned, and executed. This includes defining and managing the project tasks, budgets, and schedules; developing the appropriate service components in accordance with business requirements; and deploying them to designated environments.



#### New Mobile Employee Expense Management Service Diagram

### Delivering the New Mobile Employee Expense Management Service

The service that is implemented is a new Expense Management service for employees, accessible from mobile devices. It is an IT service composed of several business applications—iOS and Android clients for supporting mobile device users, and application back end for management and administration. In addition, non-software components are needed to enable service operation; namely, knowledge briefs, known errors data for support personnel, and training videos for end users. The service also depends on two other services—an Employee Authentication Service and a SAP system with an expense tracking module.

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#### Step 1: Project Initiation

Step 1 creates and manages the project for the EEM service implementation—as preparation for the development stage.

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First, the Project Manager takes the lead by creating the new project in the HP Project and Portfolio Management (PPM) Suite. The project is based on an IT contract for an Expense Management service. That IT contract is the **what** of the service release and contains requirements, boundaries, resources, schedules, and so on. The project contains several tasks for project planning, application development, service deployment, and other activities.

After defining the tasks that require a change process for their implementation, the Project Manager creates requests for change (RFCs) in HP Service Manager (SM). At this stage, the required RFCs for this implementation are reviewed and the appropriate teams start working on them. As a result, the RFCs can be approved before the development is completed, thus avoiding delays in the deployment.

The RFCs contain a reference to the PPM Project, which allows the Change Manager to review a list of all changes created for the EEM development project simply by filtering. This is possible with the PPM – SM Integration ID#255 "Creating an SM RFC from PPM Project Task" on page 207.

#### Step 2: Service Design

Architects are creating a design for the EEM service based on an IT contract and associated requirements. The service is modeled using Enterprise Architecture tools, and this model is exported to UCMDB. UCMDB-PPM and UCMDB-SM integrations allow using this model as unified service context in PPM and SM.

Requirement to Deploy Concept and Configuration Guide Chapter 2: Requirement to Deploy Use Cases

The results of these actions are:

• a design of the EEM service modeled in UCMDB



• a project in PPM detailing the tasks and resources needed for successful EEM service implementation, with the SM RFCs that are related to the PPM project already in progress

Project and Portfolio Management Center User: Admin User   Sign Out								
Dashboard 🗸 Open 🗸 Search 🗸 Create 🗸 My Links 🗸 History 🗸 Help 🗸 🛊	Search menus or entities							
Dashboard - R2D > Search Projects > Project Overview (EEM) > View Work Plan (EEM) > Task Details - Deploy EEM service 0.9 to Production environment	< All Tasks >							
Task Details: 18 - Deploy EEM service 0.9 to Production environment								
Statistics       Name:     Status:     Sequence #:     % Complete:     Activity:       Deploy EEM service 0     Ready •     18     0	ription: by EEM service to Staging environment. This inc							
🗷 Mark task as milestone 🛛 🖉 This is a major milestone 🔲 Milestone automatically completes								
Project Path: EEM > EEM Release 0.9 > Deployment > Deploy EEM service 0.9 to Production environment								
Schedule         Resources         Notifications         Notes         References         Operational RFC         Hybrid Project	Quality							

#### Step 3: Release Planning

Step 3 covers the elaboration of requirements, assigning the requirements to appropriate application releases, and enabling tracking project progress.

In our example, the EEM service is comprised of three applications that need to be developed—the iOS client, Android client, and the back-end management application.

Different teams work on the development of each application, thus enabling different methodologies to be used. The EEM service components are developed either in Agile or in a classically developed fashion.

The iOS and Android client applications are developed using the Agile methodology, thus the releases of these applications are managed in Agile Manager.

On the other hand, the back-end application is developed using classic methodology, and its releases are managed in ALM.

In the PPM project, the development tasks are linked to both Agile Manager and ALM releases. This allows users to obtain release data and quality information directly from the PPM user interface.

The following integrations make this linkage possible:

 PPM – ALM ID#633 integration. For more information, see "Viewing ALM Quality Metrics in PPM" on page 72.

The following screen shot shows project task details with the focus on the **Quality** tab. In this screen shot, the tab shows defect summary graphs for a specific release linked to the task.



 PPM – AgM ID#634 integration. For more information, see "Viewing Agile Manager Release Information in PPM" on page 183.

The following screen shot shows a project task linked to an Agile Manager release. The sprint details are synchronized automatically.

Work Plan for EEM (Active : Health 🥯 Green )																		
View:	P	rinting	g View	, <b>T</b>	F	ilter f	or:	All T	asks					•	All	Tasks		
Expand	l to:	Lev	vel▼	<b>*</b>	•	ß	+	×	×	6	Ê	ШÜ	Ľ	R		Edit▼	Actions	•
Seq		F		Name	•											Status		Scheduled Duration
20						Desig	gn an	d Dev	velop	<b>)</b>						Active		74.00
21					Design and Develop EEM Android 1.0							Comple	ete	74.00				
22					EEM app for Android 1.0							Comple	ete	74.00				
23					Sprint 1						Comple	ete	10.00					
24							+	Sprin	nt 2							Comple	ete	14.00
29							E	Sprin	nt 3							Comple	ete	15.00
30								C	reate	e and	Sub	mit Ex	pense	e Rep	ort	Comple	ete	15.00
31								B	asic	expe	nse i	tem lo	gging			Comple	ete	15.00
32								C	omb	ine n	nultip	le exp	ense	items	int	Comple	ete	15.00

Requirements logged by the business analyst are elaborated and enriched, and assigned to the appropriate releases in ALM (for the back-end application) and Agile Manager (for client-side applications). The requirements and user stories define the action items for the development teams.

It is important to ensure the requirements are being created, prioritized, and linked to an appropriate application release.

During the work on requirements, Agile Manager and ALM tools are integrated and synchronized to allow information to exist in the ALM application for the advanced testing capabilities it provides.

The outcome of this step is:

- PPM project tasks are linked to the appropriate application releases.
- Requirements and user stories that define the application releases are elaborated and prioritized.

#### Step 4: Developing the Applications

Developers work on implementing the requirements and user stories from Agile Manager and ALM, while developing the three EEM service applications. When working on the source code, developers use HP Application Lifecycle Intelligence (ALI) capabilities to attach source code changes to appropriate context either in ALM or Agile Manager. The use of ALI enables developers to review the source code changes in the context of implemented user stories or fixed defects, thus enhancing the clarity of the development process.

· List of code changes linked to Requirements or Defects in ALM

👌 Lab Reso	*	Date/Time	Revision	Files	Lines	Message	Code	Has Defect
Testing	×	e de la constante de la consta						
a reating	-	8 6/24/2014 10:49:48	b8fda8df59c0	1	2	Incomplete - task REQ8: Enable storage of receipt scans on the server http:/	18	N
Performa	*	8 6/24/2014 1:13:18	1dd4e4f389b3	1	2	Incomplete - task REQ40: Support on-the-fly currency conversion http://myd	19	N
-		8 7/15/2014 3:42:53	00c7c20ca830	1	7	OPEN - task DEF14: Can't submit basic report http://myd-vm01999.hpswlab	24	Y
Defects		8 7/28/2014 5:34:46	ad571c6105a	2	9	FIXED - task DEF34: issue in translation http://myd-vm01999.hpswlabs.ada	25	Y
	~	8 7/29/2014 11:11:50	ef63d1283942	1	1	FIXED - task DEF45: Approval fails for 0 cost items http://myd-vm01999.hps	26	Y
the nevelopin	^	8/3/2014 4:01:39 PM	9fc4289b4714	1	7	Incomplete - task REQ57: Generate slips for taxes submission. http://myd-v	29	N
Builds		8/4/2014 4:40:31 PM	83b9234e731	1	7	Incomplete - task REQ40: Support on-the-fly currency conversion http://myd	30	N
Code Changes								

List of code changes linked to User Stories, Defects or Tasks in Agile Manager

Ø Agile Manager	
Release: EEM app for An 👻   Team: (Any team) 🖌   SCM Branches: (Any SCM branch) 🗸	
Source Code Summary Time period: All Sprints ~	3 lines 1 line 14 lines
Change Browse Code Change Log	
Show unassigned changes only 💆 Include builds from Android EEM Client Cl 🛩	Q
<ul> <li>Today (2 Change sets, by Admin@MYD-VM02499.hpswlabs.adapps.hp.com)</li> </ul>	
WARNING Build: #25 - Android EEM Client Cl from Sep-21-2014 12:06:21	
Admin@MYD-VM02499         Tile, T line         Sep-21-2014 12:03:53 Rev: bbd8b4ece821005978         NPROGRESS - task DEF38: Fail to send report when connected over wiff         Intps://agilemanager.         Int.saas.hp.com/agm/webui/alm/t146749715_hp_com/main/apm/#product/backlog_items/shared.update;entityTypeName=defect;entityId=38         Added       /app/srcidummy.bt	Show details
WXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
AdmingMYD-VM02493         1nie.ns         Sep-21-2010 4055516         Rev: 8931067ea9906195eca.         NEW - task REQ1029: Streamline the user interface (continued from         Fature #10280 for Android (client         Introductionager-         int.saas.hp.com/agm/webui/alm/t146749715_hp_com/main/apm/#product/backlog_items/shared.update;entityTypeName=requirement;entityId=102         9	Show details
Added /.project	

The build server compiles the applications so that planned testing activities on the specific build (manual and automatic) can begin. ALI allows build results to be viewed and shows details directly from ALM or Agile Manager. In addition, the tests and defects that are opened are linked to the specific build.

The deployment process becomes increasingly more complex and time consuming. Therefore, Codar is implemented to integrate with the build system, automatically provision the environment, and deploy build results. This enables the development and testing teams to commence with verifying that the software is being built according to a defined quality standard. When the testing on various levels is complete, a decision is made to promote the software build further through the release pipeline as it goes through more and more thorough testing types.

In this phase, defects are reported in ALM. Some of these defects are fixed in future builds, while others are published as known errors to SM for Help Desk agents to be aware of.

In parallel with managing the development of the applications related to the EEM service, work is being done to provide additional content that is also a part of the EEM service. Training videos are being created, help desk documentation is being written, and a set of known errors is being gathered and published in SM. These additions provide the necessary information for future users of the EEM service in the organization.

The outcome of this phase is to have a build ready for deployment for all three applications, with some defects and known errors that can be addressed in future releases.

#### Step 5: Deploying the Service

Service deployment means to deploy all of the help desk documents, training videos, known errors, and other components of the service, and make them available to the users.

The business applications that the service depends on should be deployed to appropriate environments when desired quality is achieved. The most advanced phase is when the build is ready for deployment to production. Depending on the nature of the application, it can end with either:

• a deployment to production environment using Codar, as in the case of the Expense Management web application

🅢 HP H	lelion Codar					Help	admin 👻
< Topol	ogy Designs / Design Det	ails					
EE	M Application or	vCenter	1.2.0				Published
Overview	Editor Profiles	Validation	Versions	Test	Packages		
PRODUCT	ION • ACTIVE	¥			Search		Q
PRODUCT	TION (1)						
Y	<b>Production Ready p</b> Description: Deployed Instances: 0 Last Updated:01/14/2015	ackage 05:38:38			Sta	te: ACTIVE Deploy Deploy	ject
Create							

or

 a publication to the IT service catalog where a service offering is created in CSA based on a Codar design and end users can order it from the IT self-service portal—for instance, the mobile client applications for the Expense Management system that the employees use



For more information, see HP Codar version 1.00 Concepts Guide.

The RFC for complete service deployment, which was created in the project planning stage, ensures that the approvals from the necessary personas are there before the deployment occurs. Then after it is implemented, all components of the service—both software and non-software—are in place. The UCMDB is updated with new configuration items and relations when service components (such as servers and applications) are discovered.



The outcome of this final phase is that the new EEM service is deployed and operational. The appropriate PPM project task for the deployment is updated with closure comments from the implemented RFC, thus closing the feedback loop.

Project Path: SH testing >	PPM test						
Schedule	Resources	Notifications	Notes	References	Operational RFC	Hybrid Project	Quality
Change Number:		C16059					
Change Status:		closed					
Closure Code:		1 - Successful					
Closure Comments:		OO flow to depl	oy the EEM IOS application	was completed Successful	ly on the production environ	ment. IOS application is now a	vailable.
Change Last Update Date:		9/21/14 4:44 PM	I				
Operational RFC has been s	successfully created.						

## DevOps Use Cases

The "Generic End-to-End Service Development Use Case" on page 21 focused on a complete service. These use cases focus on parts of the complete service.

This section contains the following topics:

Overview	33
Build Software Use Case	33
Deploy Software to Dev/Test Use Case	36
Deploy Software to Staging/Production Use Case	39

### Overview

The DevOps Use Cases illustrate how to develop and deploy software functionality from development to operations in a maximally automated model, with sustainable velocity and demonstrating effective feedback.

### Build Software Use Case

This section contains the following topics:

Use Case Steps	33
Example: Building Software	34

#### Use Case Steps

- 1. Developer checks in code to the Source Control Management system.
- 2. This triggers the workflow to start the new build. This may be done immediately or on a batch basis (that is, the **nightly build**).
- 3. The **Build Management** system, performing a continuous integration, runs tests which include unit tests, as well as external static analysis.
- 4. Test execution may result in defects being logged.
- 5. If the build succeeds, the built package is stored in a package repository.

#### Example: Building Software

This example covers a web application for an Expense Management system that is used by payroll employees to review and approve expenses submitted by employees from their mobile devices.

## To develop and build the web application for the Employee Expense Management system:

1. Developer reviews development task and implements a requirement and/or fixes a defect in their integrated development environment (IDE). Integration of IDE and ALM or Agile Manager allows review and update of the requirements/defects/tasks from within the IDE.



2. Modified code is committed to the Source Code Management (SCM) with an appropriate commit message, which enables linking the code change to a specific defect/requirement (for ALM) or development task (for Agile Manager).

The following screen shot shows a commit message by the developer.



3. Each night a build job is triggered automatically—pulling the latest source code from SCM and building the web application.



4. Basic tests, such as unit tests, are executed and, if successful, the build is stored in an artifact repository such as Nexus, as shown in the following screen shot:

Welcome	Repositories				
😤 Refresh 🗋 User Mana	ged Repositories -			Q,	
Repository 🔺	Type Health Ch	eck Format	Policy	Repository Status	Repo.
Public Repositories	group	maven2			http 🗠
3rd party	hosted	maven2	Release	In Service	http
Apache Snapshots	proxy	maven2	Snapshot	In Service - checking remote	http
Central	proxy	maven2	Release	In Service - checking remote	http
• • • • • • • • • • • • • • • • • • •			<u>.</u> .		
3rd party					
Browse Index Browse	Storage				
BRefresh Path Lookup:				X P	
1					

## Deploy Software to Dev/Test Use Case

This section contains the following topics:

Use Case Steps	
Example: Deploying Software to Dev/Test	

#### Use Case Steps

- 1. The **Deployment** process is initiated manually or automatically—for example, from a successful build.
- 2. The built package is pulled from the package repository and applied to the target system.
- 3. (Optional) Monitors are also deployed.
- 4. Developer or tester executes tests against the target system.
- 5. Test execution may result in defects being logged.

#### Example: Deploying Software to Dev/Test

Continuing from "Example: Building Software" on page 34, the development team modifies the source code, which results in a new build being created and ready for additional testing at varying depth levels.
## To deploy the software to dev/test:

1. During the initial phases of the project, application architect uses Codar to create the design for application deployment, which will be used to deploy the application builds automatically.



2. Build manager configures Jenkins plug-in for Codar, to create a new build package for the Expense Management web application when a new build is completed successfully, and to deploy it on a Development environment. 3. Members of the testing team can use Codar to deploy additional environments of the same build, and use those to execute different types of tests (functional, performance, and others). ALM integrations with several testing tools—such as UFT for functional testing and PC for performance testing—are leveraged to test the software from different perspectives.

🥢 НР Н	Helion Co	dar					Help	admin 🕶
< Topol	ogy Designs	/ Design Deta	ils					
EE EE	M Applio	cation on	vCenter	1.2.0				Published
Overview	Editor	Profiles	Validation	Versions	Test	Packages		
ALL STAG	ES 🔻	ACTIVE	T			Search		Q
DEVELO	PMENT (17)						M	ore
Д	Build 52 Description Deployed Ir Last Update	: 1stances: 1 ed:03/11/2015	03:32:02		State: De	ACTIVE ploy Promote	Dele	te
Д	<b>Build 51</b> Description Deployed Ir Last Update	: nstances: 0 ed:03/11/2015	03:21:23		State: De	ACTIVE ploy Promote	Dele	te

 As part of preparation for production, HP Unified Functional Testing (UFT) tests that were used for testing can be reused (with modifications) as HP Business Process Monitor (BPM) scripts to monitor the application behavior. 5. As tests are written based on specific requirements, their execution affects the requirements coverage, as illustrated in the following Requirements Coverage Graph. Test execution results are stored in ALM, and defects are logged accordingly.



## Deploy Software to Staging/Production Use Case

This section contains the following topics:

Use Case Steps	
Example: Deploying Software to Staging/Production	40

## Use Case Steps

- 1. The **Deployment** process is initiated manually or automatically—for example, from a successful build.
- 2. A proposed change is submitted to the **Change Control** system.

Note: This may be a standard change and approved in an automated manner.

- 3. Upon RFC approval, the built package is pulled from the package repository and applied to the target system.
- 4. Monitors are deployed.
- 5. The CMDB is updated as required with any new configurations and dependencies or originating from the package manifest.
- 6. In the staging phase, testers execute system-level, integration, and/or performance tests against the target system.
- 7. In the staging phase, test execution may result in defects being logged.

## Example: Deploying Software to Staging/Production

The build package of the Expense Management web application, which was tested extensively while in the Testing phase, is ready to be deployed to the Staging environment.

## To deploy software to staging/production:

1. QA manager approves that the build satisfies the quality requirements and the build package is promoted to staging in Codar.

TESTING	(1)				
	<b>Build 54</b> Description: Deployed Instances: 1 Last Updated:03/18/2015 01:09:29	State: ACTIVE Deploy	Promote	<b>Reject</b>	Delete
STAGING	(0)				

An RFC is submitted in HP Service Manager (SM) and needs to be approved before the deployment, which consumes substantial resources and affects the work of multiple teams.

😫 Cancel 💾 Save & Exit 💾 Save 🛗 Apply Ter	mplate More -		
Change - C16149			
Title	* Deploy EEM Service 1.2 to Staging environment		
Change ID	C16149	Category	Normal Change
Phase	Registration and Categorization	SubCategory	Major
Approval Status		Change Model	Normal Major RFC
Alert Stage		Impact	* 2 - Site/Dept
Change Requester	* FALCON, JENNIFER	C Urgency	* 2 - High 🗢
Requested End Date	* 03/12/15 07:41:00	Priority Priority	
Reason for Change	* Business Requirement	Risk Assessment	▼
Service	* EEM	Change Coordinator	i'
Affected Configuration Item		Change Owner	<u> </u>
		Assignment Group	đ
		Assignee	Ĩ
Loc ation		External Reference	
Description	* Deploy EEM Service 1.2 to Staging environment		
Effect of not Implementing	* Delays for production implementation.		

2. When RFC is approved, the build package is deployed automatically on the Staging environment.

🕼 HP Helion Codar		Help admin 🕇
Correction of the second se		
<b>EEM Application on vCenter</b> 1.3.0		
Overview Editor Profiles Validation Versions Test Packages		
ALL STAGES   ACTIVE	Search	Q
Build 55     State: ACTIVE       Description:     Deployed Instances: 0       Last Updated:03/26/2015 09:11:55     Deploy	Promote Re	ject Delete
STAGING (1)		
Build 54 State: ACTIVE Description: Deployed Instances: 0 Last Updated:03/18/2015 01:09:29	Promote Re	iject Delete
PRODUCTION (0)		
Create		

Usually this is the phase when User Acceptance Tests and Performance Tests are executed. In addition, at this phase the automated deployment of monitors is tested to ensure that the application will be monitored appropriately from the moment it is deployed.

- 3. Once all of the tests are complete on the staging environment, and the results are satisfactory, preparation to production deployment begins:
  - a. An RFC is submitted in SM, reviewed, and approved.
  - b. The time window for change implementation is scheduled.
  - c. The build package is promoted to the Production phase in Codar.

	Ruild 54	
	Description	
$\bigtriangledown$	Description:	Deploy Promote Reject Delete
$\mathbf{v}$	Deployed Instances: 0	
	Last Updated:03/18/2015 01:09:29	Promote

- d. Non-software components which accompany the release are prepared for distribution.
- 4. When the time to deploy the application to production comes, the automatic deployment is triggered.

Once it is successfully completed:

- QA approves that all functions are operating normally,
- Operation's team confirms successful deployment of monitors,
- HP Universal CMDB (UCMDB) is updated with new configuration items and relations,
- RFC is updated and closed.

Change - C16150											
Change ID	C16150				Category	Norn	nal Change				
Phase	Closure			s	SubCategory	Мајо	r				
Approval Status	approved			Ch	nange Model						
Alert Stage						D	d				
Review Results											
Olasura Os da											
Closure Code	1 - Successful										
Closure Comments	The service components v expected.	vere deployed	successfull	y. QA valida	ated the produ	uction (	environment fund	tions as	5		
Updates Change Details	Build and Test Deployme	nt Backout /	Approvals	Workflow	Affected Serv	/ices	Associated CIs	Tasks	Related Re	cords 🖣	1
Ті		to Production	onvironmo	ot							
	Deploy EEW service 1.0	J to Floduction	environme	m							

# Part III: Requirement to Deploy Configuration Guide

# Chapter 3: Requirement to Deploy Value Stream Configurations

## This chapter includes:

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HP Products	45
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HP Project and Portfolio Management – Overview	52
HP Application Lifecycle Management – Overview	. 52
HP Service Manager – Overview	. 53
HP Universal CMDB – Overview	54
HP Agile Manager – Overview	. 54
HP Operations Orchestration – Overview	55

# Overview

The balance of this guide provides the information necessary to implement the integrations needed to achieve the preferred IT management ecosystem. The user decides how many configurations to implement in order to achieve the management level required.

Feel free to use the entire solution, a mix of the various products, or just use a single product to address your management needs.

**Note:** Throughout this document, italicized text enclosed in angle brackets (for example, "<your\_ server\_name>") indicates replaceable text.

# **HP Products**

To utilize the complete end-to-end Requirement to Deploy Value Stream, the following products are recommended. These products must be installed and fully functional. Although we recommend using only HP tools, based on your requirements, you can use whatever products and integrations you want or need—including any third-party tools of your choice.

**Note:** Subsets of the following products can also be used. Keep in mind that the functionality of the Requirement to Deploy Value Stream is dependent on the products you choose to employ.

- **HP Universal CMDB.** Server is installed. Data flow probe is connected and running (different server than HP Business Service Management server).
- HP Application Lifecycle Management. Server, client, and synchronizer package are installed.

HP offers a wide array of testing tools that can be integrated with ALM to cover various aspects of the testing process—for example:

- HP ALM Performance Center
- HP United Functional Testing
- HP Sprinter
- HP LoadRunner
- **HP Service Manager.** Server, Client, Web Tier, and Knowledge Management are installed and running.
- HP Operations Orchestration. Central and Studio are installed and available for use.
- HP Project And Portfolio Management Center. Server is installed.
- HP Agile Manager. Agile Manager is managed by HP via a Software-as-a-Service model.
- **HP Business Service Management.** Server is installed with EUM model enabled, and integrated with SiteScope.
- **HP SiteScope.** Server is installed and integrated with BSM and CODAR.

**Note:** Third-party tools are used in this guide for example purposes only.

# Requirement to Deploy Value Stream Products and Functional Components

The following diagram illustrates the mapping between the products and the functional components of the Requirement to Deploy Value Stream:



# HP Products and Related Integrations

The following diagram displays how HP Products integrate in the Requirement to Deploy Value Stream Reference Implementation:



# Hardware and Software Requirements

This section contains the following topics:

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Enterprise Hardware and Software Requirements	. 50
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## Supported Versions

Note: For the hardware and software requirements, see the product documentation.

Product	Version	Instructions		
Project and Portfolio Management	<ul> <li>9.30 or later</li> <li>Recommended. 9.30</li> </ul>	For installation instructions, see the HP Project and Portfolio Management version 9.30 Installation and Administration Guide.		
Service Manager	• 9.32 or later Recommended. 9.32	For installation instructions, see the HP Service Manager version 9.30 Interactive Installation Guide to install version 9.30. Then upgrade to version 9.3		
	<b>Note:</b> In this document, Service Manager is installed with the Process Designer Content Pack. This is optional and is available from HP Live Network.	<ul> <li>using the following guides:</li> <li>HP Service Manager version 9.32 Release Notes</li> <li>Application Compatibility Matrix</li> </ul>		
Universal CMDB	<ul> <li>10.10 or later</li> <li>Recommended. 10.10</li> </ul>	For installation instructions, see the HP Universal CMDB version 10.10 Interactive Deployment Guide.		
Operations Orchestration	<ul> <li>10.02 or later</li> <li>Recommended. 10.02</li> </ul>	For installation instructions, see the HP Operations Orchestration version 10.02 Installation Guide.		
Application Lifecycle Management	<ul> <li>11.52 or later</li> <li>Recommended. 12.01</li> </ul>	For installation instructions, see the HP Application Llfecycle Management version 11.52 Installation installation and Upgrade Guide.		

Product	Version	Instructions
HP Helion Codar	<ul> <li>1.00 or later</li> <li>Recommended. 1.00</li> </ul>	For installation instructions, see the HP Helion Codar version 1.00 Installation and Configuration Guide.
Business Service Management	<ul> <li>9.24 or later</li> <li>Recommended. 9.24</li> </ul>	For installation instructions, see the HP Business Service Management version 9.24 BSM Installation Guide.
SiteScope	<ul> <li>11.24 or later</li> <li>Recommended. 11.24</li> </ul>	For installation instructions, see the HP SiteScope version 11.24 Deployment Guide.

## Note:

- HP Application Lifecycle Intelligence (ALI) supports third-party products such as Source Code Management (SCM), Build Manager (BM), and Integrated Development Environment (IDE). For more information, see the *HP Application Lifecycle Intelligence version 2.7 User Guide*.
- Make sure that each application you install is up and running before you perform any configuration steps.

## Enterprise Hardware and Software Requirements

**Note:** The following list details the deployment environments that have been rigorously tested by HP quality assurance personnel.

For the complete listing of hardware and software requirements, see the relevant Support Matrix for each product.

- HP Project and Portfolio Management. For more information, see the HP Project and Portfolio Management Center version 9.30 System Requirements and Compatibility Matrix for PPM Center.
- HP Service Manager. For more information, see the HP Service Manager version 9.3x Compatibility Matrix for SM Applications Contents and HP Service Manager version 9.32 Support Matrix.
- **HP Universal CMDB.** For more information, see the *HP Universal CMDB version 10.10* Support Matrix.
- **HP Operations Orchestration.** For more information, see the *HP Operations Orchestration* version 10.02 System Requirements.
- **HP Application Lifecycle Management.** For more information, see the *HP Application Lifecycle Management version 11.52 System Requirements*.
- HP Helion Codar. For more information, see the HP Helion Codar version 1.00 Support Matrix.
- HP Business Service Management. For more information, see the HP Business Service Management version 9.24 BSM System Requirements and Support Matrixes.
- **HP SiteScope.** For more information, see the system requirements and support matrices in the *HP SiteScope version 11.24 Deployment Guide*.

## Additional Online Resources

Troubleshooting & Knowledge Base accesses the Troubleshooting page on the HP Software Support web site where you can search the Self-solve knowledge base. Choose Help > Troubleshooting & Knowledge Base. The URL for this web site is http://h20230.www2.hp.com/troubleshooting.jsp.

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

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

To find more information about access levels, go to: http://h20230.www2.hp.com/new\_access\_levels.jsp

To register for an HP Passport user ID, go to: http://h20229.www2.hp.com/passport-registration.html.

**HP Software Web site** accesses the HP Software Web site. This site provides you with the most upto-date information on HP Software products. This includes new software releases, seminars and trade shows, customer support, and more. Choose **Help > HP Software Web site**. The URL for this Web site is www.hp.com/go/software.

# HP Project and Portfolio Management – Overview

HP Project and Portfolio Management (PPM) Center standardizes, manages, and captures the execution of project and operational activities.

Most PPM Center users work in the standard user interface, which appears as a collection of specialized Web pages. These pages open in a Web browser and offer you a customized view into PPM Center. From these pages, you can run reports, submit requests, and create projects. You can also view and use the PPM Dashboard. The PPM Dashboard is a real-time Web page view into your PPM Center system. Using portlets, you can view important information about your work environment, from the status of requests assigned to you to comparisons between current projects and staffing profiles.

In addition to the standard user interface, some users require the PPM Workbench to accomplish certain tasks. Unlike the Web pages, which open in a Web browser, the PPM Workbench opens in its own window. Designed for more advanced users, the PPM Workbench is where much of PPM Center is configured. Configurators can use the PPM Workbench to define workflows, create request types, set up automatic notifications, as well as a host of other tasks and procedures.

# HP Application Lifecycle Management – Overview

HP Application Lifecycle Management (ALM) empowers organizations to manage the core application life cycle, from requirements through deployment, granting application teams the crucial visibility and collaboration needed for predictable, repeatable, and adaptable delivery of modern applications.

ALM simplifies and organizes application management by providing you with systematic control over the process. It helps you create a framework and foundation for your application life cycle management workflow in a central repository.

HP Application Lifecycle Management provides:

## Release Tracking

ALM features a system for organizing and tracking application releases, enabling you to align your business priorities and quality expectations with your project requirements, tests, and defects. ALM helps you make more informed release decisions with real-time key performance indicators (KPIs).

## • Requirements and Tests

ALM helps you define and maintain a repository of requirements and tests. Requirements help ensure that business and testing needs are covered. Tests can then be automatically generated from these requirements to ensure the correct aspects of the application are being tested. To meet the various goals of a project, you can organize the tests in your project into unique groups. ALM provides a method for scheduling and executing tests, collecting test results, and analyzing the data.

## Defects Tracking

Analyzing defects and defect trends helps you make effective **go/no-go** decisions. ALM features a system for tracking defects, enabling you to monitor defects from initial detection until resolution. It also allows you to share defects across projects, reducing risk by helping developers find, prioritize, and resolve defects sooner. A centralized defect repository also enables reporting of aggregated defect status and trends across projects.

## Analysis Tools

The ability to track progress throughout the application life cycle process is vital to predictability. ALM provides tools for analyzing each phase of the process, including specific instrumentation for Agile projects (for example, burn-up and burn-down charts). You can generate interactive graphs that demonstrate a wide variety of business performance perspectives, or define reports with any cross section of data. You can also monitor multiple business metrics by arranging multiple graphs alongside each other in a single view.

## Asset Libraries

ALM supports sharing and reuse of asset libraries across projects. Sharable libraries help you manage initiatives with multiple applications to verify that changes to one application do not negatively impact another application. They also help to drive greater consistency and repeatability by empowering asset reuse. Specific changes can be applied to the shared assets for each project while allowing the library to maintain its integrity.

## ALM Integrations

ALM offers integration with HP tools (for example, Unified Functional Testing and LoadRunner) as well as third-party and custom testing tools, and requirement and configuration management tools. ALM communicates with the testing tool of your choice, providing you with a complete solution to fully automated application testing.

ALM supports you through all phases of managing the application life cycle. By integrating the tasks involved in application management, ALM enables you to better align IT with your business needs, and optimize efficiency.

# HP Service Manager – Overview

HP Service Manager (SM) is a comprehensive and fully-integrated IT service management software suite that enables you to improve service levels, balance resources, control costs, and mitigate risk exposure to an organization. Service Manager enables you to manage services using a "life cycle" approach, with consistent improvement built into the governance model.

# HP Universal CMDB – Overview

HP Universal CMDB (UCMDB) consists of a rich business-service-oriented data model with built-in discovery of configuration items (CIs) and configuration item dependencies, visualization and mapping of business services, and tracking of configuration changes.

UCMDB enables you to manage all the CIs contained in a managed world. A managed world refers to any self-contained environment that can be described using a topology model (defined with HP's Topology Query Language (TQL)). For example, the IT infrastructure of a large business represents a managed world, where the topology comprises multiple layers such as networks, protocols, databases, operating systems, and so on. You manage views to view the information in exactly the format you require.

Additionally, the information contained in the results of each TQL is updated automatically with the latest data entering the configuration management database (CMDB). As a result, once a TQL and View have been defined, they continue to provide up-to-date information about the current state of your managed world. Views appear in multi-level maps that enable you to identify key CIs, as required. You can also create reports (in HTML, Excel, or table format) about information collected by the system.

# HP Agile Manager – Overview

HP Agile Manager (AgM) is an Agile management solution for organizing, planning, and executing Agile projects. It can support single teams or multiple, geographically distributed teams across an enterprise. Agile Manager provides:

- A drag-and-drop interface that enables easy release and sprint planning, task allocation, and capacity management across teams and individuals
- Task and release planning boards that give all team members ready insight into the entire project landscape, the flow of work, and potential issues or bottlenecks
- Real-time feedback on progress through highly customizable dashboards, metrics, and KPIs, minimizing administration while increasing predictability
- Advanced development analytics that aggregate source code and build information to surface meaningful insights into application changes, allowing for precise risk analysis and more informed decisions

# HP Operations Orchestration – Overview

HP Operations Orchestration (HP OO) is a system for creating and using actions in structured sequences (called Ops flows, or flows) which maintain, troubleshoot, repair, and provision your IT resources by:

- Checking the health of, diagnosing and repairing, networks, servers, services, software
   applications and individual workstations
- Checking client, server, and virtual machines for needed software and updates, and, if needed, performing the necessary installations, updates, and distributions
- Performing repetitive tasks, such as checking status on internal or external web site pages

The two main components of HP OO are Central and Studio.

#### HP OO Central

This is a web-based interface in which you can:

- Run flows
- Administer the system
- Extract and analyze data resulting from the flow runs

#### **HP OO Studio**

This is a standalone authoring program in which you can:

- Create, modify, and test flows, including flows that run automatically, as scheduled
- Create new operations

You can create operations within Studio and run them in Central. You can also create operations that execute outside of Central in a remote action service (RAS). You do so in a development environment that is appropriate to the task, then associate the code you have created with an operation that you create in Studio.

• Specify which levels of users are allowed to run various parts of flows

# Chapter 4: Creating ALM Requirement/Defect from PPM Request

#### This chapter includes:

Overview	
Setting up the PPM - ALM Configuration	57
Verification	

# Overview

This chapter describes how creating a request in the HP Project and Portfolio Management (PPM) Demand Management Module automatically creates a defect or requirement in the HP Quality Center (QC) or HP Application Lifecycle Management (ALM) project with which the PPM Center request type is integrated. For example, a PPM Center request of type **Defect** could create a defect in a Quality Center or ALM project, whereas a PPM Center request of type **RequestForChange (RFC)** could create a requirement in a Quality Center or ALM project.

In the context of the Requirement to Deploy (R2D) Value Stream, this integration enables receiving inputs from the Strategy to Portfolio Value Stream in the form of requirements or defects.

For more information, see Integration ID#19: Application Lifecycle Management – RFC to Requirement/Defect (PPM – QC) in **HP Software Solutions Now**.



The following diagram illustrates the relationship between the products for this integration:

# Setting up the PPM - ALM Configuration

This section contains the following:

Prerequisites	57
Configuring PPM Center	58
Configuring Workflow for Request to Requirement Integration	66

## Prerequisites

The following products must be installed:

1. PPM is installed with the ALM Content Bundle. If not, install the ALM content bundle on your PPM.

For more information, see Chapter 2, "Installing and Setting Up ALM Content Bundle" in the *HP Project and Portfolio Management Center version* 9.30 *HP Solution Integrations Guide*.

2. The ALM Connectivity Add-in file is running on the ALM server.

For more information, see Chapter 5, "Integrating PPM Center with HP Quality Center, Using ALM > Configuring Integration with HP ALM Version 11.00 and Later > Installing the PPM Center-ALM Integration Tool (for HP ALM Version 11.50 and later) > Requirements for the PPM Center-ALM Integration Tool > Client-Side Requirements" in the HP Project and Portfolio Management Center version 9.30 HP Solution Integrations Guide.

3. The PPM Center-ALM Integration Tool is running on the PPM server.

For more information, see Chapter 5, "Integrating PPM Center with HP Quality Center, Using ALM > Configuring Integration with HP ALM Version 11.00 and Later > Installing the PPM Center-ALM Integration Tool (for HP ALM Version 11.50 and later) > Download and Install the PPM Center-ALM Integration Tool" in the HP Project and Portfolio Management Center version 9.30 HP Solution Integrations Guide.

**Note:** If the integration tool is not working, you can manually add the fields to Quality Center. For more information, see *How to enable PPM related OOTB fields in QC project for ALM integration*.

## **Configuring PPM Center**

## To configure the PPM Center:

- 1. Log on to PPM Center with administrative privileges.
- 2. From the menu bar, select **Open > Administration > Integration**.

The Integration Configurations screen opens.

3. In the navigation pane, select Manage Application Change.

The Manage Application Change panel opens.

 In the Server Configuration Details section, from the Add Integration Configuration drop-down list of available request types, select either ALM – Defect Template with Quality Center Integration or ALM – Request for Change (RFC) Integration and click Add Integration Configuration.

Complete the following tasks for each request type:

Note: The tasks for both ALM – Defect Template with Quality Center Integration and ALM – Request for Change (RFC) Integration must be completed. The order this is done in does not matter, but the tasks for both request types must be completed in an R2D environment.

- ALM Defect Template with Quality Center Integration.
  - i. The Configure QC/ALM Integration for Request Type: ALM Defect Template with Quality Center Integration section opens showing **Step 1: Configure Server Details**.

In this example, the selected request type ALM – Default Template with Quality Center Integration includes the **QC/ALM Defect Information** field group. It is associated with an HP ALM defect, as indicated in the **Entity Type** field. For a new integration, the status is **Disabled** by default.

Server Configuration Details: Con	figure for Request Type: ALM - Defect Template	with Quality Center Integration		
ALM - Defect Template with Quality C	ienter Integration 🔻 🕂 Add Integration Configur	ration		
Step 1: Configure	Server Details	Step 2: Map PPMQC/ALM Fields	>	Step 3: Complete Configuration
Status:	Disabled			
*QC/ALM Version:				
*QC/ALM Server URL:		]		
*QC/ALM Username:	admin			
*QC/ALM Password:				
*QC/ALM Server Time Zone:	GMT -12:00 Daylight Savings Time Not Used 🔹	]		
*QC/ALM Domain:	•	Get Domains		
*QC/ALM Project:	•			
*Entity Type:	Defect			
Integration Options: Creating a PPM Center request aut Creating a QC/ALM entity automati Creating a PPM Center request aut	omatically creates an associated QC/ALM entity cally creates an associated PFM Center request omatically creates an associated QC/ALM entity, and	vice versa		

Complete the fields using the following information and click Next.

Field Name	Description
*QC/ALM Version	Select your HP ALM version from the drop-down list of supported versions.
*QC/ALM Server URL	URL of the HP ALM server in the following format: http:// <alm_server_host>:<port>/qcbin/ Note: HTTPS is supported. Use https in the URL as needed.</port></alm_server_host>
*QC/ALM Username	User name used to access HP ALM.
*QC/ALM Password	Password for the QC/ALM user name.

Field Name	Description
*QC/ALM server time zone	Time zone for the ALM server. Required to ensure that the integration correctly manages updates between fields mapped as bidirectional between PPM Center requests and associated HP ALM defects. Default is the time zone for the PPM Server.
	Note: For some of the GMT time zones, only the <b>Daylight Savings</b> <b>Time Not Used</b> option is available. Time zone names that include city names are not available due to changes with a third-party product. For example, you may only see the <b>GMT +9:00 Daylight</b> <b>Savings Time Not Used</b> option, which means that the <b>GMT +9:00</b> (Asia/Yakutsk) Yakutsk Time option is not available.
*QC/ALM Domain	Domain on the HP ALM server to use for the integration.
	Note: To retrieve the set of domains, click Get Domains.
*QC/ALM Project	HP ALM project to use for the integration.
	Note: List is populated when QC/ALM Domain is selected.
*Entity Type	HP ALM entity type to be used for integration— <b>Defect</b> .
Integration Options	Additional options for ALM defect template with a QC integration. Select one of the following three values:
	<ul> <li>Creating a PPM Center request automatically creates an associated QC/ALM entity.</li> </ul>
	Creating a QC/ALM entity automatically creates an associated PPM Center request.
	Creating a PPM Center request automatically creates an associated QC/ALM entity, and vice versa.

ii. The Configure QC/ALM Integration for Request Type: ALM – Defect Template with Quality Center Integration section opens showing **Step 2: Map PPM – ALM Fields**.

LM - D	efect Template with Quality Center Integration	Add Integration Configuration					
	Step 1: Configure	Server Details		Step 2	: Map F	PMQC/ALM Fields	
	Step 3: Comple	te Configuration					
C/ALI	M Synchronization Control Field: 🥯						
eld M	apping:		DDM Dequest Fields				
*Dete	cted By(detected-by)	<ul> <li>% Complete: (REQ.PERCE</li> </ul>	NT COMPLETE)	•		Map Fields	
Curre	nt Field Mappings:						
	QC/ALM Field	PPM Field		Control			
×	Detected on Date (creation-time)	Created On: (REQ.CREATION_DATE)		PPM	•		
×	Summary (name)	Summary: (REQ.DESCRIPTION)		Bidirectional	•		
×	Severity (severity)	Severity: (REQ.SEVERITY)		Bidirectional	¥	Map Values	
×	Detected By (detected-by)	Created By: (REQ.CREATED_BY)		QC/ALM	•		
×	Priority (priority)	Defect Priority: (REQ.DEFECT_PRIORITY)		РРМ	Ŧ	Map Values	
×	Actual Fix Time (actual-fix-time)	Actual Fix Time (days): (REQD.ACTUAL_FIX_TIME)		Bidirectional	•		
×	Estimated Fix Time (estimated-fix-time)	Estimated Fix Time (days): (REQD.ESTIMATED_FI	K_TIME)	Bidirectional	•		
×	Reproducible (reproducible)	Reproducible: (REQ.REPRODUCIBLE)		QC/ALM	•	Map Values	
×	Detected in Version (detection-version)	Detected in Version: (REQ.DETECTION_VERSION	)	QC/ALM	•		
ĸ	Closed in Version (closing-version)	Closed in Version: (REQD.CLOSING_VERSION)		QC/ALM	•		
¢	Description (description)	Detailed Description: (REQD.DEFECT_DESCRIPT	ION)	Bidirectional	•		
<b>k</b>	Assigned To (owner)	QC/ALM Assigned To User (REQ.KNTA_QC_DEFE	CT_ASSIGNED_TO)	QC/ALM	•		
×	Closing Date (closing-date)	Closed on: (REQD.CLOSING_DATE)		QC/ALM	•		

Complete the fields using the following information and click Next.

Field Name	Description
QC/ALM Synchronization Control Field	Specify a value in this field to allow the QC/ALM end users to control whether they want to create a defect in PPM Center as a result of creating a defect in ALM.
	The values in the drop-down list are fields (with Y/N values) retrieved from the Defect entity type of the ALM project specified in the <b>Project</b> field.
Field Mapping	Separate lists of unmapped QC/ALM Entity fields and PPM Request fields, followed by a table of the preconfigured Current Field Mappings

iii. The Configure QC/ALM Integration for Request Type: ALM – Defect Template with Quality Center Integration section opens showing **Step 3: Complete Configuration**.

Server Configuration Details: Configure for Request Type: ALM	- Defect Template with Quality Cen	ter Integration	
ALM - Defect Template with Quality Center Integration 🔻 🕂 Add Int	egration Configuration		
Step 1: Configure Server Details	Step 2: Map P	PMQC/ALM Fields	Step 3: Complete Configuration
Notification Options: Send error notification when error occurs Email addresses: Send notification immediately Send consolidated notification daily			
Send event notification when the integration creates or updates et Email addresses Send notification immediately Send consolidated notification daily  Prev Save & Enable	tities.		

Edit the notification options, if necessary. When finished, click **Save & Enable**.

Field Name	Description
Notification Options	Options for email notification when integration errors occur, and when integration creates or updates entities

#### • ALM – Request for Change (RFC) Integration.

i. The Configure QC/ALM Integration for Request Type: ALM – Request for Change (RFC) Integration section opens showing **Step 1: Configure Server Details**.

In this example, the selected request type ALM – Request for Change (RFC) Integration includes the **QC/ALM Defect Information** field group. It is associated with an HP ALM defect, as indicated in the **Entity Type** field. For a new integration, the status is **Disabled** by default.

Integration Configurations										
Request Type		Status	Server URL			Version	Domain	Project	Entity Type	Actions
ALM - Defect Template wit			http://myd-vm	)1999.hpswlabs.adapps.hp.co		ALM 11.5	DEFAULT	R2D	Defect	*
ALM - Request for Change		1	http://myd-vm	01999.hpswlabs.adapps.hp.co		ALM 11.5	DEFAULT	R2D	Requirement	🗶 📢
Server Configuration Details: Con	nfigure for Request Type: ALM -	Request for Char	ige (RFC)							
ALM - Defect Template with Quality C	enter Integration 🔻 🕂 Add Inte	gration Configura	ion							
	Step 1: Configure Server Detail:	5		5	Step 2: Map PPMQC/ALM Fields					
	Step 3: Complete Configurati	on								
Status:	Enabled									
*QC/ALM Version:	ALM 11.50									
*QC/ALM Server URL:	http://myd-vm01999.hpswiabs.a	dapps.hp.com/808i								
*QC/ALM Username:	admin									
*QC/ALM Password:										
*QC/ALM Server Time Zone:	GMT +02:00 (Asia/Jerusalem) k	srael Standard 1 👻								
*QC/ALM Domain:	DEFAULT	-	Get Domains							
*QC/ALM Project:	R2D	•								
*Entity Type:	Requirement									
Integration Options:										
*Default QC/ALM Folder Name:										
Requirements										
Make QC/ALM requirement hier	archy matching PPM request hierar	chy								
			Mast							

Complete the fields using the following information and click Next.

Field Name	Description
*QC/ALM Version	Select your HP ALM version from the drop-down list of supported versions.
*QC/ALM Server URL	URL of the HP ALM server in the following format: http:// <alm_server_host>:<port>/qcbin/ Note: HTTPS is supported. Use https in the URL as needed.</port></alm_server_host>
*QC/ALM Username	User name used to access HP ALM.
*QC/ALM Password	Password for the QC/ALM user name.

Field Name	Description
*QC/ALM server time zone	Time zone for the ALM server. Required to ensure that the integration correctly manages updates between fields mapped as bidirectional between PPM Center requests and associated HP ALM requirements. Default is the time zone for the PPM Server.
	Note: For some of the GMT time zones, only the <b>Daylight Savings</b> <b>Time Not Used</b> option is available. Time zone names that include city names are not available due to changes with a third-party product. For example, you may only see the <b>GMT +9:00 Daylight</b> <b>Savings Time Not Used</b> option, which means that the <b>GMT +9:00</b> (Asia/Yakutsk) Yakutsk Time option is not available.
*QC/ALM Domain	Domain on the HP ALM server to use for the integration.
	Note: To retrieve the set of domains, click Get Domains.
*QC/ALM Project	HP ALM project to use for the integration.
	Note: List is populated when QC/ALM Domain is selected.
*Entity Type	HP ALM entity type to be used for integration— <b>Requirement</b> .
Integration	Additional options for ALM – Request for Change (RFC) Integration.
Options	Location in ALM where requirements are created while integrating with a PPM request.
	Recommended value for <b>Default QC/ALM Folder Name</b> is <b>Requirements</b> .

ii. The Configure QC/ALM Integration for Request Type: ALM – Request for Change (RFC) Integration section opens showing **Step 2: Map PPM – ALM Fields**.

Application Change	Manage Application Change								
iect Quality	Integrating PPM Center with Quality Center and/or H Download PPM Center-ALM Integration Tool.	P ALM enables to create requirements i	and defects in Quality Center and/or HP ALS	I while using PPH Center. This allows users of both applicate	ons to participate in the pr	ocessing of defects, chang	e requests, and release	requests.	
gration Solution	Integration Configurations								
	Request Type	Status	Server URL		Version	Domain	Project	Entity Type	Actions
	ALM - Defect Template wit		http://myd-vm01999.hpswlabs.ac	lapps.hp.co	ALM 11.5	DEFAULT	R2D	Defect	🖉 🗶
	ALM - Request for Change	1	http://myd-vm01999.hpswlabs.ac	lapps.hp.co	ALM 11.5	DEFAULT	R2D	Requirement	🔰 🗶 🔍
	Server Configuration Details: Configure for R ALM - Defect Template with Quality Center Integrat Step 1: Conf	equest Type: ALM - Request for Chi an • • • • • Add Integration Configur gure Server Details	ange (RFC) ation	Sitep 2. Map PPM-QCI/LIM Fields		$\geq$			
	Server Configuration Details: Configure for R ALM - Defact Tereplate with Quality Center Integrat Step 1: Conf Step 3: Co	equest Type: ALM - Request for Chi Add Integration Configure gure Server Details mplete Configuration	ange (RFC) ation	Step 2 Map PPM-OCHLM Fields		>			
	Server Configuration Details: Configure for R ALM - Detect Template with Dualty Center Heged Step 1: Conf Beep 3: Co Field Mapping: COLUL Entry Fields	equest Type: ALM - Request for Chi Add Integration Configur igure Server Details explote Configuration	ange (RFC) alton PPM Request fields	Step 2 Map PPM-OCINUM Fields					
	Server Configuration Details: Configure for A ALB - Dated Tempsile with Duality Centre Integrat Silep 1: Cont Silep 2: Con Faild Mapping: CCIALM Entity Fields Transchame	equest Type: ALM - Request for Ch: No. • • • Add Integration Configur gure Server Details mplete Configuration • • • • • • • • • • • • • • • • • • •	ange (RFC) ation PPM Request Fields (#E0 FERCENT_COMPLET)	Step 2 Map PPM-OCIALM Fields					
	Server Configuration Details: Configure for R ALB - Dated Temples with Quarky Center Heyer Step 1: Cont Step 2: Cont Step	equest Type: ALM - Request for Ch. ne • + Add Integration Configur gure Server Details mglete Configuration % Complete Details	ange (RFC) aton PPM Request Fields (#IG PR/COT_COMPLET)	Ship 2 Map PPU-OCAUN Preds					

Complete the fields using the following information and click Next.

Field Name	Description
Field Mapping	Separate lists of unmapped QC/ALM Entity fields and PPM Request fields, followed by a table of the preconfigured Current Field Mappings.

iii. The Configure QC/ALM Integration for Request Type: ALM – Request for Change (RFC) Integration section opens showing **Step 3: Complete Configuration**.

Request > Create New ALM	I - Request for Change (RFC) > Integration Configurations								
Application Change	Manage Application Change								
				and the second sec					
oject Quality	Download PPM Center ALM Integration Tool.	create requirements	no benecis in quality center and/or hir Actil W	mie using inni Center. This allows users of contappicati	ina to paracipate in the pr	cessing of detects, chang	e requests, and release rec	pena.	
tegration Solution	Integration Configurations								
	Request Type	Status	Server URL		Version	Domain	Project	Entity Type	Actions
	ALM - Defect Template wit	1	http://myd-vm01999.hpswlabs.adap	ops.hp.co	ALM 11.5	DEFAULT	R20	Defect	🗶 🔍
	ALM - Request for Change	1	http://myd-vm01999.hpswlabs.adap	ops.hp.co	ALM 11.5	DEFAULT	R2D	Requirement	🖌 🕺
	Server Configuration Details: Configure for Request Type (ii)	M - Request for Ch	nde (REC)						
	ALM - Defect Template with Quality Center Integration 💌 🛖 Add	Integration Configur	noite						
	Step 1: Configure Server De	tails		Step 2: Nap PPMQCIALM Fields					
	Step 3: Complete Complete	rabon							
	Notification Options:								
	Send error notification when error occura								
	Fmail addresses								
	Send ontification immediately								
	Sand consolidated politication daily								
	Send event notification when the integration creates or update	es entites.							
	Email addresses:								
	Send notification immediately								
	Send consolidated notification daily								
	Rear Dates Inc. Sould De	Canad							
	Prev Cenere Save 6 Dis	Canter							

Edit the notification options, if necessary.

Field Name	Description
Notification Options	Options for email notification when integration errors occur, and when integration creates or updates entities

5. Click Save & Enable.

# Configuring Workflow for Request to Requirement Integration

## To configure the workflow for the Request to Requirement integration:

1. From the menu bar, select **Open > Administration > Open Workbench**.

The **PPM Workbench** opens.

2. From the navigation pane, select **Configuration > Workflows**.

The Workflow Workbench dialog box opens with the Query tab selected.

<u>F</u> ile <u>E</u> dit <u>T</u> ools I	Na <u>v</u> iga	ate <u>M</u>	(indow Product li	nformation	
Demand Mgmt					
Deployment Mgmt		쳵 Wo	rkflow Workbench		<b>막 집</b>
Time Mgmt		ery	Query:	None	
Dashboard			Workflow Name:		
Environments		ults	Workflow Scope	ALL T	nabled: ALL 🔫
Configuration		Res	Subworkflow:	ALL Vise in Release Distri	outions: ALL 🔻
Sys Admin			Description	[]	
Workflows			NowWorldow		Savo Quero Clear List
Validations			Ready		
			Inteauy		

3. Click List

The **Results** tab opens.

4. Double-click ALM – Request For Change.

The Workflow: ALM – Request for Change dialog box opens with the Layout tab selected.

<u>F</u> ile <u>E</u> dit <u>T</u> ools	Na <u>v</u> igate <u>V</u>	Vindow Product Information		
Demand Mgmt				
Deployment Mgmt	🙆 Wa	orkflow Workbench		S -
Time Mgmt		Workflow Name	Description	1
Dachhaard		ALM - Change Migration	Change Migration Workflow	Packa 🔺
Dashboaru		ALM - Change Review and Approval Sub WF	Change Review and Approval Sub WF	Requ
Environments	Its	ALM - Defect Template with Quality Center Integra	IT Defect Management with Quality Center Integra.	.Requiss
Configuration	- IS	ALM - Deploy and Test Changes Sub WF	Deploy and Test Changes Sub WF	Requi
Configuration	~ ~	ALM - Impact & Resource Assessment Sub WF	Impact & Resource Assessment Sub WF	Requ
Sys Admin		ALM - Infrastructure Changes Sub WF	Infrastructure Changes Sub WF	Requ
		ALM - Non Release Sub WF	Non Release Sub WF	Requi
		ALM - Plan Tests Sub WF	Plan Tests Sub WF	Requi
		ALM - RFC - Urgent Change Management Sub WF	Urgent Change Management Sub WF	Requi
I II		ALM - Release Distribution	Release Distribution WF	Relea
		ALM - Release Distribution Sub WF	Release Distribution Sub WF	Packa
Workflows		ALM - Release Request	Release Request Workflow	Requi
		ALM - Release Sub WF	Release Sub WF	Requi
		ALM - Request For Change	Request For Change	Requi 💌
-		•		
<b>•</b>		New Open	Copy Delete Refresh	
Validations		35 Record(s) loaded.		

5. Right-click Step 23 Non Release Sub WF.



6. Select Edit Source.

The Workflow: Non Release Sub WF dialog box opens with the Layout tab selected.

Package W	arkflows	Request Types	Ownershin	Lised By	User Data
Workflow Layout		Step Sequence	Deploy	/ment Managemen	Settings
					ô .
eployment to TEST	Approved — 🛛 🕨	Approved —	nform QA	Manual Ity Process Mode Quality Center 6. Qu	5. Run Tests
eployment to TEST	Approveci — 🕨 🕨	Approved • • • • • • • • • • • • • • • •	nform QA	Manual lity Process Mode Quality Center 6. Qu	5. Run Tests

7. Right-click Step 4 Quality Process Mode.

## 8. Select Edit.

The Workflow Step dialog box opens with the **Properties** tab selected for Workflow Step 4.

#### 9. Update the Step 4 Request Status:

🕼 Workflow Step				×
Notifications	Timeout	User Dat	a Results	Display Settings
Properties	s	ecurity	Segr	regation of Duties
Otan blumbar				
Step Number.	4			
Step Name:	Quality Proc	ess Mode		
Action Summary:				
Description:				
Source Type:	Decision			
Source Name:	ALM - Quali	ity Process Mar	nual mode	
Enabled:	<ul> <li>Yes</li> </ul>		🔿 No	
Display:	Always			•
Workflow Parameter:	NONE			•
Avg Lead Time:				
Request Status:	Approved			
Current % Complete:				
Parent Assigned To User:				Edit Clear
Parent Assigned To Group:				Edit Clear
Workflow Step Information				U
Authentication Required	None			•
				OK Apply Cancel

a. Click the **Selection**  $\overline{\blacksquare}$  icon.

The Validate dialog box opens.

- b. Select Approved and OK.
- 10. In the Workflow Step dialog box, click **OK**.
- 11. In the Workflow: ALM Request for Change dialog box, click **Save** and close the Workflow Workbench.

# Verification

Note: This procedure is to verify that the implementation was done successfully.

## To open an ALM defect from a PPM request:

- 1. In PPM, click Create > Requests > Other types ....
- 2. In the Request Type window, select ALM Defect Template with Quality Center Integration.



- 3. Click Create.
- 4. Fill in the mandatory requests fields.
- 5. Check that the information in the QC/ALM Defect Information pane is correct and that Synchronize to QC/ALM Defect is checked **Yes**.

- QC/ALM Defect Information			
QC/ALM instance http://mys-um05976 hps/vlabs.adapps.hp.com.80800qcbin/ CC/ALM Project B2D		OC/ALM Domain DEFAULT Synchronize to OC/ALM Defect %Yes @No	
QC/ALM Defect Number		QC/ALM Defect Status	
QC/ALM Defect Integration Message			
QC/ALM Defect Attachment URL			
(No Link)			
QC/ALM Assigned To User		Detected in QC/ALM by:	
	1 💷		

- 6. Click **Submit**.
- 7. In the Request Creation Confirmed window that opened, click the Request ID.

The following	request has	been created a	ind submitted:
Request #:	30243	Description:	Integration fi

8. In the QC/ALM Defect Information pane, check that QC/ALM Defect Number contains a valid defect number from ALM and that the QC/ALM Defect Status contains the value **New**.

- QC/ALM Defect Information		
QC/ALM Instance	QC/ALM Domain	
http://myd-vm05976.hpswlabs.adapps.hp.com:8080/qcbin/	DEFAULT	
QC/ALM Project	Synchronize to QC/ALM Defect	
R2D	●Yes <sup>O</sup> No	
QC/ALM Defect Number	QC/ALM Defect Status	
4	New	
QC/ALM Defect Integration Message		
QC/ALM Defect Attachment URL		
(No Link)		
QC/ALM Assigned To User	Detected in QC/ALM by:	

- 9. Go to the ALM client.
- 10. Open the Defect pane.
- 11. Search the Defect according to the Defect number in PPM.

Requirements	×	08 🗭 🏲	Defect ID	Summary	Actual Fix	Assigned To	Caused
Cloud Settings	×		-				
			1	PPM ALM test			
📥 Testing	×	æ	2	Bug for repor			
👸 Lab Resources	×		<u>3</u>	EEM applicat			
Defects			<u>4</u>	Integration fix			
- Deletts							
🗿 Performance Ce	×						
_							

**Note:** To verify opening an ALM requirement from a PPM request, follow the same procedure using the **ALM – Request For Change** request type.

# Chapter 5: Viewing ALM Quality Metrics in PPM

#### This chapter includes:

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Configuring ALM – PPM View Project Quality Integration for PPM Project	73
Configuring ALM – PPM View Project Quality Integration for PPM Task	79
Verification	85

# Overview

This chapter describes how to configure the **View Project Quality** integration. The View Project Quality integration solution integrates HP Project and Portfolio Management (PPM) Center with the Releases module of the HP Application Lifecycle Management (ALM) product. The integration allows project management officers, project managers, development managers, and QA managers to have visibility into quality KPIs and ALM scorecards from PPM Center projects, and allows them to optimize the management of project quality.

In the context of the Requirement to Deploy (R2D) Value Stream, this integration is used mainly in complex projects which include multiple application releases.

For more information, see Integration ID#633: View Project Quality (PPM – ALM) in **HP Software Solutions Now**.



The following diagram illustrates the relationship between the products for this integration:
# Configuring ALM – PPM View Project Quality Integration for PPM Project

This section contains the following topics:

**Note:** This integration is part of the Requirement to Deploy Value Stream. Step 3 is mandatory whether you are configuring the ALM – PPM View Project Quality Integration for PPM Projects and/or PPM Tasks.

### Overview

The integration between a PPM project and ALM release provides quality-related information into the PPM project that can be retrieved from ALM for project stakeholders and participants.

# Configuring ALM – PPM View Project Quality Integration for PPM Project

This section contains the following steps:

Step 1: Adding the QC/ALM Release Information Field Group to the Request Header Type Associated with the Request Type	.73
Step 2: Adding an ALM Integration Configuration	. 77
Step 3: Enabling and Scheduling the QC Integration Sync KPI Service	.78

**Note:** This integration is part of the Requirement to Deploy Value Stream. Step 3 is mandatory whether you are configuring the ALM – PPM View Project Quality Integration for PPM Projects and/or PPM Tasks.

# Step 1: Adding the QC/ALM Release Information Field Group to the Request Header Type Associated with the Request Type

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

#### The **PPM Workbench** opens.

3. From the navigation pane, select **Demand Mgmt > Request Types**.

The Request Type Workbench opens.

<u>F</u> ile <u>E</u> dit <u>T</u> ools f	Na <u>v</u> igate	Window Request Type Product Information		
Demand Mgmt	🕢 Re	juest Type Workbench	i i	് മ്
Deployment Mgmt	<u>≥</u>	Request Type	Description	En
Time Mgmt	Que	ALM - Defect Template with Quality Center Integra	Defect request type for ITG integration with Qualit Y	
Dashhoard	l v	ALM - Release Management	Release Management Y	
Duonocuru	불	ALM - Request for Change (RFC)	Request For Change (RFC)	
Environments	Ses	DEM Application Bug	Application burge about the used to report problem V	
Configuration	<b>—</b>	DEM - Application Enhancement	Application bugs should be used to report proble	<u> </u>
Our Admin		DEM - Application Enhancement	Database refresh requests can be made for all IT	
Sys Admin		DEM - Initiative	Initiative request should be used to request key n	
		Enhancement	Enhancement Request type	
		Generic Request	General-purpose request tracking Y	
<u> </u>		PFM - Asset	Assets should be used to add such things as Pr Y	
		PFM - Project	Projects should be used to initiate an approved p Y	
Contacts		PFM - Proposal	Proposals should be used to request a new Proj Y	
001114010		Program Issue	A standard Request Type for logging program Iss Y	-
		4		
<b>6</b>		New Open Copy Delet	te Refresh Setup Request Header	
		26 Record(s) loaded.		
Request	)			
Types				

4. In the Request Type field, enter Project Details.

**Note:** You can create new project types. Instead of using the system default request types directly, create your own project types with customized project type associated request types.

For details, see Chapter 10, "Integrating PPM Center Projects with HP ALM Releases – View Project Quality" > "Configuring the Integration Solution" > "Configuring Project Types" > "Creating New Project Types with Customized Project Type Associated Request Types" on page 308 in the *HP Project and Portfolio Management Center Solution Integrations Guide*.

Demand Mgmt	🍈 🖗 Re	quest Type Workbench	E	r e
Deployment Mgmt	2	Request Type	Description E	En
Time Mgmt	0 m	DEM - Application Enhancement	Application Enhancements should be used to re Y	1
Deebbeerd		DEM - Database Refresh	Database refresh requests can be made for all ITY	
Dashbuaru	- ¥	DEM - Initiative	Initiative request should be used to request key p Y	
Environments	esi	Enhancement	Enhancement Request type Y	
0	<u>۳</u>	Generic Request	General-purpose request tracking Y	
Configuration		PFM - Asset	Assets should be used to add such things as Pr Y	
Sys Admin		PFM - Project	Projects should be used to initiate an approved p Y	
		PFM - Proposal	Proposals should be used to request a new Proj Y	- 1
		Program Issue	A standard Request Type for logging program IssY	
<b></b>		Program Risk	Request type for entering program risk information Y	
		Project Details	Basic set of detailed project information. Y	
		Project Issue	A standard Request Type for logging project Issu Y	
Contacts		Project Risk	Request type for entering project risk information Y	
		Project Scope Change Request	A standard Request Type for project scope changY	1
			3000000	
<b>6</b>		New Open Cop	y Delete Refresh Setup Request Header	
_		26 Record(s) loaded.		
Request		P		
Types				

5. In the **Results** tab, open the **Project Details** request type.

The Request Type: Project Details dialog box opens.

🗑 Request Type : Pri	oject Details 🚟								d	'ø' 🗵
Request Type Name	Project Details				Ret	ference Code:	_PROJE	CT_DETAILS	3	
Creation Action Name	Project Details			Boguo	ot Hoodor Tu	Project D	otoilo			
Category	:			- Reque	st meauer i y	pe. [Fiojecto	etans			
Extension	:			-					New	Open
Description	: Basic set of deta	iled project inform	ation.							
Meta Layer View	MREQ_	PROJECT_DET.	AILS							
Max Fields	: 50			<b>▼</b> E	nabled: 💿 Ye	es		🔿 No		
Sub-Types	Workflows	User Acces	ss	Notifications	Us	er Data	Owne	ership	Help Conte	ent
Fields Layo	out Displ	ay Columns	Requ	est Status	Statu	is Dependenc	ies	Rules	Commar	nds
Promp	ot	Token	Ena	bled Comp	onent Type		Va	lidation		Displa
<u>⊞ Summary</u>										
C/ALM Release	Information									
	· · ·									
		2000000								•
				All New E	lit Remove	:				
									OK Save	Cancel
Ready										

6. In the **Request Header Type** field, click **Open**.

The Request Header Type dialog box opens.

🙆 Request Header Type : Project De	tails 👬				- <b>5</b>			
Request Header Type Name: Project Details								
Reference Code: PROJE	ECT_DET.	AILS						
Description: Basic se	et of detai	led project infor	mation.					
Extension:		-	Enabled: 🤅	) Yes	⊖ No			
Fields Layout Filter Owners	hip 🛛 Ua	ser Data 📔 Refi	erences					
Prompt	Display	Display Only	Transaction Hist.	Notes Hist.	On Search/Filte			
🕀 Summary								
🕀 – PFM Project								
🗄 – QC/ALM Release Information								
Hall All New Edit Remove Field Groups								
				Ok	Save Cancel			
Ready								

7. Click Field Groups.

The Field Groups dialog box opens.

🅼 Field Grou	ips X
Please ena	able the Field Groups necessary for the desired functionality of this Request Header Type: 🔄
Enabled	Description
	CMQC Application Project: CMQC Application Project (Also include PFM Project and CMQ
	CMQC Project Status: CMQC Project Status field group
	CMQC QC/ALM Administration: CMQC QC/ALM Administration field group
	CMQC QC/ALM Instance: CMQC QC/ALM Instance field group
	CMQC Test Status: CMQC Test Status field group
	CMQC Testing Project: CMQC Testing Project (Also include PFM Project and CMQC QC/AL
	Demand Management SLA Fields: This Field Group contains the fields necessary to man
	Demand Management Scheduling Fields: This Field Group allows a request to be schedu
	PFM Asset: Allows Requests to be considered as Assets in a Portfolio.
	PFM Project: Required for any request type that will represent a project lifecycle (regardles
	PFM Proposal: Allows Requests to be considered as Proposals in the Portfolio Managem
	OK Cancel
Ready	

8. Select the check box for the QC/ALM Release Information field group, and click OK.

The QC/ALM Release Information field group is added to the request header type.

🅼 Field Gro	ups X
<b>V</b>	Prim Project. Required for any request type that will represent a project medycle (regardles 🔒
	PFM Proposal: Allows Requests to be considered as Proposals in the Portfolio Managem
	Program Issue: Allows Requests to be considered as Issues in a Program.
	Program Reference: Contains a field that allows a user to add a Program reference to a R
	Program Risk: Allows Requests to be considered as Risks in a Program.
	Project Issue: Allows Requests to be considered as Issues in a Project.
	Project Reference: Contains a field that allows a user to add a Project reference to a Requ
	Project Risk: Allows Requests to be considered as Risks in a Project.
	Project Scope Change: Allows Requests to be considered as Scope Changes in a Projec
	QC/ALM Defect Information: This field group contains fields for PPM-QC/ALM Defect integr
	QC/ALM Info: Allows Requests to use the special integration with QC/ALM
	- QC/ALM Release Information: This field group contains fields for QC/ALM Metrics integrati
	Service: Allows selection to identify the service associated with the request
	Universal CMDB Impact Analysis: Enables integration with Universal CMDB
	Work Item Fields: These fields allow requests to be tracked as load in Resource Manager 🚽
•	
	OK Cancel
Ready	

9. Click OK.

#### Step 2: Adding an ALM Integration Configuration

**Note:** This integration is part of the Requirement to Deploy Value Stream. This step is mandatory whether you are configuring the ALM – PPM View Project Quality Integration for either PPM Projects and/or PPM Tasks. This task only has to be done once.

- 1. Log on to the PPM Center with administrative privileges.
- 2. From the menu bar, select **Open > Administration > Integrations**.

The Integration Configuration landing page opens.

Dashboard 🗸	Open 🗸	Search 🗸	Create 🗸	My Links 🗸	History 🗸	Help 🗸	*
Dashboard - Front F	Page > Integrat	ion Configuratio	ns				
Manage Applicatio	n Change	View Projec	t Quality				
View Project Quali	by .	View Project Qu	ality with QC/ALM	/ is an enterprise solu	tion that enables co	mpanies to har	ness the full potential of F
Town roject quun	9	Integration Co	onfigurations				
Hybrid Project							
		Server Nam	е				Serve

3. In the navigation pane, click **View Project Quality**.

The View Project Quality integration configurations page opens.

4. In the Server Configuration Details section, click **Add Integration Configuration**.

The Server Configuration Details section appears.

5. Complete the fields described in the following table.

Field (*Required)	Description
*QC/ALM Server Name	Specify a unique name for the target ALM server
	<b>Note:</b> The server name shall not contain pound sign (#) or space
*QC/ALM Version	Select ALM server version from the drop- down list of supported versions. Valid values include ALM 11.00, ALM 11.20, ALM 11.50, and ALM 12.00.
*QC/ALM Server URL	URL of the ALM server you want to integrate with. For example, http://ALM11.company.net:8080/qcbin/
*QC/ALM Username	ALM account user name that you use to log on to the ALM server
*QC/ALM Password	Password of your ALM account
Description	Provide a description for the ALM server

6. Click Save.

#### Step 3: Enabling and Scheduling the QC Integration Sync KPI Service

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

The Schedule Services page opens.

3. Click the table row that displays the QC Integration Sync KPI Service.

The editable fields for that service are enabled.

4. To enable the service, from the Status list, select Enabled.

Project Health Service	Light	Enabled	Simple	Every 5 minutes
Project Planned Value Update Service	Heavy	Enabled	Simple	Every 24 hours
Project Quality Sync Service	Light	Enabled	Simple	Every 3 hours
QC Integration Migration Service	Light	Disabled	Simple	Every minute
QC Integration Sync KPI Service	Light	Enabled	Simple	Every 24 hours
QC Integration Sync Service	Light	Enabled	Simple	Every 30 minutes
Reference Update Service	Light	Enabled	Simple	Every minute
Request Status Export Service	Light	Disabled	Simple	Every 5 minutes
Resource Pool Rollup Service	Heavy	Enabled	Simple	Every 5 minutes
RM Notification Service	Light	Disabled	Simple	Every hour

- 5. Leave/change the type of expression in the **Schedule Type** list to **Simple**.
- 6. In the Schedule column, leave/change the default value (24 hours).
- 7. Click Save.

**Note:** Once you save the changes, they take effect immediately. There is no need to restart the PPM Server.

# Configuring ALM – PPM View Project Quality Integration for PPM Task

This section contains the following topics:

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Configuring ALM – PPM View Project Quality Integration for PPM Task	80

#### Overview

This integration extension enables project managers to manage multiple HP Application Lifecycle Management (ALM) releases with one HP Project and Portfolio Management (PPM) Center project by integrating project tasks with ALM releases.

The integration of PPM Center tasks with the Releases module of the ALM product allows project management officers, project managers, development managers, and QA managers to have visibility into quality KPIs and ALM scorecards of multiple ALM releases from PPM Center projects. This is accomplished by integrating the PPM Center tasks with ALM releases and allowing them to optimize the management of project quality.

The integration allows project managers to link a task under a project to a specific release managed in ALM. Each PPM Center task is associated with a single release in ALM throughout the task life cycle. This is a one-way one-to-one mapping relationship. This association begins when a project manager maps one task to a specific ALM release.

After the mapping relationship is established, the project managers are able to view quality KPIs and ALM scorecard reports for a release retrieved from ALM. In addition, project managers can also view the overall release hierarchy information of a specific work package from within PPM Center.

# Configuring ALM – PPM View Project Quality Integration for PPM Task

This topic contains the following steps:

Step 1: Downloading the HP PPM Plug-in for ALM Integration	80
Step 2: Installing the HP PPM Plug-in for ALM Integration	. 81
Step 3: Adding an ALM Integration Configuration	. 82
Step 4: Enabling and Scheduling the Project Quality Sync Service	84

Note: This integration is part of the Requirement to Deploy Value Stream. Step 3 is mandatory whether you are configuring the ALM – PPM View Project Quality Integration for PPM Projects and/or PPM Tasks.

#### Step 1: Downloading the HP PPM Plug-in for ALM Integration

To integrate PPM Center tasks with HP ALM releases, download and install the free HP ALM Integration Plug-in for PPM. Obtain the plug-in bundles from the HP Live Network PPM Community.

1. On the PPM Community home page, click **Content Catalog**.



Welcome to the Project and Portfolio Management (PPM) Center community page. This site is dedicated to helping you get the most from your PPM investments. This site is designed to enable you to get the most useful information easily, and also to allow the community to share knowledge. We encourage everyone to participate in the forum. We value your expertise and your lessons learned, and we hope you find this site helpful. The following content is available for HP PPM customers:

Operational Reporting developed on Business Objects.

2. Click HP ALM Integration Plug-in for PPM (where HP is the provider).

Agile Manager Integration Plug-In for PPM	HP	HP Standard
HP ALM Integration Plug-In for PPM	HP	HP Standard
HP Anywhere 10.X		UD

#### 3. Click Downloads.

HP ALM Integration Plug-In for PPM		HP		HP Standar	d
	0verview	Announcements	Forums	Downloads	

The HP ALM Integration Plug-in for PPM – Downloads page opens.

- 4. Select the ALM Integration Plug-in for PPM 9.30 folder.
- 5. Click **ppm-930-ALMPlugin.zip** and download the package.
  - ALM Integration Plug-In for PPM 1.1
  - ALM Integration Plug-In for PPM 930 New!
  - 📄 ppm-930-ALMPlugin.zip New!
  - ► 😜 Resources

This package contains the following two bundles:

- ppm-930-PluginQuality.jar
- ppm-930-PluginQualityVPQ.jar

#### Step 2: Installing the HP PPM Plug-in for ALM Integration

- 1. Copy the ppm-930-ALMPlugin.zip package to the PPM Server.
- 2. Log on to the PPM Server via a remote desktop protocol (RDP).
- 3. Stop the PPM Server.
  - a. In the PPM Server, open a command line.
  - b. Go to the **<PPM home>\bin** folder.

released

c. Run the following script: sh kStop.sh -now -user <admin\_user>

**Note:** <admin\_user> is a user with administrative privileges in PPM.

- 4. Unzip the **ppm-930-ALMPlugin.zip** package and copy the two bundles to the **<PPM\_Home>** directory.
- 5. Deploy the bundles.
  - a. Open a command line.
  - b. Go to the **<PPM home>\bin** folder.
  - c. Run the following script: sh ./kDeploy.sh -i PluginQuality
  - d. Run the following script: sh ./kDeploy.sh -i PluginQualityVPQ
- 6. After deploying the two bundles described in steps 5.c. and 5.d., run the following script: sh ./kUpdateHtml.sh
- 7. Start the PPM server.
  - a. Open a command line.
  - b. Go to the **<PPM home>\bin** folder.
  - c. Run the following script: sh kStart.sh

#### Step 3: Adding an ALM Integration Configuration

**Note:** This integration is part of the Requirement to Deploy Value Stream. This step is mandatory whether you are configuring the ALM – PPM View Project Quality Integration for either PPM Projects and/or PPM Tasks. This task only has to be done once.

- 1. Log on to the PPM Center with administrative privileges.
- 2. From the menu bar, select **Open > Administration > Integrations**.

The Integration	Configuration	landing	page opens.
The milegration	Conniguration	anung	page opens.

Dashboard 🗸	Open 🗸	Search 🗸	Create 🗸	My Links 🗸	History 🗸	Help 🗸	*
Dashboard - Front F	Page > Integrat	ion Configuratio	ns				
Manage Applicatio	n Change	View Projec	t Quality				
View Project Quali	tv	View Project Qu	ality with QC/ALN	/l is an enterprise solut	tion that enables co	mpanies to har	ness the full potential of PP
	-	Integration Co	onfigurations				
Hybrid Project							
		Server Nam	e				Server

3. In the navigation pane, click **View Project Quality**.

The View Project Quality integration configurations page opens.

4. In the Server Configuration Details section, click **Add Integration Configuration**.

The Server Configuration Details section appears.

5. Complete the fields described in the following table.

Field (*Required)	Description
*QC/ALM Server Name	Specify a unique name for the target ALM server
	<b>Note:</b> The server name shall not contain pound sign (#) or space
*QC/ALM Version	Select ALM server version from the drop- down list of supported versions. Valid values include ALM 11.00, ALM 11.20, ALM 11.50, and ALM 12.00.
*QC/ALM Server URL	URL of the ALM server you want to integrate with. For example, http://ALM11.company.net:8080/qcbin/
*QC/ALM Username	ALM account user name that you use to log on to the ALM server
*QC/ALM Password	Password of your ALM account
Description	Provide a description for the ALM server

6. Click Save.

#### Step 4: Enabling and Scheduling the Project Quality Sync Service

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

The Schedule Services page opens.

Project and Portfolio Management Center								
Dashboard 🗸	Open 🗸	Search 🗸	Create 🗸	My Links 🗸	His			
Dashboard - R2D > Schedule Serv	Schedule Ser ices	vices						
Service Name								
AGILE SOLUTION SY	NC SERVICE							
ALM Startup								

3. Click the table row that displays the **Project Quality Sync Service**.

The editable fields for that service are enabled.

- 4. To enable the service, from the Status list, select **Enabled**.
- 5. Leave/change the type of expression in the **Schedule Type** list to **Simple**.
- 6. In the **Schedule** column, leave/change the default value of **24 hours**.

Project Planned Value Update Service	Heavy	Enabled	Simple	Every 24 hours
Project Quality Sync Service	Light	Enabled	Simple	Every 24 hours

7. Click Save.

# Verification

Note: This procedure is to verify that the implementation was done successfully.

#### To relate a PPM task to an ALM release:

- 1. In PPM, navigate to **Search > Projects** and select your project.
- 2. In the **Project Summary**, click **Edit Work Plan**.
- 3. Double click the task you want to relate to an ALM release.
- 4. Go to the **Quality** tab.
- 5. Click Start Mapping.

Project Path: PetStore > EEM release 1.2								
Schedule	Resources	Notifications	Notes	References	Hybrid Project	Quality		
You can link an HP ALM release to this task so that you can:								
<ul> <li>Have visibility into a</li> <li>Optimize the management</li> </ul>	quality KPIs and ALM score gement of project quality by	card of an HP ALM release taking appropriate actions	from PPM Center					
Start Ma	pping							

- 6. Select the ALM server you've configured in previous steps, and click Next.
- 7. Enter the user name and password that you use to log on the target ALM server, and click Next.
- 8. Specify a quality development project that you want to link to:
  - a. Choose an ALM domain.
  - b. Choose an ALM **project**.
  - c. Choose an ALM release.
- 9. Click Confirm.
- 10. In the confirmation step, click **Done**.

11. Check the **Quality** tab the following day to confirm that the data was updated from the ALM release.

**Note:** Since we scheduled the Sync Service Schedule to run every 24 hours, we can only verify the integration the following day. You can change that, thus allowing the integration verification to run faster.

# Chapter 6: Viewing Source Code and Build Data in ALM via ALI

#### This chapter includes:

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Retrieving and Displaying Build Information	88

# Overview

This integration enables HP Application Lifecycle Management (ALM) to connect to a customer's source code management system (SCM) and build systems. This is facilitated by the HP Application Lifecycle Intelligence (ALI) component. For the latest version of the ALI plug-in and accompanying documentation, see HP Application Lifecycle Intelligence on HP Live Network.

In the context of the Requirement to Deploy (R2D) Value Stream, this integration enables the traceability between a defined requirement (in ALM) to a set of source code changes (done in the Source Code Management tool of the customer's choice) and the build which contains this set of source code changes.

The following diagram illustrates the relationship between the products for this integration:



# Prerequisites

The following products must be installed:

- ALM is installed.
- At least one ALM project with:
  - ALM Dev Extension
  - Application Lifecycle Intelligence 2.6 (or higher)
  - ALM Lab Extension for functional and performance testing

**Note:** HP ALI supports several common Source Code Management (SCM) and Build Management solutions. For detailed instructions, refer to the ALI documentation on the HP Software Product Manuals Web site. The instructions provided here are specific for using Git as SCM and Jenkins as Build Management.

# Retrieving and Displaying Build Information

This section contains the following topics:

Installing Hudson/Jenkins Plug-in	88
Configuring Hudson/Jenkins Plug-in	90
Integrating with the Git Source Code Management System	.93

### Installing Hudson/Jenkins Plug-in

According to the instructions in HP Live Network (HPLN), download the ALI bundle from HPLN at https://hpln.hp.com/group/application-lifecycle-intelligence. The ALI bundle version depends upon your ALM version.

From the ALI bundle at agents\buildintegration\hudson\, install the HP ALI Hudson/Jenkins plug-in. This plug-in supports both the Hudson and Jenkins systems.

#### To install the HP ALI Hudson/Jenkins plug-in:

- 1. From the Hudson/Jenkins home page, open the Plug-in Manager and click the Advanced tab.
- 2. In the Upload Plug-in section, browse to ali-hudson-plugin.hpi located in the ALI bundle, and

#### click upload.

**Note:** If the project source code built by Jenkins is stored in Git, first download and install the Jenkins Git plug-in from Jenkins and then install the alihudson-git-plugin.hpi and the base ali-hudson-plugin.hpi.

- 3. After uploading the plug-ins, restart the Hudson/Jenkins server to enforce the changes.
- 4. Confirm that the installed plug-ins are listed in the **Installed** tab in the Plug-in Manager.
- 5. Confirm that the **ALI Integration** link is visible in the Jenkins menu on the left side of the screen.



6. Click the **ALI Integration** link to display the capabilities provided by the Hudson/Jenkins plug-in. The Jenkins and Git plug-in appear as follows:

Application Lifecycle Intelligence for HP ALM
· · · · · · · · · · · · · · · · · · ·
AliGueExtension
Ancescience with CVC systems. This capability allows to maintain transphility between commi
AliGitExtension
Integration with Git systems. This canability allows to maintain traceability between commit-
AlisubversionExtension
Integration with SVN systems. This canability allows to maintain traceability between commi
AliNIInitExtension
Adds capability to track NUnit test results. NUnit result publisher must be executed on the bu
AliJUnitExtension
Adds capability to track JUnit test results. JUnit result publisher must be executed on the bui
AliTestNgExtension
Adds capability to track TestNG test results. TestNG publisher must be installed and execute
AliViewSVNExtension
Adds capability to extract ViewSVN configuration from the job and use it for configuring repo
AliCoberturaExtension
Adds capability to track line coverage from cobertura. Cobertura plugin must be installed and
AliNCoverExtension
Adds capability to track line coverage from NCover. NCover plugin must be installed and exe
AliSalesforceCoverageExtension
Adds capability to track line coverage of force.com source code. Ant force-deploy-task should
XML Schema of the provided content:         Build configurations: BuildConfigurations.xsd         SCM configuration of a build configuration: ScmConfiguration.xsd         Builds of a build configuration: Builds.xsd         Code changes of a build: CodeChanges.xsd         Code coverage of a build: CodeCoverage.xsd         Test results of a build: TestResults.xsd         Build Configurations XML         Configurations XML

**Note:** For more information, see the latest *HP Application Lifecycle Intelligence (ALI) User Guide*.

# Configuring Hudson/Jenkins Plug-in

#### To configure the ALI-related settings in the Jenkins build server:

- 1. Navigate to **Jenkins > Manage Jenkins > Configure System** and scroll down to ALI-related settings.
- 2. Provide default settings in order to be able to alter the configuration for individual build jobs. The default settings should include the ALM URL, domain and project names, ALM user credentials, and the name of the build server as defined in ALM configuration.

#### To set up the name of the build server in ALM:

- 1. Log on to the ALM project with administrator credentials.
- 2. In the Management module, select Build Servers and click the New Server button.

🔩 New Build Server	×
Build Server Configuration:	Hudson/Jenkins Build Serv 📘
	OK Cancel

3. Use your own build server details to fill in the details of the build server.

💼 New Build Server			
🗙 🖑 見 造			
Name: R2D Build Server (Je	nkir	ns)	
Change Detection	¢∧	Details  * Location: http://myd-vm01 Username: admin Description:	999.hps a * Type: hudson Password: *****
		Edit Property	
		Property	Value
		Retrieve incomplete data	
		Preemptive authentication	
		Submit	Close Help

4. In the Jenkins configuration created in Step 2 in the previous section, test the connection to the ALM project and, if the test passes, apply the changes.

5. In the ALM build server configuration, edit the **Build Configurations** tab to include the build jobs and assign them to a specific release.

🖳 Build Configuration Deta	ails				
	AB 🗄				
Build Type ID: 1	* Server ID: R2D_testing	Į			
Details	Details				
CO SCM	* Enabled:	Υ 🔹	* Default:	N	•
Delectriner	* Server ID:	R2D_testing	Name:	R2D_testing	
	Description:		Build Category:		•
	Last Build Se		Release:	Hello World	•

The result of this configuration is the capability of ALM to periodically (default 60 minutes) retrieve build information from build servers and display the build information in the **Builds** module of the **Development** tab.

Application Life	Application Lifecycle Management						
< Back Forward > Too	ls ▼ Help ▼						
② Dashboard ×	Builds Edit View	Favorites An	alysis				
📀 Managem 🛛 🗧	S T T 🔣 💷	🖂 🔹 Relea	ases:	•	Time Period: T	oday 💌	Build Category:
🕄 Requirem 🛛	Filter: Date/Time[[Tod	ay]]					
👌 Lab Reso 🖇	Date/Time	Number	Build Status	Unit Tests	Duration	Build Report	Build System
Testing Hosts	[Today]						
🔏 AUT Environm	7/28/2014 10:12:46	<u>43</u>	Failed		46 secs	view report	view detail
Testing 2	7/28/2014 10:22:37	44	Warning		7 secs	view report	view detail
a resuring ~	7/28/2014 10:24:20	45 40	Warning		/ secs	view report	view detail
🔞 Test Resources	7/20/2014 10:50:22	40	Warning		7 secs	view report	view detail
A Business Com	7/28/2014 10:55:07	48	Warning		7 secs	view report	view detail
🔄 Test Plan	7/28/2014 10:58:48	49	Failed		46 secs	view report	view detail
🕡 Test Lab	7/28/2014 11:00:21	50	Failed		53 secs	view report	view detail
Ruild Verification	7/28/2014 12:02:07	51	Success	100%	34 secs	view report	view detail
	7/28/2014 12:55:24	52	Success	100%	31 secs	view report	view detail
Track Dura	7/28/2014 1:51:11	<u>53</u>	Success	100%	30 secs	view report	view detail
2 Test Runs							
Performa ×							
Defects							
Developm *							
Builds							
Code Changes							

## Integrating with the Git Source Code Management System

#### To integrate with the Git Source Code Management System:

- 1. In ALM, navigate to **Management > SCM Repositories** and click the **New Repository** button.
- 2. Select Git Provider as the type of Source Code Management (SCM).

ior	Si New SCM	Repository		×
	SCM Type:	Git Provider	•	
		SVN Provider		
		CVS Provider		
		TFS over SvnBridge (deprecated)		
		Git Provider		
		Perforce Provider		
_		TFS Provider		

3. Fill in the details of the SCM system, including the location (URL of Git server), and a shared folder for local copy of the repository. The path should be located in the ALM repository folder.

🔄 New SCM Repository	
🗙 🔩 🛃 📇	
* Name: Calc	
Details Change Detection Commit Pattern	Details       * Location:       http://myd-vm01999.hps       * SCM Type:       Git         Username:       Password:       Password:       Password:         Alias:       Security Key Section       Password:       Password:         Security Key       Not present       Upload       Delete         Deserter       Edit Property       Value
	* Directory for local Git repository C:\HP\ALM\repository\Git\Calc
	View diff link View file link GitHub view diff/file link templates
	Submit Close Help

4. Modify the Change Detection and Commit Pattern settings, if necessary.

Note: There are two check boxes—Scheduled Polling and Receive from Agents.

- For Change Detection, it is recommended to at least enable the Scheduled Polling.
- For **Commit Pattern**, the default is **Basic** and allows utilization of most features, such as linking code changes to requirements and defects.
- 5. Edit the newly added SCM repository as follows:
  - a. Select the **Branches** tab.
  - b. Click the New SCM Branch button and edit the details.

**Note:** For Git SCM, the branch path will usually be "*I*" and the branch name will be something simple like "**master**" (and not "refs/head/master").

📑 SCM Branch Details						
6000	RB	AR				
Branch ID: 1	*	Path: 👔				
Details		Details Branch:	master		Last Change	
	$\triangleleft \triangleleft$	+ X S	<b>III 7</b> • E	•••		
		Cross Filter: <cross< td=""><td>Filter Release-SCM</td><td>Branch&gt;Branch ID[1</td><td>]</td><td></td></cross<>	Filter Release-SCM	Branch>Branch ID[1	]	
		Name	Start Date	End Date		
			ОК	Cancel Hel	P	

- 6. To validate successful configuration, commit some code changes to the SCM system.
  - a. After scheduled synchronization (default every 60 minutes) is executed, the list of changes can be seen in the ALM Development module under **Code Changes**.

Application Life	ecycle Management					
< Back Forward > To	ols - Help -					
② Dashboard ×	Code Changes Edit	View Favorite	s Analysi	s		
S Managem *	S T • 🔣 💷	Release	s:	•	Time Period: All 🔹 📋 View Repo	rt Show: All
i Releases	No Filter Defined					
Libraries SCM Reposito	Date/Time	Revision	Files	Lines	Message	Code
Build Servers	4/00/0014_4_00_10	7 07101 5		500		10
🕄 Requirem 🛛	4/29/2014 4:36:10 5/21/2014 6:37:03	7ab7bd3782b	24	256	Initial commit	10
🗟 Lab Reso 🛛 🕹	6/1/2014 12:51:01 6/1/2014 12:54:20	ff9f043496beb 22e24c177a3f	1 1	1 8	Testing automatic build trigger from SCM hook in Testing automated build trigger from SCM Commit.	12 13
🙇 Testing 🛛 🛛 🕹	6/17/2014 10:34:06	08dc976b326	2	18	fixing defect #10	14
Dorformo V	6/17/2014 10:52:04	5dc69b47facd	1	3	fixing defect #10	15
de Performa *	6/17/2014 4:16:23 6/22/2014 5:33:45	488e3496f335	1	4	tixing defect: #10	16
Defects	6/24/2014 10:49:48	b8fda8df59c0	1	2	Incomplete - task REQ8: Enable storage of receip	18
Developm *	6/24/2014 1:13:18 7/15/2014 3:42:53	1dd4e4f389b3 00c7c20ca830	1 1	2 7	Incomplete - task REQ40: Support on-the-fly curre OPEN - task DEF14: Can't submit basic report htt	19 24
Builds	8 7/28/2014 5:34:46	ad571c6105a	2	9	FIXED - task DEF34: issue in translation http://m	25
Code Changes	6/25/2014 11:11:50 6/25/2014 1:27:35	ef63d1283942 aa058a84dd3	1 1	1 3	FIXED - task DEF45: Approval fails for 0 cost item defect #15:	26 27

b. If the commit message matches the rules defined in **Commit Pattern** (for example, fixing defect #14), the code change will be linked to the defect with ID#14 in ALM, shown in the following screen shot.

📴 Code Change Deta	ils		and the state of the				
	AB 🔒 💼						
Code Change ID: 24	Message	OPEN - task D	EF14: Can't submit basic repor	t http://myd-vm01999	hpswlab 🔲 💌		
<ul> <li>Details</li> <li>Requirements</li> </ul>	3. · 3. S	👖 🕈 🖣					
Defects	Cross Filter: <c< th=""><th colspan="6">Cross Filter: <cross change="" defect-code="" filter="">Code Change ID[24]</cross></th></c<>	Cross Filter: <cross change="" defect-code="" filter="">Code Change ID[24]</cross>					
	Defect ID	Summary	Caused By Code Change	Detected In Build	Severity		
	14	Can't submit b	15	564	3-High		

# Chapter 7: Building and Deploying an Application

#### This chapter includes:

Overview	
Prerequisites	
Software Build and Deployment	97
Test Execution	

# Overview

To build an application and then deploy it in a development environment, start with a Jenkins build job, which pulls source code from the Git repository, and then builds it and archives the build artifacts. Those artifacts are then automatically deployed on freshly provisioned servers based on the deployment template stored in Codar. Another Jenkins job uses the details of the deployment to configure an AUT environment in ALM Lab Management and trigger a Build Verification Suite execution.

Thus the process of **Check-in > Build > Deploy > Test** is executed automatically.

# Prerequisites

- Build server (in our example, Jenkins) configured to build the software that is being developed
- Codar installed and ready to deploy the application design
- ALM installed and configured to execute automated tests (for example, via an integration with United Functional Testing)

# Software Build and Deployment

#### To create a software build and deployment job:

1. Begin with a new Jenkins free-style build job that queries the source code repository (in this example, Git) for changes and, If changes are found, triggers the build process and archives the build artifacts.

For example,

Source Code Managem	ent
O cvs	
CVS Projectset	
Git	
Repositories	Repository URL git://myd-vm02499.hpswlabs.adapps.hp.com/AntExample.git
	Credentials
	admin/******
Describes to build	
Branches to build	Branch Specifier (blank for 'any') */master
Repository browser	
Repository bromser	gitbit
	GitBlit root url http://myd-vm02499.hpswlabs.adapps.hp.com:88/
	Project Name in GitBlit AntExample
Additional Behaviours	Add 🗸
None	
Subversion	
Build Triggers	
🔲 Build after other proje	cts are built
🔲 Trigger builds remotel	y (e.g., from scripts)
Build periodically	
Poll SCM	
Schedule	H/5 * * * *
	140
Ignore post-commit hook	s 🗌

2. Add actual build step/steps as shown in the following example that uses an Apache Ant target. You can also use Maven, Gradle, or any other build automation tool that is supported by the build server—for instance, Jenkins.

Build		
Invoke A	nt	0
Ant Version	Apache Ant 1.9.4	T
Targets	war	▼ 0
		Advanced
		Delete
Add build step 🔻	•	

3. Add a post-build step that will trigger automatic deployment of the build artifacts on a newlyprovisioned environment.

To add the post-build action:

- a. Click the **Add post-build action** drop-down arrow and select **HP Helion Codar Plugin** from the list.
- b. Complete the form with details for the HP Codar instance used, plus the location of the application design exported from Codar.

Note: This must be done in .json format.

For instructions on how to export the application design, see HP Helion Codar API Quick Start Guide.

For instructions on installing the HP Helion Codar Jenkins Plug-in, see "Install the Helion Codar Jenkins Plug-in" in the HP Helion Codar Installation and Configuration Guide (https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM01288418).

#### For instance:

HP Helion Codar Plu	gin
HostName	myd-vm01271.hpswlabs.adapps.hp.com
	The hostname or ip address of the Codar
Port	8444
	The port in which Codar is listening, by default 8444
Username	admin
	The username of Codar
Password	•••••
	The password of Codar
SSLCertificatePath	C:\Jenkins\cacerts
	Password credential used to access the REST APIs
CertificatePassword	••••••
	Certificate keystore password
	Validate REST API Access
Enable Http Authentic	ation
Application Design Locat	ion Designs\EEM-Backend.json
	The relative location of the design
Environment	Development 🔻
	The selected environment to provision from
Package properties	EEMWebApp_2c8406bc5f16486fb0ee7cf4829db350VERSION_1GROUPIDco m.hp.csa.type0001:artifacturl:AntExample.war
	Specify the build specific properties of the components in the design that will be dynamically generated based on the Jenkins build
Extended Properties File	
	The location of the properties file containing additional properties
	The location of the properties the containing additional properties
	Add Madag
	Add Nodes
	Delete
dd post-build action 👻	

- c. Click the Add Nodes button and fill in the Nodeld field with the ID of the VCenter component from the application design JSON. In our example, it is VcenterServerType\_VERSION\_\_\_\_\_04.20.0000\_\_\_GROUPID\_\_com.hp.csa.type0002. This enables the plug-in to store the details of the specific node that was deployed by Codar for test execution as described in "Test Execution" on the next page.
- d. Click the **Save** button.

### Validation

When these steps are completed successfully, triggering a new build results in the built software package being deployed according to the application deployment template in Codar for the appropriate development environment.

# **Test Execution**

# To create a build job that will execute automated tests on software built and deployed in previous steps:

- 1. Install the Copy Artifact Plugin (https://wiki.jenkinsci.org/display/JENKINS/Copy+Artifact+Plugin) for Jenkins.
- 2. Create a new Jenkins freestyle job. It should be parameterized with the following parameters:

Туре	Name	Default Value
String	AUT_Environment_Configuration_ID	
String	Codar_Output	CodarOutput.json
String	Port	8080

3. Add the build step **Copy artifacts from another project** and select the project which builds and deploys the developed product.

|--|

Project name	EEM-Backend
Which build	Latest successful build
	Stable build only
artifacts to copy	\$Codar_Output
artifacts not to copy	

4. Add another build step: Execute AUT Environment preparation using HP ALM Lab Management.

Use this build step to assign values to AUT Environment Configuration in ALM.			
ALM server	R2D ALM 12 V		
User name	admin		
Password	••••		
Domain	DEFAULT		
Project	R2D		
AUT Environment ID	1001		
AUT Environment Configuration	Create a new configuration named: From_Jenkins		
	Use an existing configuration with ID:		
Path to JSON file	\${WORKSPACE}\\${Codar_Output}		
Assign AUT Environment Configuration ID to:	AUT_Environment_Configuration_ID		
AUT Environment Parameters	Add Parameter		

#### Execute AUT Environment preparation using HP ALM Lab Management

Add build step 👻

Fill in the following fields according to the environment specifics:

Field	Value (example)	Comment
AUT Environment ID	1001	AUT environment ID should exist in ALM Lab Management
AUT Environment Configuration	Check box: Create new configuration named—From_ Jenkins	Used to discern the AUT configurations created automatically
Path to JSON file	\${WORKSPACE}\\${Codar_ Output}	
Assign EUT Environment Configuration ID to:	AUT_Environment_ Configuration_ID	

5. Click the Add Parameter button.

AUT Environment Parameters			
	Parameter type	Environment •	0
	Parameter name	Parameters/App server/port	0
	Parameter value	port	Ð
			Delete
	Parameter type	From JSON T	0
	Parameter name	Parameters/App server/ipAddress	0
	Parameter value	\$.Nodes[0].properties[(@.length-1)].values[0]	Ð
		🗹 Get only the first value in case an array will be returned	
			Delete
(	Add Parameter		
			Delete

Add the following additional parameters:

Parameter Type	Parameter Name	Parameter Value
Environment	Parameters/App server/port	Port
From JSON	Parameters/App server/ipAddress	\$.Nodes[0].properties[(@.length- 1)].values[0]

- 6. Click the **Save** button to save the changes.
- 7. Click the Add build step drop-down arrow and select Execute HP tests using HP ALM Lab Management from the list.

Provide the details of the appropriate ALM environment, as well as the Test Set/Build Verification Suite ID.

#### For example:

III Execute HP tests using HP ALM Lab Management		
Use this build step to run ALM server-side functional test sets and Build Verification Suites.		
Don't forget to enable the Publish HP tests	result option in the Post-build Actions section so that the tests results are published.	
ALM server	R2D ALM 12 V	
User name	admin	]
Password		]
Domain	DEFAULT	]
Project	R2D	]
Run type	Build Verification Suite 🔻	
Test Set/Build Verification Suite ID	1001	]
Description	Basic build verification suite	]
Timeslot Duration (in minutes, minimum = 30)	30	]
Environment Configuration ID	\${AUT_Environment_Configuration_ID}	0
Use CDA for provisioning and deployment		
<ul> <li>Ose CDX for provisioning and deployment</li> </ul>	Delete	
Add build step 🔻		

- 8. Click the Add Post-build Actions drop-down arrow and select Publish HP tests tesult from the list.
- 9. Click Save button.

### Validation

When these steps are configured correctly, running a new build with the same parameters creates a new Environment Configuration in ALM and triggers the appropriate test set execution.

The overall result is a build triggered upon code change that gets built, is deployed by Codar, and is automatically tested by HP Automation tools.

# Chapter 8: Syncing Defects, Releases and Requirements Between ALM and Agile Manager

#### This chapter includes:

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Integrating ALM with Agile Manager	105
Verification	131

# Overview

HP Application Lifecycle Management (ALM) Synchronizer enables you to link ALM projects and HP Agile Manager (AgM) workspaces, and synchronize their releases, requirements/user stories, and defects.

**Note:** For the integration between ALM and Agile Manager, a specialized version of ALM Synchronizer is used.

In the context of the Requirement to Deploy (R2D) Value Stream, this integration enables the following:

- Provides the testing aspect for user stories managed in Agile Manager.
- Ability to publish an Agile Manager defect to Service Manager users as a Known Error, using the current ALM – SM integration to create an SM Problem based on an ALM Defect. For more details, see "Creating an SM Problem from ALM Defect" on page 133.
- Views project quality in PPM for Agile releases managed in Agile Manager. ALM is the central system for managing quality for both ALM and Agile Manager releases.

For more information, see Integration ID#751: Agile Manager Integration with HP ALM (AgM – ALM) in **HP Software Solutions Now**.





# Integrating ALM with Agile Manager

Synchronizer checks ALM and Agile Manager for recent updates in the synchronized items, and updates the other endpoints accordingly. You can configure the direction in which changes are synchronized between the endpoints—from ALM to Agile Manager, from Agile Manager to ALM—or in some cases, both ways.

This section contains the following steps:

Step 1: Installing the Synchronizer Server and Client	106
Step 2: Adapting Your Agile Manager Project	
Step 3: Adapting Your ALM Project	
Step 4: Creating a Synchronization Link	110
Step 5: Configuring Link Properties	

## Step 1: Installing the Synchronizer Server and Client

Synchronizer contains the following components, which can reside on either the same or separate machines:

- Synchronizer Client. Displays current links and provides a user interface for creating and managing links, and running link tasks. Sends user requests to the Synchronizer server using SOAP/HTTP.
- Synchronizer Server. Synchronizes data between ALM and Agile Manager. Manages synchronization and communication between endpoints, and retrieves and stores information in an integrated database.

**Note:** For the complete installation procedure, see *HP ALM Synchronizer for Agile Manager* or go to your **Agile Manager Help Center** and select **HP ALM Synchronizer for Agile Manager > Install a Synchronizer System**.

## Step 2: Adapting Your Agile Manager Project

- 1. Log on to Agile Manager.
- 2. Go to Configuration.
- 3. Click Customization.
- 4. In Custom Fields, click Add Field and add the following fields:

Арріу То	Field Label	Field Type
Detect	ALM_Defect_ID	Numeric
User Story	ALM_End_Date	Date

5. After adding each field, click either Save and Add Another or Save as required.

**Note:** If the additional fields are required from ALM entities to be synchronized with Agile Manager, add them during this stage—or use these instructions to add them later.

## Step 3: Adapting Your ALM Project

- 1. Create new requirement types in ALM.
  - a. Log on to the ALM project as an administrator.
  - b. Click **Tools > Customize**.



- c. Click Requirement Types.
- d. Click **New Type** and add three types of requirements that represent HP Agile Manager themes, features, and user stories.

Application Lifecycle Manage	ament - Project Customization	Domain: default, Project: r2d, User: admin	Return
Help -			
Liter Properties     Legal Lises     Groups and Permissions     Groups and Permissions     Dead Excess     Part Event Stress     Part Event Stress     Part Event Stress     Automat     March Rules     Workfree     March Rules     Summer Stress     March Rules     Summer Stress     March Rules     Summer Stress     March Rules     March Rul	Pequarement Internet Type Researce Type Dates Type		
		Server Time: 2	0/05/2014 13:06
HP Application Lifecycle Management 1	11.52 √ Trusted	sites   Protected Mode: Off 🛛 🖓 🔻	م 100% 👻 🔤

The new Requirement Types should look as follows:



- 2. Create user defined fields for additional Agile Manager fields.
  - a. Log on to ALM project as an administrator.
  - b. Click **Tools > Customize**.
  - c. Click Project Entities and create the following fields:
    - i. Defect.
      - A. In the Project Entities window, click **Defect**.
      - B. Click User Fields.
      - C. Click New Field.
D. In the Settings window, enter the following information:

Settings		
Name:	BG_USER_03	
Label:	AGM_Defect_ID	
Туре:	Number	•
Length:	255	
	History	Required
	Masked	Searchable

- E. In the Project Entities window, click Save.
- ii. Release.
  - A. In Project Entities window, click Release.
  - B. Click User Fields.
  - C. Click New Field.
  - D. In the Settings window, enter the following information:

Label	AGM_End_Date
Туре	Date

E. In the Project Entities window, click Save.

#### iii. Requirement.

- A. In Project Entities window, click Requirement.
- B. Click User Fields.
- C. Click New Field.
- D. In the Settings window, enter the following information:

Label	AGM_Author
Туре	User List

- E. Click New Field.
- F. In the Settings window, enter the following information:

Label	AGM_Req_ID
Туре	Number

- G. Click New Field.
- H. In the Settings window, enter the following information:

Label	FeatureStoryPoints
Туре	Number

- I. In the Project Entities window, click **Save**.
- d. In the Project Entities window, click Save.

## Step 4: Creating a Synchronization Link

Synchronization is defined by links, which you create and manage in the HP ALM Synchronizer Client.

Links are created between a pair of endpoints—namely an instance of ALM and an instance of Agile Manager. Links run tasks to synchronize records between the endpoints.

Each link defines the types of records that are synchronized, how often, and under what circumstances. The entity type being synchronized in a specific link determines the fields that you can map from each endpoint.

**Note:** A link must be created for each of the three entity types—releases, requirements/user stories, or defects.

- 1. Open HP ALM Synchronizer Client.
- 2. Log on to HP ALM Synchronizer Client as an administrator.
- 3. In the main toolbar, click Link > Create.

- 4. In the new Create Link dialog box, perform the following Steps 1-4 for all three project entities defects, requirements and releases:
  - a. In the Step 1 of 4 General Properties dialog box, Assign general properties, enter the Link name and click Next.

🟋 Create Link - Step 1 o	of 4 - General Prop	perties 🛛 🗙
	Assign gene	ral properties:
	Link name:	ALM-AGM Synd
ALM Synchronizer	Description:	
	Endpoint 1 type:	HP-ALM 💌
	Endpoint 2 type:	HP-Agile-Manager
		< Back Next > Cancel

b. In the Step 2 of 4 – HP ALM Endpoint dialog box, assign HP ALM endpoint connection properties.

🏋 Create Link - Step 2	of 4 - HP-ALM End	dpoint P	×
ALM Synchronizer	<b>Assign HP</b> - Username: [ Password: [	ALM endpoint connection properties: admir(	
oynemonizer	,		
	Parameter	Value	
	ServerURL		
	Domain		
	Project	R2D	
	oferer		
		Set Connection Check Connectivity	
		< <u>B</u> ack Next > <u>C</u> ancel	

i. Specify authentication details for the ALM user name you want to use to connect to the ALM endpoint.

**Note:** The ALM user defined for the synchronization link must have create, modify, and delete permissions for the entity being synchronized (defect or requirement) in the ALM project.

ii. Populate the ServerURL using the following syntax:

http://<ALM server name>[<:port number>]/qcbin

iii. Fill in the **Domain** and **Project** fields for the ALM project you want to connect to.

Note: You can also select a project from a list of available projects.

To do so, click **Set Connection**. In the HP ALM Connection dialog box, enter the connection settings for the ALM server you want to connect to, and then enter the user and project details.

iv. To verify the connection to the ALM project, click Check Connectivity. You may want

to test connectivity to several projects before finalizing a project for the link.

- v. Click Next.
- c. In the Step 3 of 4 Assign HP Agile Manager Endpoint dialog box, assign endpoint connection properties.

🌃 Create Link - Step 3	of 4 - HP-Agile-Manager E	ndpoint 🛛 🗙
ALM Synchronizer	<b>Assign HP-Agile-N</b> User name: Password:	lanager endpoint connection properties:
	Parameter	Value
	TenantId	
	ServerURL	
	Domain	
	Project	
		Check Connectivity

- i. Specify authentication details for the Agile Manager user name you want to use to connect to the Agile Manager endpoint.
- ii. Define the following settings for the Agile Manager site and workspace you want to connect to:

ProductGroupId	The workspace ID, as displayed in the <b>Workspaces</b> configuration page ( <b>Site &gt; Workspaces</b> )
TenantID	You can find the tenant (site) ID in the Agile Manager URL. For example, TENANTID=123456789.
ServerURL	Use the following syntax: http(s):// <server name="">:<port number="">/agm</port></server>

Domain	You can find the server URL in the Agile Manager URL.
	For example,
	https://myserver.mycorp.com/agm/webui/alm/ <domain></domain>
Project	Always defined as Main

- iii. Click Check Connectivity to verify the connection to the Agile Manager workspace.
- iv. Click Next.
- d. In the Step 4 of 4 Entity Types dialog box, select the entity you wish to sync.

🌃 Create Link - Step 4	of 4 - Entity Types			>
Ø	Select entity types:			
ALM Synchronizer	Endpoint 1 (HP-ALM):	Defect Defect		•
,	Endpoint 2 (HP-Agile-Manager):	Release Requirement		
		< <u>B</u> ack	Finish	<u>C</u> ancel

5. Repeat steps a-d for the two remaining entity types.

Be sure you have three links—one for each of the three entity types (releases, requirements/user stories, and defects).

### Step 5: Configuring Link Properties

Link properties include all information about the link. Some main properties are displayed for all links in a sortable grid, and additional properties are displayed for a specific link in a series of tabs.

Although we recommend setting the synchronization job as described below (which will suit most customers), this can be modified for specific needs. For more details, in **Agile Manager Help**, see **HP ALM Synchronizer for Agile Manager > Set up Synchronizer > Configure server options**.

Note: For more information, see HP ALM Synchronizer for Agile Manager > Configure Links.

#### 1. Defect.

a. Click the **Defect** link.



b. Click Edit button.



- c. Go to the **Scheduling** tab.
  - i. Select enable scheduling.
  - ii. Select Run incremental synchronization task.
  - iii. Select Schedule every X and set it up as you wish.

d. Go to the Field Mapping tab and map the fields as follows:

Map Selected Fields 🔹	> Refresh	Schema	s							
HP-ALM Defect schema	nal mappin	g e				HP-Agile-Manager Defect Sche	nstant Value ma			
Name	Туре		Attributes	Mapped	-	Name	Туре	Attributes	Mapped	
🖄 Actual Fix Time	Number		<i>RW</i>	Yes		🔁 Actual (Hours)	Number	R	Yes	
🔄 AGM_Defect_ID	Number		BW -	Yes	_	🔁 ALM_Defect_ID	Number	₿W′	Yes	
🔄 Assigned To	User list		ßW -	Yes		Application	String	RW	No	
🛛 Attachments	Attachme	sni	BW	Yes		🔁 Assigned To	User list	BW -	Yes	
Caused By Code Change	String		RW	No		Altachments	Aitachment	₿W	Yes	
🔁 Closed In Build	String		RW	No		🔁 Blocked	String	RW	No	
Closed in Version	Single va	alue list	RW	No		Pa Bucket	String	R	No	
🔁 Closing Date	Date		RW	Yes	-	🄁 Caused By Code Change	String	RW	No	1
🗙 😤 Check Field Mapping	🕘 Impor	t 🕞 E	xport			Mapping Properties	Value Mapping	Field Prop	perties	
Mapped Fields						🗆 Misc				
Type HP-ALM Field		Directi	on   HP-	Agile-Manage	r Field	<ul> <li>Direction</li> </ul>	<			
AGM_Defect_ID		<	Defe	ect ID		Value	Y			
Defect ID		>	ALM	_Defect_ID						
Problem ID		<	Vak	ie: N						
Project		<	Vak	ie: Agile Mana	ger	Direction				
Reproducible / //		Vak	Value: Y The fie		The field mapping of	firection				

- i. To set up Value Mapping, go to the lower right-hand tab and click Value Mapping.
- ii. To set the direction of the link, click **Map Selected Fields** and select a direction. The default is bi-directional mapping.



HP-ALM Defect Schema	HP-Agile- Manager Defect Schema	Direction	Value Mapping
Summary	Summary	Bi- directional	Νο
Status	Defect Status	Bi- directional	Yes. Map the status to the appropriate value between Agile Manager and ALM.
Detect on Date	Detect on Date	Bi- directional	No
Severity	Severity	Bi- directional	Yes. Map the severity to the appropriate value between Agile Manager and ALM. For example, 5-Urgent <-> 1- Critical.
Assigned To	Assigned To	Agile Manager to ALM	Yes. Map the users that are assigned to the defect between Agile Manager and ALM.
Description	Description	Bi- directional	Νο
Closing Date	Closing on Date	Bi- directional	Νο
Detected By	Detected By	Bi- directional	Yes, map the users to whom the map was detected by between Agile Manager and ALM. This should be bi-directional.
Comments	Comments	Bi- directional	No
Link	Link	Bi- directional	Νο
Detected in Cycle	Sprint	Agile Manager to ALM	Νο
Detected in Release	Detected in Release	Bi- directional	Yes, map the ALM versions to the appropriate Agile Manager releases.

HP-ALM Defect Schema	HP-Agile- Manager Defect Schema	Direction	Value Mapping
Priority	Priority	Bi- directional	Yes, map the values for priorities between Agile Manager and ALM. For example, 2-Medium <-> 3-Medium
Target Release	Release	Agile Manager to ALM	Yes, map the Agile Manager versions to the appropriate ALM releases.
Attachments	Attachments	Bi- directional	No
Actual Fix Time	Invested (Hours)	Agile Manager to ALM	No
Estimated Fix Time	Actual (Hours)	Agile Manager to ALM	No
AGM_ Defect_ID	Defect ID	Agile Manager to ALM	No
Defect ID	ALM_ Defect_ID	ALM to Agile Manager	No

iii. Go to the **Rules** tab. Make your selections as shown in the following screen shot or you can choose to set it up differently according to your organization's needs.



iv. Click Save.



v. Click Yes in the pop-up window.



vi. Click Yes in the pop-up window.



vii. Check that the integrity check is complete.



viii. Click Enable Link.



#### 2. Release.

a. Click the Release link.



- b. Click the Edit 🖉 button.
- c. Go to the Scheduling tab.
  - i. Select enable scheduling.
  - ii. Select Run incremental synchronization task.
  - iii. Select Schedule every X and set it up as you wish.
- d. Go to the **Field Mapping** tab and map the fields as follows:
  - i. To set up Value Mapping, go to the lower right-hand tab and click Value Mapping.
  - ii. To set the direction of the link, click **Map Selected Fields** and select a direction. The default is bi-directional mapping.



HP-ALM Defect Schema	HP-Agile-Manager Defect Schema	Direction	Value Mapping
Name	Name	<b>Bi-directional</b>	No
Start Date	Start Date	<b>Bi-directional</b>	No
Description	Description	<b>Bi-directional</b>	No
Attachments	Attachments	<b>Bi-directional</b>	No
Cycles	Sprints	<b>Bi-directional</b>	No
End Date	End Date	<b>Bi-directional</b>	No

iii. Go to the **Rules** tab. Make your selections as shown in the following screen shot or you can choose to set it up differently according to your organization's needs.

General Connectivity Scheduling Rules Field Mapping Advanced	
Release Creation Map pairs of new releases or sprints found with identical names.	
HP-ALM	HP-Agile-Manager
Creation When a record is created in this endpoint C Create a corresponding record in the other endpoint D nothing Update When a record is updated in this endpoint Update its corresponding record in the other endpoint D nothing Deletion (Full Synchronization Only)	Creation When a record is created in this endpoint Create a corresponding record in the other endpoint Do nothing Update When a record is updated in this endpoint Update its corresponding record in the other endpoint Do nothing Deletion (Full Synchronization Only)
When a record is deleted from this endpoint   Do nothing  Delete is corresponding record in the other endpoint	When a record is deleted from this endpoint  Do nothing  Delete its corresponding record in the other endpoint
Delete its corresponding record in the other endpoint     Recreate based on its corresponding record in the other endpoint	Delete its corresponding record in the other endpoint     Recreate based on its corresponding record in the other endpoint

iv. Click Save.



v. Click **Yes** in the pop-up window.



vi. Click Yes in the pop-up window.



vii. Check that the integrity check is complete.



viii. Click Enable Link.



#### 3. Requirements.

a. Click the **Requirement** link.



- b. Click the Edit 🦉 button.
- c. Go to the Scheduling tab.
  - i. Select enable scheduling.
  - ii. Select Run incremental synchronization task.
  - iii. Select Schedule every X and set it up as you wish.
- d. Edit Subtype Mapping.
  - i. Go to the Subtype Mapping tab.

Connection Link Run Task Tools Help	
È   🕂 +   🚑 🗸 🖉 🔿   🏶 Run +	
H → Links → Ø ALM AGM Sync Gelects → Ø ALM AGM Sync Releases → Ø ALM AGM Sync Req → % Theme - Theme → % Feature - Feature → % UserStory - User Story	General Connectivity Scheduling Filters Subtype Mapping Advanced HP-ALM HP-ALM Business Model Functional Group Performance Testing Add Mapping >>

ii. In the HP ALM sub-window, select the Theme, Feature, and UserStory requirements that you created in ALM in Step 3: Adapt your ALM project > Step 1.d, and click Add Mapping. iii. Click Save.

**Note:** Confirm the three requirement types are created under the link.

- iv. Select the Theme requirement type.
  - A. Go to the **Rules** tab and define which endpoint you want to define as the Master endpoint. Under **HP Agile-Manager**, select **Master**.

HP Agile Manager-ALM Synchronizer Client (Server: localh	ost)	
Gonnection Link Run Task Tools Help		
⇒   -⊖ +   24 ✓ ⊘ -⊃   🐝 Run +		
E- 🗁 Links	1 4	
ALM AGM Sync defects     ALM AGM Sync Beleases	Rules Field Mapping	
G. JP ALM ADM Sync Req Log Feature - Feature Log Feature - Feature Log UseStoy - User Stoy	HP-ALM     Castor (controls record creation and deletion)     Castor     When a record in created in this endpoint.     C. Deate a consegnating record in the other endpoint     C nonthing     Update     When a record is updated in this endpoint	HP-Agle-Manager Centrals record creation and deterion) Creation When a record in created in this endpoint Create a corresponding record in the other endpoint C De nothing Update When a record is updated in this endpoint

- v. Select the Feature requirement type.
  - A. Go to the **Rules** tab and define which endpoint you want to define as the Master endpoint. Under **HP Agile-Manager**, select **Master**.
- vi. Select the UserStory requirement type.
  - A. Go to the **Rules** tab and define which endpoint you want to define as the Master endpoint. Under **HP Agile-Manager**, select **Master**.
- vii. Go to the Field Mapping tab for the Theme requirement type.
  - A. To set up Value Mapping, go to the lower right-hand tab and click Value Mapping.
  - B. To set the direction of the link, click **Map Selected Fields** and select a direction. The default is bi-directional mapping.



HP ALM Defect Schema	HP Agile Manager Defect Schema	Direction	Value Mapping
Name	Name	Bi- directional	No
Comments	Comments	Bi- directional	No
Creation Date	Creation Date	Agile Manager to ALM	No
Creation Time	Creation Time	Agile Manager to ALM	No
Description	Description	Bi- directional	No
Attachments	Attachments	Bi- directional	No
Link	Link	Bi- directional	No
Author	Author	Bi- directional	Yes. Map between Agile Manager and ALM authors. If not, the synchronizer will not be able to sync requirements for authors that do not exist in each application.

- viii. Go to the **Field Mapping** tab for the **Feature** requirement type.
  - A. To set up Value Mapping, go to the lower right-hand tab and click Value Mapping.
  - B. To set the direction of the link, click **Map Selected Fields** and select a direction. The default is bi-directional mapping.



HP-ALM Defect Schema	HP-Agile- Manager Defect Schema	Direction	Value Mapping
Name	Name	Bi- directional	No
Comments	Comments	Bi- directional	No
Creation Date	Creation Date	Agile Manager to ALM	Νο
Creation Time	Creation Time	Agile Manager to ALM	Νο
Description	Description	Bi- directional	Νο
Attachments	Attachments	Bi- directional	Νο
Link	Link	Bi- directional	Νο

HP-ALM Defect Schema	HP-Agile- Manager Defect Schema	Direction	Value Mapping
Author	Author	Bi- directional	Yes. Map between Agile Manager and ALM authors. If not, the synchronizer will not be able to sync requirements for authors that do not exist in each application.

- ix. Go to the Field Mapping tab for the UserStory requirement type.
  - A. To set up Value Mapping, go to the lower right-hand tab and click Value Mapping.
  - B. To set the direction of the link, click **Map Selected Fields** and select a direction. The default is bi-directional mapping.



HP ALM Defect Schema	HP Agile Manager Defect Schema	Direction	Value Mapping
Name	Name	Bi- directional	Νο
Comments	Comments	Bi- directional	Νο
Creation Date	Creation Date	Agile Manager to ALM	Νο

HP ALM Defect Schema	HP Agile Manager Defect Schema	Direction	Value Mapping
Creation Time	Creation Time	Agile Manager to ALM	Νο
Description	Description	Bi- directional	Νο
Attachments	Attachments	Bi- directional	Νο
Link	Link	Bi- directional	Νο
Author	Author	Bi- directional	Yes. Map between Agile Manager and ALM authors. If not, the synchronizer will not be able to sync requirements for authors that do not exist in each application.
Direct Cover Status	Status	Bi- directional	Yes. Map the values for the status between Agile Manager and ALM.

The UserStory displays as shown in the following figure:

××	🛪 🕉 Check Field Mapping 🕣 Import 🕞 Export			Mapping Properties Value Mapping Field Properties			
Mapped Fields			+ / ×				
Туре	HP-ALM Field	Direction	HP-Agile-Manager Field	1			HP.Acle.Manager
<b>D</b>	Description	<>	Description		HP-ALM Value	Direction	Value
<b>D</b>	Attachments	<>	Attachments		Not Covered		New
<u> </u>	Link	<>	Link		No Run	<>	In Progress
<u> </u>	Author	<>	Author		Not Completed	<>	In Testing
<u> </u>	Direct Cover Status	<>	Status		Passed	<>	Done

x. Click Save.



xi. Click **Yes** in the pop-up window.



xii. Click **Yes** in the pop-up window.



xiii. Check that the integrity check is complete.



xiv. Click Enable Link.



## Verification

Note: These procedures are to verify that the implementations were done successfully.

#### To verify that defect data is being synced from Agile Manager to ALM:

- 1. Go to the ALM client.
- 2. In the left pane of the ALM client, open **Defects**.
- 3. Search for defects that were synced from Agile Manager. For example, compare the defect name to the one being synced from Agile Manager or search for Agile Manager-related fields as seen in the following screen shot (such as the **Project** field).

* Summary: AGM_DEFECT_TO_TEST					
	Details				
; es	* Detected By:	admin 🖂 💌	* Detected on D	28/04/2014	
nt	* Severity:	2-Medium	Actual Fix Time:	11	
	AGM_Defect_ID:	8	Assigned To:	admin 🖂 🔻	
	Caused By Cod	<b>•</b>	Closed In Build:	•	
	Closed in Version:	<b>•</b>	Closing Date:	04/08/2014 💌	
	Detected In Build:	•	Detected in Cycle:	Sprint 3	
	Detected in Rel	EEM app for An 🔙 💌	Detected in Ver	•	
	Estimated Fix Ti	11	Has Changeset	Ν	
	Modified:	04/08/2014 17:20:48	Planned Closin	•	
	Priority:	3-High	Problem ID:	Ν	
٩	Project:	Agile Manager	Reproducible:	Y	
4	Description:		Comments:	Add Comr	
	BIUA ab	E 🗄 🖬 🖬 🗤 🍬 🥙 🕮 🛛	» • B I U A a	≝≣∎∎∎	

#### To verify that release data is being synced from Agile Manager to ALM:

- 1. Go to the ALM client.
- 2. In the left pane of the ALM client, open Management.
- 3. Select Releases.

4. Search for releases that were synced from Agile Manager.



#### To verify that requirement data is being synced from Agile Manager to ALM:

- 1. Go to the ALM client.
- 2. In the left pane of the ALM client, open **Requirements**.
- 3. Select Requirements.
- Search for requirements that were synced from Agile Manager. There should be requirements for Theme, Feature and User Story types.

🖃 🖉 Basic expense report submission	22	Passed
Single currency expense report	<u>25</u>	Vot Covered
൙ Basic expense item logging	<u>34</u>	🖸 No Run
Combine multiple expense item	<u>35</u>	🖸 No Run
Parse response and present to	<u>18</u>	Passed
estAGM	14	Ø Passed
25 A 1 1 1 1 1 1	40	<u> </u>

## Chapter 9: Creating an SM Problem from ALM Defect

#### This chapter includes:

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Prerequisites	.134
Configuring Service Manager	.134
Configuring Application Lifecycle Management	.150
ALM Synchronizer	.157
Verification	.169

## Overview

This integration supports the synchronization of various entities between HP Service Manager (SM) and HP Application Lifecycle Management (ALM). This chapter describes setting up a specific subset of the integration capabilities—namely the capability to open a Service Manager problem based on information in ALM defect fields. Once the record is created in Service Manager, it can be marked as a known error.

The outline for configuration includes modifying settings in Service Manager, modifying settings in ALM, installing a synchronizer component, and configuring link(s) which are responsible to synchronize relevant entities between Service Manager and ALM.

**Note:** The following configuration steps are an example and are provided here for your reference. If the product is installed on a different operating system, database type, or was customized for specific customer requirements, the screens and menus may be different.

In the context of the Requirement to Deploy (R2D) Value Stream, this integration enables traceability between defects managed in ALM as part of R2D and problems managed in SM as part of the Detect to Correct Value Stream.

For more details, see the integration documentation—such as *HP Defects and Requirements Exchange with HP Service Manager/ServiceCenter and HP Quality Center/Application Lifecycle Management Installation and Administration Guide.* 





## Prerequisites

The following products must be installed:

- Service Manager is available via Windows and a Web client.
- ALM is up and running and a project has been created.

## **Configuring Service Manager**

The following procedure is an example of how to configure the default Service Manager installation with the Process Designer (PD) Content Pack installed. This affects multiple application menus and options. Configuration instructions for the default Service Manager system can be found in *HP Defects and Requirements Exchange with HP Service Manager/ServiceCenter and HP Quality Center/Application Lifecycle Management*.

This section contains the following steps:

Step 1: Creating an Integration Account That Will be Used by ALM Synchronizer to Connect to Service Manager	.135
Step 2: Creating a "Security Role" Record for the Integration Account	135
Step 3: Modifying Problem Management to Allow for the Storage of Information About ALM Defects	.136

## Step 1: Creating an Integration Account That Will be Used by ALM Synchronizer to Connect to Service Manager

- 1. In main menu, select System Administration > Base System Configuration > Contacts.
- 2. Complete the form and click the **Add** button.

## Step 2: Creating a "Security Role" Record for the Integration Account

1. Navigate to **System Administration > Security > Roles** and fill out the form as shown in the following figure.

😫 Cancel 💾 Save 🐻 Save & Exit	-	
Security Role		
	Name:*	SMQCIntSecRole
	Description:	A role that allows synchronization of data between SM and ALM.

Click Save.

No	Tab Page	Field	Value	Comment
1		Security Role Name	SMQCIntSecRole	
2		Security Area	Change	
3	Rights	View	Yes	Check box
4		Update	Always	
5		Security Area	Problem	
6	Rights	View	Yes	Check box
7		New	Yes	Check box
8		Update	Always	

2. Update the created role with the parameters shown in the following table:

3. Remove all rights from all areas with the exception of the Change area and the Problem area.

Name	* SMQCIntSecRole		
Description	A security role created for SM-ALM integration	n use.	
	Area	Rights	*
	Change	Partial Rights	
	Change Management Configuration	No Rights	
	Change Tasks	No Rights	
	Common Configuration	No Rights	=
	Incident	No Rights	
	Incident Management Configuration	No Rights	
	Incident Tasks	No Rights	
	Knowledge Administration	No Rights	
	Problem	Partial Rights	

# Step 3: Modifying Problem Management to Allow for the Storage of Information About ALM Defects

- 1. Navigate to Tailoring > Database Dictionary and execute a search for rootcause.
- 2. Click the **New Field/Key** button and add the following fields to the root cause table:

Field Name	Data Type
qcintegration.type	StringType
qcintegration.id	Number
qcintegration.project	StringType
qcintegration.created.from	StringType

**Note:** If there is a requirement to store additional information from ALM in the Service Manager database, include those custom fields using the appropriate data type. Refer to **SM Online Help** for additional information about Service Manager customization.

- 3. Create a custom **External Access Definition**, a web service endpoint that will allow ALM Synchronizer to access specific Service Manager records.
  - a. Navigate to Tailoring > Web Services > Web Service Configuration.
  - b. Populate the form with new service details:

External Access Definition				
Service Name:	* QCIntProblemService			
Name:	<ul> <li>rootcause</li> </ul>	~		
Object Name:	QCIntProblem			

**Note:** The captions and values are mandatory and hard-coded. Otherwise the Synchronizer is not able to access Service Manager data.

c. Click the **Add** button and modify the values of the Web service definition.

The **Fields** tab lists exposed fields which can be mapped in the ALM Synchronizer link configuration. Be sure to include all of the fields that are necessary to create/update a Problem record. The example below shows the minimum for an out-of-the-box Service Manager installation with Process Designer Content Pack.

NEWCPProblem					
Problem					
ProblemTask					
QCIntProblem					
UcmdbProblem					
1 to 5 of 5		14 4			
📑 OK 💢 Cancel 🛆 Previous 🕎 Ne:	xt 🕂 Add 💾 Save 💮 Delete 🕻	🖁 Fill 🛛 More 🕶			
External Access Definition					
Service Name:	* QCIntProblemSe	rvice			
Name:	* rootcause				
Object Name:	OCIntProblem				
Controben					
Allowed Actions   Expressions   Fields	RESTful				
Allowed Actions   Expressions   Fields	Caption	Type			
Allowed Actions   Expressions   Fields	Caption CreatedFrom	Type			
Allowed Actions Expressions Fields Field qcintegration.created.from qcintegration.id	Caption CreatedFrom QCEntityID	Type StringType IntType			
Allowed Actions Expressions Fields Field qcintegration.created.from qcintegration.id acintegration.project	Caption CreatedFrom QCEntityID QCProject	Type StringType IntType StringType			
Allowed Actions Expressions Fields Field qcintegration.created.from qcintegration.id qcintegration.project qcintegration.type	Caption CreatedFrom QCEntityID QCProject QCIntegrationType	Type StringType IntType StringType StringType			
Allowed Actions Expressions Fields Field qcintegration.created.from qcintegration.id qcintegration.project qcintegration.type id	Caption       CreatedFrom       QCEntityID       QCProject       QCIntegrationType       ProblemID	Type       StringType       IntType       StringType       StringType       StringType       StringType			
Allowed Actions Expressions Fields Field qcintegration.created.from qcintegration.id qcintegration.project qcintegration.type id category	Caption       CreatedFrom       QCEntityID       QCProject       QCIntegrationType       ProblemID       Category	Type       StringType       IntType       StringType       StringType       StringType       StringType       StringType       StringType			
Allowed Actions Expressions Fields Field qcintegration.created.from qcintegration.id qcintegration.project qcintegration.type id category brief.description	Caption       CreatedFrom       QCEntityID       QCProject       QCIntegrationType       ProblemID       Category       Title	Type       StringType       IntType       StringType       StringType       StringType       StringType       StringType       StringType       StringType       StringType			
Allowed Actions Expressions Fields Field qcintegration.created.from qcintegration.id qcintegration.project qcintegration.type id category brief.description description	Caption         CreatedFrom         QCEntityID         QCProject         QCIntegrationType         ProblemID         Category         Title         Description	Type         StringType         IntType         StringType			
Allowed Actions Expressions Fields Field qcintegration.created.from qcintegration.id qcintegration.project qcintegration.type id category brief.description description affected.item	Caption         CreatedFrom         QCEntityID         QCProject         QCIntegrationType         ProblemID         Category         Title         Description         ImpactedSystem	Type         StringType         IntType         StringType			
Allowed Actions Expressions Fields Field qcintegration.created.from qcintegration.id qcintegration.project qcintegration.type id category brief.description description affected.item rcStatus	Caption         CreatedFrom         QCEntityID         QCProject         QCIntegrationType         ProblemID         Category         Title         Description         ImpactedSystem         Status	Type         StringType         IntType         StringType         StringType			

**Note:** For fields starting with the **qcintegration** prefix, it is important to configure the field captions exactly as shown. Otherwise the Synchronizer will fail to process the records.

d. In the **Expressions** tab of the Web service configuration, add the following lines:

**Note:** This is necessary because the Service Manager workflow requires an update to be completed whenever a Problem record is updated.

cleanup(\$pm.activity);cleanup(\$rc.update);if same(update in \$L.file, update
in \$L.file.save) then (\$L.need.to.update=true)

\$rc.update=update in \$L.file;if (denull(\$rc.update)={}) then (\$rc.update=
{"ALM update sent"})

if (\$L.need.to.update=true) then (\$rc.update={"ALM update sent"})

update in \$L.file=update in \$L.file.save

#### **External Access Definition**

Service Name: Name: Object Name:	* QCIntProblemService * rootcause QCIntProblem		Released: Deprecated:
Allowed Actions Expressions Fields RESTful cleanup(\$pm.activity);cleanup(\$rc.update);if s \$rc.update=update in \$L.file;if (denull(\$rc.upd if (\$L.need.to.update=true) then (\$rc.update={ update in \$L.file=update in \$L.file.save	ame(update in \$L.file, update in \$L.file save) then (\$L.need.to.update=true ate)={}) then (\$rc.update={"ALM update sent"}) "ALM update sent"})	;)	

- 4. Create a global list that contains a list of ALM projects that will be used to open and update the defects on the ALM side.
  - a. In the Service Manager console, navigate to **Tailoring > Tailoring Tools > Global Lists** and create a global list with the following parameters:

Parameter	Value	Remarks
List Name	SMQC Integration PM Project List	List
Regen Entry	1 00:00:00	Check box
Build List on Startup?	Yes	
List Variable	\$G.qcintegration.problem.project	Check box
User Defined List?	Yes	
Value List	<alm server<br="">host&gt;/Domain/Project</alm>	List of ALM Projects targeted for integration

b. Click the Add List button. Click the More menu and click Rebuild Global List.

🐻 OK 😫 Cancel 💠 Add 💾 Save 💮 Delete	🔍 Find 📑 Fill	More -
List Name:	SMQC Integration	Validity Lookup
Regen Every:	1 00:00:00	Export/Unload
Build List on Startup?		Rebuild Global List
List Variable:	\$G.qcintegration.p	problem.project

5. Create a subform that displays ALM defect-related information in Problem forms. For this task, it is necessary to use a Service Manager Windows client.

In the main menu, select **Tailoring > Forms Designer** and create a new form called **pbm.almint.subform**. As a minimum, it should contain the following components:

Component	Properties
Label	Caption: ALM Defect ID
Text	Input: qcintegration.id
	Read-Only: Yes
Label	Caption: Server/Domain/Project
Combo Box	Input: qcintegration.project
	Mandatory condition: [qcintegration.type]>0
Label	Caption: Created From
Text	Input: qcintegration.created.from
	Read-Only: Yes
Label	Caption: Synchronize with ALM
Combo Box	Input: qcintegration.type

Synchronize with ALM	•
Defect ID:	
Server/Domain/Project:	•
Created From:	

- 6. Add the subform created in the previous step to selected Problem Management forms:
  - a. In Forms Designer, locate one of the Problem Management forms and click **Design**.

**Note:** This could be named differently depending on which version of Service Manager is being used—for example, **pbm.problem.logging**.

- b. Add a **Notebook** tab with the caption **ALM Integration** and add the **pm.almint.subform** to it. Save the changes.
- c. Where needed, repeat the steps above for additional Problem Management forms to display ALM-related information.
- 7. Create rules that will define the behavior of the fields we added in different phases of the Problem record life cycle.

**Note:** Since we are using Service Manager with the Process Designer Content Pack, the following steps are different from the out-of-the-box Service Manager setup.

- a. Navigate to Tailoring > Process Designer > Copy Existing Workflow.
- b. Locate, select, and copy the **Problem** entry. Create a name for the new workflow—for example, **QCIntProblem**.

PNew 🐻 Open 🛞 Delete				
HP Proprietary	Name 🔺	Description	Table name	
	naroware	naroware - Automatically opgraded.	cition	
	Hardware	General Hardware Changes - Automatically Upgr	cm3t	
	Identify Affected Systems	Build and Test: Identify Affected System - Automa	cm3t	
(hp)	Incident	Incident workflow.	probsummary	
(III)	Incident Area	Incident Area	imArea	
60	Incident Category	Incident Category	imCategory	
(III)	Incident Subcategory	Incident Subcategory	imSubcategory	
60	Incident Task	Incident Task	imTask	
<b>()</b>	Incident Task Category	Incident Task Category	imTaskCat	
	KM Document	Maintain a Knowledge Document - Automatically U	cm3r	
<b>()</b>	Knowledge	Knowledge Document Workflow	kmdocument	
	Maintenance	Maintenance - Automatically Upgraded.	cm3r	
	Maintenance	General Maintenance Changes - Automatically Up	cm3t	
	Network	Network - Automatically Upgraded.	cm3r	
	Network	General Network Changes - Automatically Upgrad	cm3t	
(III)	Normal	Normal Change	cm3r	
(Jp)	Problem	Problem Management Workflow	rootcause	
60	Problem Area	Problem Area	pbmArea	
60	Problem Category	Problem Category	pbmCategory	
60	Problem Subcategory	Problem Subcategory	pbmSubcategory	
60	Problem Task	Problem Task Workflow	rootcausetask	
<b>(p</b> )	Problem Task Category	Problem Task Category	pbmTaskCat	
	QCIntProblem	Problem Management Workflow	rootcause	
	Release Manag Sent	Managing releases of hardware & software - Aut	cm3r	

- c. From the System Navigator, navigate to **Problem Management > Configuration > Problem Categories** and click **Search**.
- d. In the **Problem Category** page, remove the currently assigned workflow from the **Workflow** field.
- e. Select the problem category for which you want to add a workflow—for example, **Problem**.

f. Enter QCIntProblem in the Workflow field.

Note: Use the new workflow name defined in step b above. 😫 Cancel 🐻 Save & Exit 💾 Save 🛞 Delete | More 🕶 Problem Category Name: problem 1 Active: Description: incident Workflow: QCIntProblem Subcategories Workflow Link New Subcategorie Name Active access true data true facilties true failure true hardware true performance true security true

- g. Click Save to associate the Problem Category with the workflow.
- h. Click Add Rule.

- i. Create a new rule set for initialization.
  - i. From the System Navigator, navigate to **Tailoring > Process Designer > Rule Sets** and enter the values as shown in the following figure:

Rule Set record add	led.		
kule Set			
ID Available as action Name	pbm.alm.int.init	Table name	rootcause
Rules Rule Description			Add Rule
			Add Group
			Edit Rule/Group
			Remove Rule/Group
			Move Up
			Move Down

- ii. Click **New** and **Save**.
- iii. Click the Add Rule button.
- iv. In the Select Rule Type page, click Run JavaScript.
- v. On the Run JavaScript page, enter the following values and click OK.

Field Name	Description
Rule Description	Run JavaScript for initializing Integration type and project in the Problem Record
Field Name	Description
------------	---
Statement	<pre>vars['\$qcint.type.readonly'] = 2;</pre>
	<pre>vars['\$qcint.project.readonly'] = 2;</pre>
	<pre>var_null=system.functionsnull;</pre>
	<pre>varfile = vars.\$L_file;</pre>
	<pre>if(file["qcintegration.type"] !=0 &amp;&amp; !_null(file ["qcintegration.type"])) {</pre>
	<pre>vars['\$qcint.type.readonly'] = 1</pre>
	}
	<pre>if(file["qcintegration.type"] !=0 &amp;&amp; !_null(file ["qcintegration.project"])) {</pre>
	<pre>vars['\$qcint.project.readonly'] = 1</pre>
	}

#### Run JavaScript

Please enter the JavaScript to run. You can set the returnCoo cursorPosition variables to indicate if the validation is successf	de, message, messageType and ful, message to display and cursor focus.
Rule Description ript for initialization of Integrat	ion Type and Project in Problem Record
Condition	
Edit	
<pre>1vars['\$qcint.type.readonly'] = 2; 2vars['\$qcint.project.readonly'] = 3var_null=system.functionsnull; 4varfile = vars.\$L_file; 5 if(file["qcintegration.type"] !=0 6 vars['\$qcint.type.readonly'] = 1 7} 8 if(file["qcintegration.type"] !=0 9 vars['\$qcint.project.readonly'] = 10 }</pre>	2: && !_null(file["qcintegn && !_null(file["qcintegn 1
	Ok Cancel

vi. Click Save and Exit.

- 8. Create a new rule set for validation.
  - a. From the System Navigator, navigate to **Tailoring > Process Designer > Rule Sets** and enter the following values:

Field	Value
ID	pbm.alm.int.validation
Name	Validation for ALM integration in the Problem Record
Table Name	rootcause

- b. Click New and Save.
- c. Click Add Rule.
- d. In the Select Rule Type page, click Set Mandatory Fields.
- e. Click Edit.

The **Condition** editor opens.

f. Add an expression as shown in the following figure and click **Apply**.

CurrentRecord	Blank/NULL	
Qcintegration Type	NULL	
G.		

g. Add another expression as shown in the following figure and click **Apply**.

CurrentRecord	Value
Qcintegration Type	0

h. After clicking **Apply**, the following dialog box appears:

CurrentRecord.Qcintegration Type != NULL 🧷
AND
CurrentRecord.Qcintegration Type != 0 🧷
Add Condition -

Click **OK** at the bottom of the dialog box.

- i. Click OK. The Set Mandatory Fields page closes.
- j. Click Save and Exit.
- 9. Associate the new workflow with the new initialization and validation rule sets.
  - a. From the System Navigator, navigate to **Problem Management > Configuration >** Workflows.
  - b. Select **QCIntProblem** in the workflows list and click **Open**.

New open 🛞 Delete			
HP Proprietary	Name	Description	
(D)	Problem	Problem Management Workflow	
600	Problem Task	Problem Task Workflow	
	QCIntProblem	Problem Management Workflow	

- c. Select the first phase in the workflow graph.
- d. Click the Rule Sets tab and then the Initialization tab.

e. Click Add and select the initialization rule set you just created.



10. Repeat steps 4 and 5 for the **On display** and **On enter** tabs.

Requirement to Deploy Concept and Configuration Guide Chapter 9: Creating an SM Problem from ALM Defect

#### 11. Select the **On enter** tab and select the Validation rule set you just created.



#### 12. Click Save.

This concludes configuration on the Service Manager side. The result of the above modification allows storage of ALM Defect-specific data in Service Manager Problem tables.

## Configuring Application Lifecycle Management

The following procedure describes how to configure Application Lifecycle Management (ALM) and includes:

- Adding custom fields to ALM entities (Defects) to store data from Service Manager Problem
- Creating workflow rules that will lock specific fields once the user chooses to create a Problem record based on Defect information
- Creating a filter for defects designated to be synchronized with Service Manager Problems

This section contains the following steps:

Step 1: Creating an Integration Account	. 151
Step 2: Adding the Newly Created User Account to ALM Projects	151
Step 3: Modifying ALM Defects Module Fields	153
Step 4: Creating a Filter in ALM	. 155

## Step 1: Creating an Integration Account

## To create an integration account that will be used by ALM Synchronizer to connect to ALM:

- 1. In ALM Site Administration, navigate to the Site Users tab and click the Add User button.
- 2. Fill in the details as shown in the following figure:

Application Lifecycle Management – Site Administration         Tools + Help +         Site Projects       Lab Management         Site Projects       Lab Management         Site Projects       Lab Management         Site Projects       Lab Management         Site Users       Site Connections       Licenses         Site Projects       Lab Management       Site Users         Site Projects       Lab Management       Site Users         Site Connections       Licenses       Servers       C         Site Viser Name       Full Name       admin       admin         User Name:       SMALMIntUser       SMALM Integration User Account       E-mait         Phone Number:       Phone Number:       Phone Number:       SMALMINE
Tools +       Help +         Site Projects       Lab Management       Site Users       Site Connections       Licenses       Servers       C         Image: I
Site Projects       Lab Management       Site Users       Site Connections       Licenses       Servers       C         Image: Im
Image: Small state       Image: Sm
admin  Admin Admin Admin  Admin Admi
New User     X       User Name:     SMALMIntUser       Full Name:     SM ALM Integration User Account       E-mail:
New User     X       User Name:     SMALMIntUser       Full Name:     SM ALM Integration User Account       E-mail:     Phone Number:
User Name: SMALMintUser Full Name: SM ALM Integration User Account E-mail: Phone Number:
User Name: SMALMIntUser  Full Name: SM ALM Integration User Account  E-mail:  Phone Number:
Full Name: SM ALM Integration User Account E-mail: Phone Number:
E-mail:
Phone Number:
Phone Number:
Description
between HP Service Manager and HP ALM
products.
OK Cancel Help

## Step 2: Adding the Newly Created User Account to ALM Projects

To add the newly created user account to ALM projects where the synchronization is needed:

- 1. Log on to the ALM Project as a user with Project Administration permissions and open the **Project Customization** module.
- 2. From the toolbar, select **Tools**, and then **Customize**.

3. From the left-hand navigation pane, select **Groups and Permissions**.

Application Lifecycle Management - Project Customization	
Help •	
Application Lifecycle Management - Project Customization         Help         Image: User Properties         Image: Croups and Permissions         Image: Project Lists         Image: Project Lists         Image: Project Planning and Tracking         Image: Project Planning and Tracking	
Project region l'empages Business Process Test Business Views Spiniter UJ- IDE Connector Customizer	Customize Report Templates     Customize Requirement Types     Customize Resk-Based Quality Man     Customize Sprinter     Delete Public Favorite view Folders     Delete Public Favorite Views     Manage Analysis Metus     Manage Dusiness Views     Manage Private Favorite Views     Manage Private Favorite Views     Manage Private Favorite Views     Manage Private Favorite Views
	A addity rule if avoine views      Performance Center      Set Up Alert Rules      Set Up Croups      Set Up Project Customization      Set Up Project Users      Set Up Workflow      Undo Checkouts   Impacts

4. In the Groups and Permissions pane, click the **New Group** button and create new user group named **SM Integration**.

The **Set As** field sets the permissions as defined in selected existing groups. From the **Set As** drop-down list, select **Viewer**.

New Group		X
Group Name:		
SM Integration		
Set As:		
Viewer		•
	OK Cancel Help	

- 5. From the right side of the Groups and Permissions pane, select the **Permissions** tab.
  - a. In the **Defects** tab, modify the group permissions to allow the users of the group to add and modify defects.

- b. In the Administration tab, allow the user to add and modify public and private favorite views.
- 6. Select the Membership tab and add SMALMIntUser to this new group.

## Step 3: Modifying ALM Defects Module Fields

#### To modify ALM Defects Module fields for storing SM Problem data:

- 1. Log on to the ALM Project as a user with Project Administration permissions and open the **Project Customization** module.
- 2. From the toolbar, select **Tools**, and then **Customize**.
- 3. From the left-hand navigation pane, select **Project Entitles**.



4. Add the following User fields to Defect in Project Entities:

Field Name (auto assigned)	Field Label	Field Type
BG_USER_XX	Synchronize with SM Problem	Lookup List: Yes/No (select the <b>Verify Value</b> check box)
BG_USER_XY	Problem ID	String

Project Entities				
💾 Save 🛛 🔶 New Field 👻 🗶 Delete Fie	ld			
Baselines     Build     Build     Build Antifact     Build Antifact     Build Server     Build Server	<ul> <li>Settings</li> <li>Name:</li> <li>Labet:</li> <li>Type:</li> <li>Length</li> <li>Venity</li> <li>Allow</li> </ul>	BG_USER_01 Synchronize with SM Pi Lookup List 255 History Nasked walue Multiple Values	roblem	

- 5. Click **Save** to apply changes.
- 6. Click **Workflow > ScriptEditor**.
- 7. Select the **Defects** module script.

8. Add the following lines to the **Bug\_New** and **Bug\_Moveto** subroutines (substitute XX and XY with actual field numbers).

Note: We set the fields to be read-only once the user selects **Yes** in the **Synchronize with SM Problem** field.

if (Bug\_Fields("BG\_USER\_XX").Value="Y") then
Bug\_Fields("BG\_USER\_XX").IsReadOnly=True
end if
Bug\_Fields.Field("BG\_USER\_XY").IsReadOnly=True

- 9. Save the updated Workflow scripts.
- 10. Click the **Return** button and return to main ALM screen.
- 11. In the Customization Changes dialog box, select the **Major Change** radio button and click **OK**.

## Step 4: Creating a Filter in ALM

## To create a defects filter that ALM Synchronizer uses to identify defects whose data needs to be synchronized with Service Manager:

- 1. Log on to ALM with the **SMALMIntUser** integration account.
- 2. In the **Defects** module, click **View > Filter > Sort > Set Filters/Sort**.

**Note:** The purpose of this view is to make ALM Synchronizer correctly filter those defects to be synchronized to Service Manager as problems. If the implemented process requires a more strict selection—for example, limit only defects in specific state—include those in the filter as well.

ilter defects		X
y 🖻 🗋		
Filter: Synchronize with SM P	Problem[Y]	
Filter Cross Filter View	w Order Group	
Field Name	Filter Condition	
Detected in Cycle		
Detected in Release		
Detected in Version		1
Detected on Date		
Estimated Fix Time		
Modified		
Planned Closing Version		
Priority		
Problem ID		
Project		
Reproducible		
Severity		
Status		
Subject		
Summary		
Synchronize with SM Prob	Y	
Target Cycle		
Target Release		
L		ر ندر ا
	OK Cancel Help	

- 3. Set Synchronize with SM Problem to Y.
- 4. Add a view to Favorites:
  - Name. Synchronize with SM Problem
  - Location. Private
- 5. Log out.

## ALM Synchronizer

This section contains the following topics:

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Configuring ALM Synchronizer	. 157
Creating Synchronizer Link	. 159
Working with Field Mapping	. 164

## Installing ALM Synchronizer

 Download ALM Synchronizer from HP Live Network (https://hpln.hp.com/group/synchronizer-content-alm) and extract the archive.

Note: This requires an HP Passport account with a User Name and Password.

- 2. Execute **setup.exe** to set up the ALM Synchronizer Server and follow the Installation Wizard. The Configuration Wizard opens.
- 3. Follow the Configuration Wizard and provide the appropriate requested values for the environment (for instance, details such as the ALM version number, system credentials to run as a service, and so on).
- 4. Execute **HP\_ALM\_Sync\_Client\_1.msi** to set up the ALM Synchronizer client following the Installation Wizard.

Note: The only input needed is the destination folder.

## Configuring ALM Synchronizer

1. Download the content package for ALM Synchronizer from HP Live Network (https://hpln.hp.com/page/defects-and-requirements-exchange-hp-servicemanagerservicecenter-and-hp-alm) and extract the archive on the ALM Synchronizer machine. 2. From the **Adapters** folder in the content package, copy the 10 .jar files to the ALM Synchronizer installation folder under the adapters\lib directory.



- 3. Generate and deploy the stub:
  - a. Verify the Service Manager service is up and running.
  - b. In the extracted files from the content package, locate and edit the build.properties file. Update the sample URL with actual values for the Service Manager server host, port, and the corresponding Web service name (Web service endpoint configured in the Service Manager Configuration section).

For example,

http://<sm server host>:<sm server port>/SM/7/QCIntProblemService.wsdl

Validate that the URL is accessible from the ALM Synchronizer machine using a Web browser.

- c. Restart the ALM Synchronizer service. This will extract the Service Manager Problem Management folder in the ALM Synchronizer install\adapters\dat folder.
- d. Copy the configuration\_file\_default.xml example configuration file from the **content package\sample** folder to the **ALM Synchronizer\adapters\SM ProblemManagement** folder and edit it according to the specific customer environment.

**Note:** Field types and allowed values for field lists may be significantly different from out-of-the-box values.

For more details about configuration file editing, see "Editing the Configuration Files" in Chapter 3, "Installing and Configuring QC/ALM Synchronizer" in *HP Defects and Requirements Exchange with HP Service Manager/ServiceCenter and HP Quality Center/Application Lifecycle Management Installation and Administration Guide*.

## Creating Synchronizer Link

In order to create a synchronizer link, install the ALM client and ALM connectivity tool from the ALM add-ons page. Open the ALM Synchronizer client and connect to the synchronizer server.

#### To create a new synchronization link:

- 1. In the menu near the top of the screen, select Link > Create.
- 2. In the Create Link wizard, fill in the following values:
  - a. In the Step 1 of 4 General Properties dialog box, enter the Link name and Description (optional). For Endpoint 2 type, select SM ProblemManagement.

📆 Create Link - Step 1	of 4 - General Prop	perties	×
Create Link - Step 1	of 4 - General Prop Assign gene Link name: Description: Endpoint 1 type: Endpoint 2 type:	A properties:	×
		< <u>Back</u> Next > Cancel	

Click Next.

b. In the Step 2 of 4 – HP-ALM Endpoint dialog box, enter the ALM connection details; including the User name and Password, as well as the ServerURL (in form of http://<hostname>:<port>/qcbin), Domain, and Project.

🏋 Create Link - Step 2	of 4 - HP-ALM	Endpoint		×
ALM Synchronizer	Assign H User name: Password:	P-ALM endpoint ( admin	connection properties:	_
	Parameter		Value	
	ServerURL		http://myd-vm01999.hpswlabs.adapps.h	
	Domain		DEFAULT	
	Project		R2D	
	,	<u>s</u>	et Connection Check Connectivit	el

Click Next.

c. In the Step 3 of 4 – SM Problem Management Endpoint dialog box, enter the Service Manager connection details; including the User nameand Password, QC/ALM Project details (in the form of <ALM hostname>/Domain/Project), Web Service URL, as well as the edited configuration.xml (Configuration File Name) from step 3.d of Configuration of ALM Synchronizer.

🏋 Create Link - Step 3	of 4 - SM Proble	nManagement Endpoint 🛛 🔀
ALM Synchronizer	Assign SM User name: Password:	ProblemManagement endpoint connection prope SAMALMIntUser
	Paramatar	Value
	Parameter OC Project	have be adapted by any OCCAULT OCO
	UL Project	.npswiabs.adapps.np.com/DEFAUL1/H2D
	Configuration	File Name
	Service URL	http://myd-vm02031.hpswlabs.adapps.h
		<u>Check</u> Connectivity < <u>B</u> ack <u>Next</u> > <u>C</u> ancel

Click Next.

d. In the Step 4 of 4 – Entity Types dialog box, select the appropriate entity types. In the R2D use case, the relevant entities are **Defect** on the ALM side and **Problem by Defect** on the Service Manager side.

🏋 Create Link - Step 4	of 4 - Entity Types	E
✓ ✓	Select entity types:	
ALM	Endpoint 1 (HP-ALM):	Defect
Synchronizer	Endpoint 2 (SM ProblemManagement):	Problem by Defect
		< Back Finish Cancel

e. Click Finish.

3. Once the link is created, go to the **Filters** tab.

In the HP ALM section, select the **Use filter (for creation events)** radio button. In the drop-down dialog box, select the favorite which was created in the ALM project configuration phase chapter.

eneral Connectivity Scheduling Filters Rules Field Mapping Adv	anced
🕀 Refresh Filter Lists	
HP-ALM	SM ProblemManagement
C No Filter	No Filter
<ul> <li>Use filter (for creation events);</li> </ul>	C Use filter (for creation events):
Public: Synchronize with SM Problem	v
	·

4. Select the **Rules** tab and verify that the entity creation rules are appropriate. The default suggested rules are shown in the following figure:

P-ALM	SM ProblemManagement
Creation	Creation
When a record is created in this endpoint	When a record is created in this endpoint
Create a corresponding record in the other endpoint	Create a corresponding record in the other endpoint
C Do nothing	O Do nothing
Update	Update
When a record is updated in this endpoint	When a record is updated in this endpoint
O Update its corresponding record in the other endpoint	Output the state of the stat
C Do nothing	○ Do nothing
Deletion (Full Synchronization Only)	Deletion (Full Synchronization Only)
When a record is deleted from this endpoint	When a record is deleted from this endpoint
© Do nothing	O nothing
C Delete its corresponding record in the other endpoint	C Delete its corresponding record in the other endpoint
C Recreate based on its corresponding record in the other endpoint	C Recreate based on its corresponding record in the other endpoint

5. Select the **Field Mapping** tab and map the fields between ALM Defect and SM Problem.

For complete details about this process, see Chapter 4, "Configuring Links in QC/ALM Synchronizer" in *HP Defects and Requirements Exchange with HP Service Manager/ServiceCenter and HP Quality Center/Application Lifecycle Management Installation and Administration Guide*.

## Working with Field Mapping

HP Defects and Requirements Exchange with HP Service Manager/ServiceCenter and HP Quality Center/Application Lifecycle Management Installation and Administration Guide shows the field mapping chain. The fields which need to be mapped are different in each specific customer environment, thus this process has to be done in each implementation project. For more information, see Chapter 4, "Configuring Links in QC/ALM Synchronizer" in the document.



#### To work with Field Mapping:

1. Identify the required fields to create an ALM entity (Defect). In the out-of-the-box ALM version 11.52 environment, the fields are:

Field name in ALM User Interface	Field in ALM Database
Summary	BG_SUMMARY
Detected By	BG_DETECTED_BY
Severity	BG_SEVERITY
Detected On Date	BG_DETECTION_DATE

2. Identify additional optional fields which provide value if synchronized from ALM to Service Manager—Description, Defect status, and so on. This requires an appropriate modification of the database schema, forms, and Web service endpoint on the Service Manager side.

 Identify the required fields to create a Service Manager entity (Problem record). In Service Manager version 9.32 (with Service Manager Process Designer Content Pack installed), the fields are:

Caption in SM User Interface	Field in SM Database	Caption in Web Service	Туре
* Problem ID	id	SMProblemID	StringType
** N/A	sysmodtime	Modified	DateTimeType
Title	brief.description	Title	StringType
Description	description	Description	StringType
Affected Service	affected.item	AffectedService	StringType
Impact	initial.impact	Impact	StringType
Category	category	Category	StringType
Area	subcategory	SubCategory	StringType
Urgency	severity	Urgency	StringType
* Synchronize with ALM	qcintegration.type	QCIntegrationType	StringType
* Defect ID	qcintegration.id	QCEntityID	IntType
* Server/Domain/Project	qcintegration.project	QCProject	StringType
* Created From	qcintegration.created.from	CreatedFrom	StringType

Those values can be provided as constant values (simple case) or mapped to a custom value list in ALM.

\* Not mandatory fields per say, but are required for enabling the integration.

** This field caption m	ust be as shown in the fo	llowing figure:
-------------------------	---------------------------	-----------------

🔚 OK  Cancel 🔂 Add	💾 Save   🗑 Delete 🔾	🔾 Find 📑 Fill
External Access Definit	ion	
Service Name: C Name: r Object Name: C	CIntProblemService ootcause CIntProblem vressions 🔗 Fields 🛯	Released  Released  Restful
Field	Caption	Type
aciptedration created fr	om CreatedFrom	StringType
acintegration id	OCEptityID	IntType
acintegration, project	OCProject	StringType
acintegration type	OCIntegrationT	vne StringType
id	ProblemID	StringType
category	Category	StringType
brief description	Title	StringType
description	Description	StringType
affected item	ImpactedSystem	n StringType
roStatus	Status	StringType
current phase	CurrentPhase	StringType
subcategory	SubCategory	StringType
initial impact	Urgency	StringType
severity	Severity	StringType
isKnownError	IsKnownError	StringType
sysmodtime	Modified	DateTimeType
	, isainoa	Date Milerype

4. Identify additional optional fields that provide value if synchronized from Service Manager to ALM and add them to the mapping. It is important to include:

SM web service side	Direction	ALM Side	Comment
ProblemID	÷	Problem ID	Required for traceability between the ALM Defect and the SM Problem
QCEntityID	÷	Defect ID	Required for traceability between the SM Problem and the ALM Defect
QCIntegrationType	÷	Constant value:1	Needed to lock the appropriate fields on the SM side

SM web service side	Direction	ALM Side	Comment
QCProject	÷	Constant value: <alm hostname&gt;/Domain/Project</alm 	Value must be one of the values defined for the global list in the Configuring Service Manager > Step 3 > step 4.a.
CreatedFrom	÷	Constant value: ALM Defect	
Constant value: Y	<i>&gt;</i>	Synchronize with SM Problem	

- 5. Click **Save** to save the resulting link configuration.
- 6. A warning about an unvalidated link will appear. Click **Yes** to begin an integrity check. This is a basic setup check that confirms that the fields configured as mandatory in both products are mapped to values and field types that match.

Run Inte	grity Check 🛛 🔀
?	The link is currently unvalidated. To validate it, you must run an integrity check. Do you want to run an integrity check now?
	<u>Yes</u> <u>N</u> o

7. In case of a failed validation check, update the mapping according to the error messages shown in **Run Report**. To view the report, click the **View Report** button.

IP-ALM	I Defect Schema	Tupe	Attribute	n Manned		SM Proble	mManagement Pro	blem by Defect Sch	ema Altributes	Marcoa
Actu	ual Fix Time	Number	BW	No No		Allach	ments	Attachment	SW.	Yes
AGN	M Defect ID	Number	BW	No		Colea	DIV	Single value list	BW.	Yes
Assi	igned To	User list	RW	No		Create	aFrom	String	RW.	Yes
🔹 Atta	schments	Attachment		Yes	- 001	Curren 🖾	tPhase	String	BW	No
🛛 Cau	used By Code Change	String	RW	No		Descri	iption	String	RW	Yes
Clos	sed In Build	String	RW	No		🏚 Impaci	tedSystem	String	RW.	Yes
🛛 Clos	sed in Version	Single value lis	t RW	No		🔁 IsKnov	wnError	String	ßW -	Yes
🖾 Clos	sina Date	D							DO N	bl -
× ¥ Mapper	Gheck Field Mapping	Import	RW Export	No	-	Modifie	ed Mapping Properti	Date	Field Prop	NO Derties
× × Mapper Type	Check Field Mapping Fields HP-ALM Field	Date Import	RW Export	No 4 ProblemMana	gement	Modifie	ed Mapping Properti <b>Misc</b> Direction Value	Date ies Value Mapping	Field Prop	NO Derties
X X Mapper Type	Check Field Mapping     d Fields     HP-ALM Field     Attachments	Date	Export ction SN Fie Att	No 4 ProblemMana eld achments	gement	Modifie	ed Mapping Properti Direction Value	Date ies Value Mapping > 1	Field Prop	NO Derties
X X Mapper Type	d Fields HP-ALM Field Mapping Altachments Description	Date     Date     Dire     C>	RW Export ction SM Fie Att. De	No 4 ProblemMana eld achments scription	gement	Modifie	ed Mapping Properti Direction Value	Date ies Value Mapping > 1	Field Prop	NO perties
× × Mapper Type C C C	d Fields HP-ALM Field Mapping HP-ALM Field Attachments Description Summary	Date     Import     Dite     (>     (>	FW Export ction SM Fie Att. De Titl	No 4 ProblemMana eld achments scription le	gement	Modifie	ed Mapping Propetti Direction Value	Date ies Value Mapping  1	HW Field Prop	NO perties
× × Mapper Type C C C C C	d Fields HP-ALM Field Mapping HP-ALM Field Attachments Description Summary Phiority	Date           + Import           0ire           <>           <>           <>	Flw Export SM Fie De Titl Urg	No 4 ProblemMana eld achments scription e pency	gement	Modifie	ed Mapping Propetti Misc Direction Value Direction The field mapping	Date ies Value Mapping 1 1 ig direction	Field Prop	NO perties
X X Mapper Type C C C C C C C C C C C C C C	d Fields HP-ALM Field Mapping d Fields HP-ALM Field Attachments Description Summary Priority Severity	Date           +         Import           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0	FIW Export SN Att. De Titl Urg Se	No 4 ProblemMana, eld scription e gency verity	gement	A Modifie	ed Mapping Properti Misc Direction Value Direction The field mappin	Date ies Value Mapping 1 1 Ig direction	Field Prop	NO perties
× × fapper Type C C C C C C C C C C C C C	d Fields HP-ALM Field Mapping d Fields HP-ALM Field Attachments Description Summary Priority Severity	Date           +         Import           0         ()           ()         ()           ()         ()	RW ►Export Ction SN Fie Att. De Titl Se Se	No 4 ProblemMana eld achments scription e gency verity	gement	Nodifie	ed Mapping Propett Misc Direction Value Direction The field mappin	Date ies Value Mapping 1 1 ig direction	Field Prop	NO perties

8. In the menu near the top of the screen, select Link > Enable Link.

The link is enabled.

9. In the menu near the top of the screen, select **Run Task > Run Full Synchronization**.

The synchronization task runs.

## Verification

Note: This procedure is to verify that the implementation was done successfully.

#### To validate the integration was set up successfully:

- 1. Log on to the ALM Client and create a defect:
  - a. Fill in the mandatory fields and any optional fields which were added in the field mapping phase.
  - b. Open a defect details form and modify the Synchronize with SM Problem field to Y.
- 2. Open the ALM Synchronizer client and run the **Incremental Synchronization** task. Review the task execution result report. If at least one entity was created in an SM endpoint, proceed further.
- 3. Log on to Service Manager.
  - a. In Problem Management, select **Search Problem**, and do a true search.
  - b. Go to the last Results page and review the latest problem records.
  - c. By referring to its title, locate the problem that was opened from **ALM Defect ()** and review its details. Verify that all mapped information has passed from ALM Defect to SM Problem.

# Chapter 10: Synchronizing Cls between UCMDB and SM

#### This chapter includes:

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Setting Up UCMDB for Integration with SM Using ServiceManagerAdapter9-x	171
Setting Up SM for Integration with UCMDB	175
Verification	176
Setting Up UCMDB for Integration with SM Using ServiceManagerAdapter7-1	177
Setting Up SM for Integration with UCMDB	180
Verification	182

## Overview

This section describes the necessary steps to configure and verify the integration between HP Universal CMDB (UCMDB) and HP Service Manager (SM).

Typically, UCMDB uses one or more discovery mechanisms (feeders) to automatically detect configuration item (CI) attribute values.

In the context of the Requirement to Deploy Value Stream, this integration allows the synchronization of configuration data for managed services between UCMDB and Service Manager. Having an up-to-date state of the configuration is essential for managing associated change requests that are part of deploying new or modified services.

For more information, see Integration ID#101: CI sync and actual state federation (UCMDB to SM) in **HP Software Solutions Now**.

The following diagram illustrates the relationship between the products for this integration:



# Setting Up UCMDB for Integration with SM Using ServiceManagerAdapter9-x

This section describes the steps necessary to configure UCMDB in order to perform the integration with SM using ServiceManagerAdapter9-x.

This section contains the following topics:

Prerequisites	172
Configuring SM Adapter in UCMDB	172
Creating a New Integration Point	173
Setting Up the Data Push Job	174
Running the Data Push Jobs	174

## Prerequisites

The following products must be installed:

- Log on to your UCMDB system as an administrator.
- Verify that all UCMDB services are running.

## Configuring SM Adapter in UCMDB

#### To configure the SM adapter in UCMDB:

- 1. Browse to your UCMDB user interface.
- 2. Select the Data Flow Management tab.
- 3. Select Adapter Management.
- 4. From the resources window, select ServiceManagerAdapter9-x and expand it.
- 5. Expand the **configuration files** item.
- 6. Select ServiceManagerAdapter9-x/sm.properties from the list of items.
- 7. In the pane on the right side of the window, modify the **use.global.id** parameter, set it to **false**, and click **OK**.

## **Creating a New Integration Point**

#### To create a new integration point:

- 1. Navigate to **Data Flow Management > Integration Studio**.
- 2. In the Integration Point pane, click the **Create New Integration Point** button. The Create New Integration Point dialog box opens.

Enter the following information:

Name	Recommended Value	Description
Integration Name	SM Integration	Name you give to the integration point
Adapter	<user defined=""></user>	Select the appropriate adapter for the version of SM that you are using
ls Integration Activated	selected	Select this check box to create an active integration point
Hostname/IP	<user defined=""></user>	Name of the SM server
Port	<user defined=""></user>	Port through which you access SM
Credentials	<user defined=""></user>	<ul> <li>If SM credentials appear in the Credentials column, select them.</li> <li>If no SM credentials appear, select Generic Protocol and click the Add new connection details for selected protocol type button.</li> <li>Enter the following information:</li> <li>Description. Enter Service Manager.</li> <li>User Name. Enter the SM user name. The default value is falcon.</li> <li>User Password. Enter and confirm a password.</li> </ul>
Probe Name	<user defined=""></user>	The probe is selected from a drop-down list. This is the same probe that is being used for the UCMDB – BSM integration.

**Note:** It is recommended to click the **Test Connection** button to verify that the details entered are working before continuing.

- 3. Click OK.
- 4. On the Federation tab, verify the Incident, Problem, and RequestForChange CI types are checked and click the Save Integration button.

### Setting Up the Data Push Job

#### To push CIs and Relations from UCMDB to SM:

- 1. Edit the **SM Push** job.
- 2. Select Scheduler Definition.
- 3. For the **Repeat** field, select **Changes Sync/All Data Sync**.
- 4. Set the **Repeat Every** field to **1 Day**.
- 5. Click **OK**.

### Running the Data Push Jobs

#### To run the data push jobs:

- 1. In the Integration Point pane, select the correct integration.
- 2. Select the **Data Push** tab. The Job Definition pane appears.

Note: The Changes job must be run before the RMI job.

- 3. Select your job and click **Synchronize All** to run the push job.
- 4. When the Confirm synchronizing window appears, click **Yes**.
- 5. Click the **Statistics** tab to view the progress of the synchronization.
- 6. Click **Refresh** to view the updated synchronization status.

## Setting Up SM for Integration with UCMDB

This section describes the steps necessary to configure SM in order to perform the integration with UCMDB.

This section contains the following topics:

## Prerequisites

The following products must be installed:

- Log on to your UCMDB system as an administrator.
- Verify that all UCMDB services are running.

## Adding the UCMDB Connection Information to the System Information Record

#### To add the UCMDB connection information to the system information record:

- 1. Log on to your Service Manager system as an administrator.
- Navigate to System Administration > Base System Configuration > Miscellaneous > System Information Record.
- 3. Select the Active Integrations tab.
- 4. Select the HP Universal CMDB option. The form appears in the UCMDB Web service URL field.
- 5. In the UCMDB Web service URL field, enter the URL to the UCMDB Web service API.

The URL has the following format:

http://<UCMDB server name>:<port>/axis2/services/ucmdbSMService

6. In the UserId dialog box, enter your UCMDB user name and password and click Save.

## Verification

Note: This procedure is to verify that the implementation was done successfully.

#### To verify the UCMDB – SM integration:

- 1. Browse to your UCMDB server.
- 2. Navigate to Managers > Modeling > CI Type Manager.
- 3. Under ConfigurationItem > InfrastructureElement, click Node.
- 4. Right-click a Node object and select **Show CIT Instances**. The CIT Instances window for the selected Node object appears.
- 5. From the list of CIT instances, select one CI and right-click **Properties**. The Configuration Item Properties window appears showing the UCMDB ID at the top of the window.
- 6. Click **OK**. The Configuration Item Properties window closes.
- 7. Click **OK**. The Show IT Instances window closes.
- 8. Browse to your SM server.
- 9. Navigate to Configuration Management > Resources > Search Cls.
- 10. Click the **Search** Search button.
- 11. Click More on selected CI.
- 12. Select Modify Columns.
- 13. Click the down arrow and select your UCMDB ID, then click **Proceed**.
- 14. Verify that all the CIs from UCMDB are listed in SM and select the **Actual State** tab to view the CI properties in UCMDB.

## Setting Up UCMDB for Integration with SM Using ServiceManagerAdapter7-1

This section describes the steps necessary to configure UCMDB in order to perform the integration with SM using ServiceManagerAdapter7-1.

This section contains the following topics:

Prerequisites	177
Configuring SM Adapter in UCMDB	. 177
Creating a New Integration Point	178
Setting Up the RMI Job	. 179
Setting Up the Changes Job	179
Running the Data Push Jobs	. 179

## Prerequisites

The following products must be installed:

- Log on to your UCMDB system as an administrator.
- Verify that all UCMDB services are running.

## Configuring SM Adapter in UCMDB

#### To configure the SM adapter in UCMDB:

- 1. Browse to your UCMDB user interface.
- 2. Select the Data Flow Management tab.
- 3. Select Adapter Management.
- 4. From the resources window, select ServiceManager Adapter7-1 and expand it.
- 5. Expand the **configuration files** item.
- 6. Select ServiceManagerAdapter7-1/sm.properties from the list of items.
- 7. In the pane on the right side of the window, modify the **use.global.id** parameter, set it to **false**, and click **OK**.

## **Creating a New Integration Point**

#### To create a new integration point:

- 1. Navigate to **Data Flow Management > Integration Studio**.
- 2. In the Integration Point pane, click the **Create New Integration Point** button. The Create New Integration Point dialog box opens.

Enter the following information:

Name	Recommended Value	Description
Integration Name	SM Integration	Name you give to the integration point
Adapter	<user defined=""></user>	Select the appropriate adapter for the version of SM that you are using
Is Integration Activated	selected	Select this check box to create an active integration point
Hostname/IP	<user defined=""></user>	Name of the SM server
Port	<user defined=""></user>	Port through which you access SM
Credentials	<user defined=""></user>	If SM credentials appear in the Credentials column, select them. If no SM credentials appear, select Generic Protocol and click the Add new connection details for selected protocol type D button. Enter the following information: Description. Enter Service Manager. User Name. Enter the SM user name. The default value is falcon. User Password. Enter and confirm a password.

**Note:** It is recommended to click the **Test Connection** button to verify that the details entered are working before continuing.

- 3. Click OK.
- 4. On the Federation tab, select the Incident, Problem, and RequestForChange CI types and click the Save Integration button.

## Setting Up the RMI Job

#### To replicate the relations from UCMDB to SM:

- 1. Edit the SM Topology Comparison Push job.
- 2. Select Scheduler Definition.
- 3. For the **Repeat** field, select **interval**.
- 4. Set the **Repeat Every** field to **1 Day**.
- 5. Click OK.

### Setting Up the Changes Job

#### To replicate CIs from UCMDB to SM:

- 1. Edit the SM History-based Push job.
- 2. Select Scheduler Definition.
- 3. For the **Repeat** field, select **interval**.
- 4. Set the **Repeat Every** field to **1 Day**.
- 5. Click **OK**.

### Running the Data Push Jobs

#### To run the data push jobs:

- 1. In the Integration Point pane, select the correct integration.
- 2. Select the **Data Push** tab. The Job Definition pane appears.

Note: The Changes job must be run before the RMI job.

- 3. Select your job and click **Synchronize All** to run the replication job.
- 4. When the Confirm synchronizing window appears, click **Yes**.
- 5. Click the **Statistics** tab to view the progress of the synchronization.
- 6. Click the **Refresh** button to view the updated synchronization status.

Note: Follow the same procedure for the RMI and Changes jobs.

## Setting Up SM for Integration with UCMDB

This section describes the steps necessary to configure SM in order to perform the integration with UCMDB.

This section contains the following topics:

Prerequisites	180
Adding the UCMDB Connection Information to the System Information Record	180

## Prerequisites

The following products must be installed:

- Log on to your UCMDB system as an administrator.
- Verify that all UCMDB services are running.

## Adding the UCMDB Connection Information to the System Information Record

#### To add the UCMDB connection information to the system information record:

- 1. Log on to your Service Manager system as an administrator.
- Navigate to System Administration > Base System Configuration > Miscellaneous > System Information Record.
- 3. Select the Active Integrations tab.
- 4. Select the **HP Universal CMDB** option. The form appears in the UCMDB Web service URL field.
- 5. In the UCMDB Web service URL field, enter the URL to the HP Universal CMDB Web service API.

The URL has the following format:

http://<UCMDB server name>:<port>/axis2/services/ucmdbSMService

6. In the UserId dialog box, enter your **UCMDB user name** and **password** and click **Save**.

# Verification

Note: This procedure is to verify that the implementation was done successfully.

### To verify the UCMDB – SM integration:

- 1. Browse to your UCMDB server.
- 2. Navigate to Managers > Modeling > CI Type Manager.
- 3. Under ConfigurationItem > InfrastructureElement, click Node.
- 4. Right-click a Node object and select **Show CIT Instances**. The CIT Instances window for the selected Node object appears.
- 5. From the list of CIT instances, select one CI and right-click **Properties**. The Configuration Item Properties window appears showing the UCMDB ID at the top of the window.
- 6. Click **OK**. The Configuration Item Properties window closes.
- 7. Click **OK**. The Show IT Instances window closes.
- 8. Browse to your SM server.
- 9. Navigate to Configuration Management > Resources > Search Cls.
- 10. Click the **Search** Search button.
- 11. Click More on selected CI.
- 12. Select Modify Columns.
- 13. Click the down arrow and select your UCMDB ID, then click **Proceed**.
- 14. Verify that all the CIs from UCMDB are listed in SM and select the **Actual State** tab to view the CI properties in UCMDB.

# Chapter 11: Viewing Agile Manager Release Information in PPM

### This chapter includes:

Overview	
Configuring Agile Manager Integration Options	
Adding an Agile Integration Configuration	
Configuring PPM Center Project	
Mapping a PPM Center Task to Agile Manager	

# Overview

The integration between HP Project and Portfolio Management (PPM) Center and HP Agile Manager (AgM) software can give you the information you need to make better business decisions, lower the cost of running both your Agile and traditional development projects, increase collaboration between business and IT, and improve application quality. We will explore how Agile development can be aligned with the basic principles of Project and Portfolio Management to make sure that IT objectives meet the company's business goals.

PPM Center integrates with Agile Manager using the HP PPM Plug-in for Agile integration. The integration between PPM Center and Agile Manager allows project managers, program managers, portfolio managers, and other project stakeholders to have:

- Visibility into the real-time status and progress of Agile development projects from within PPM Center, without having to log on to Agile Manager for details;
- A consolidated view of their tasks and Agile development initiatives

The integration allows project managers to map a task under a project to a specific release managed in Agile Manager. Each PPM Center task is associated with a single release in Agile Manager throughout the task life cycle. This is a one-way one-to-one mapping relationship. This association begins when a project manager maps one task to a specific release.

After the mapping relationship is established, the project managers are able to view real-time Agile development related charts retrieved from Agile Manager. In addition, project managers can also view the overall release hierarchy information of a specific work package from within PPM Center.

For more information, see Integration ID#634: Agile Integration Solution (PPM – Agile Manager) in **HP Software Solutions Now**.



### The following diagram illustrates the relationship between the products for this integration:

# **Configuring Agile Manager Integration Options**

### To configure the Agile Manager integration options:

- 1. Download and install the HP PPM 9.22 Plug-in for Agile Integration. Obtain the plug-in bundles from HP Live Network:
  - a. Go to the PPM Community on HP Live Network.
  - b. On the PPM Community home page, click Content Catalog.
  - c. Click Agile Manager Integration Plug-in for PPM (where HP is the provider).
  - d. Click Downloads.

The Agile Manager Integration Plug-In for PPM – Downloads page opens.

- e. Click the HP Agile Manager Connector for PPM 9.30 folder.
- f. Click **ppm-930-AgileManagerConnector.zip** to download the package. This package contains the **ppm-930-Connector-AGM.jar** bundle.
- 2. Stop the PPM Server.
  - a. In the PPM Server, open a command line.
  - b. Go to the **<PPM home>\bin** folder.
  - c. Run the following script: sh kStop.sh -now -user <admin\_user>
- 3. Unzip the package and copy the bundle to the **<PPM\_Home> directory**.

- 4. Deploy the bundle by running the following command from the **<PPM\_Home>/bin directory**:
  - sh ./kDeploy.sh -i Connector-AGM
- 5. Start PPM Server.
  - a. In the PPM Server, open a command line.
  - b. Go to the **<PPM home>\bin** folder.
  - c. Run the following script: sh kStart.sh

# Adding an Agile Integration Configuration

### To add an Agile integration configuration:

- 1. Log on to PPM Center with administrative privileges.
- 2. From the menu bar, select **Open > Administration > Integrations**.
- 3. In the navigation pane, click the **Hybrid Project** tab.
- 4. In the Instances section, to the right of HP Agile Manager 1.0, click +.

5. Complete the fields described in the following table:

Field (Required)	Description
*Instance Name	Specify a unique name for the target Agile Manager server
*Base URL	URL of the HP Agile Manager server you want to integrate with Format of the URL: http(s):// <agile_server_address>:<port></port></agile_server_address>
*Proxy Host	Host name of the proxy if you have configured the proxy for the PPM Server to access the Internet
Proxy Port	Port of the proxy if you have configured the proxy for the PPM Server to access the Internet
Use Global Proxy	Flag whether or not to use the proxy specified in the parameter HTTP_PROXY_ URL.
	For more information, see "Configuring Global Proxy" on page 112 of the HP Solution and integration Guide for PPM version 9.30.

6. Click Save.

# **Configuring PPM Center Project**

In order to map a PPM Center task to an Agile Manager project, the project to which the task belongs must be set as a Hybrid Project.

### To set the task as a Hybrid Project:

- 1. Log on to PPM Center.
- 2. From the menu bar, select **Search > Projects**.

The Search Projects page opens.

3. Locate and open the desired project.

In the upper right-hand corner of the **Project Overview** page, click **Settings**.

- 4. In the left-hand pane, click the **Hybrid Project** tab.
- 5. Select the Set the current project as a Hybrid Project option.
- 6. Click **Done**. The setting is saved.

# Mapping a PPM Center Task to Agile Manager

Note: This procedure is for validation only. It is not mandatory for an R2D configuration.

### To associate an Agile release as a sub-project to a PPM Center task:

- 1. Log on to PPM Center with administrative privileges.
- 2. From the menu bar, select **Search > Projects**. The **Search Projects** page opens.
- 3. Locate and open the desired project.
- 4. On the **Project Summary** tab of the **Project Overview** page, click **Edit Work Plan** in the Work Plan portlet.

The Work Plan for <Project\_Name> page displays.

- 5. Open the **Task Details** page for the desired task that you want to associate to, and go to the **Hybrid Project** tab.
- 6. Select Start Mapping.

Schedule	Resources	Notifications	Notes	References	Hybrid Project
u can assoc	iate either of the follo	owing as a subproject	to this task:		
Another PPM pro An agile applica	oject (also known as waterfa tion development project tha	ll project), or, t is managed within an agile de	evelopment manageme	nt tool, if your administrato	r has deployed the Agile Integration Plugins.

The Hybrid Project section displays Step 1: Select Instance.

7. From the **Select Instance** drop-down list, select an instance of the appropriate agile project with the Agile Manager icon in front of the instance name.

Schedule	Resources	Notifications	Notes	References	Hybrid Project
Select Instance					
<b>1</b> ——		_ 2	3		
elect Instance					
EEM	<b>~</b>				

- 8. Click Next and move to Step 2: User Configuration.
- 9. In the **Username** and **Password** fields, enter the user name and password that you use to log on to Agile Manager.
- 10. Select a value from the drop-down list for each of the **Domain**, **Project**, and **Release** fields.

Schedule	Resources	Notificatio	ns Notes		References	Operational RFC
Select Instance		User Configuration	n Con			
1-		2				
🕶 HP Aglie Manager	1.0 EEM					
*Username		*Password				
*Domain		*Project		*Relea	ise	
Show Sprint Burn Down	Chart Show Relea	ase Burn Up Chart	▼ Show Theme Status Charl	Show	Feature Status Chart	•
<b>*</b>	<b>v</b>			1		

- 11. After the mapping relationship is established, select the charts you want to display in the **Hybrid Project** the following options:
  - Show Sprint Burn Down Chart
  - Show Release Burn Down Chart
  - Show Theme Status Chart
  - Show Feature Status Chart
- 12. Click Next.
- 13. The mapping process moves to **Step 3: Confirmation**, displaying the information you provided in the User Configuration step. Click **Submit**.

The mapping relationship is established. The Agile Manager connector icon appears in the **Overall Status** section of the **Project Overview** page, indicating that the project has tasks mapped to agile projects.

# Chapter 12: Associating UCMDB Service CI with PPM Entities

### This chapter includes:

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Configuring PPM and UCMDB	. 191
Adding a Service Context from UCMDB to PPM	. 201
Verification	.205

# Overview

For service portfolio functionality, services can be associated with the Service field in HP Project and Portfolio Management (PPM) Center requests, and then labor costs can be tracked for each service. The list of services can be retrieved from HP Universal CMDB (UCMDB) in real time.

The primary goal of the Service concept is to have a place in PPM that allows users to identify the service that work is being performed against. User can specify a service attribute in a request. The service attribute is from a service list, which can be configured to be discovered from the UCMDB application in real time. From the perspective of PPM, we just need to retrieve a configuration item (CI) list of a certain CI type from UCMDB through a web service interface (SOAP) provided by UCMDB.

In the context of the Requirement to Deploy (R2D) Value Stream, this integration provides a service context for a PPM project. This service context can also be transferred to SM when submitting a request for change (RFC) from a work plan. For more information, see Integration ID#370: Retrieve Service List (PPM – UCMDB) in **HP Software Solutions Now**.



### The following diagram illustrates the relationship between the products for this integration:

# Configuring PPM and UCMDB

This section contains the following steps:

Step 1: Editing the PPM server.conf Configuration File	. 191
Step 2: Creating a Request Type Header with the Service Field	. 193
Step 3: Creating a Request Type That Uses the New Request Header Type	. 196
Step 4: Setting Up UCMDB CI Type Properties	. 199

### Step 1: Editing the PPM server.conf Configuration File

- 1. Log on to the PPM server.
- 2. Stop the PPM Server.
  - a. Log on to the PPM server as an administrator and open a command line.
  - b. Go to the **<PPM home>\bin** folder.

c. Run the following script: sh kStop.sh -now -user <admin\_user>

Note: <admin\_user> is a PPM user with administrative privileges.

- 3. Configure the server.conf file.
  - a. In the PPM Server, go to the **<PPM home>** folder.
  - b. Back up and edit the server.conf file in as follows:

If not already present, add and specify the parameters and values related to the Service Manager integration to the PPM Center server.conf configuration file, as shown in the example file below. Set the parameters in the example to match your environment.

**Note:** For more information on each parameter, see page 323 in Chapter 9 of the *HP PPM Solution and Integration Guide*.

The password for the UCMDB user is specified in UCMDB\_WS\_PASSWORD. You must encrypt this password using the kEncrypt.sh script that is located in the bin directory of the PPM Server.

The parameters can be customized. For example, you can select another CIT.

**Note:** In this example, the parameter com.kintana.core.server.SERVICE\_LIST\_ UCMDB\_CI\_TYPE=business\_service means the integration will use a CI-Type business service from UCMDB.

For more information, see Chapter 9 of the HP PPM Solution and Integration Guide.

```
#
#
#
com.kintana.core.server.SERVICE_LIST_SOURCE=uCMDB
#
#
com.kintana.core.server.SERVICE_LIST_UCMDB_CACHE_TIMEOUT=300
#
#
com.kintana.core.server.SERVICE_LIST_UCMDB_CI_
MAPPINGS=name:name,description:description
#
```

```
#
com.kintana.core.server.SERVICE_LIST_UCMDB_CI_TYPE=business_service
#
#
com.kintana.core.server.SERVICE_LIST_UCMDB_MAX_CI_NUMBER=1000
#
#
com.kintana.core.server.UCMDB_SERVER_VERSION=10
#
#
com.kintana.core.server.UCMDB_GATEWAY_URL=http://<UCMDB URL</pre>
FQDN>:8080/mam/gateway?
#
#
com.kintana.core.server.UCMDB_SERVER_URL=http://<UCMDB_URL_FQDN>:8080/ucmdb/
#
#
com.kintana.core.server.UCMDB_WS_MAX_CONNECTION_NUMBER=10
#
#
com.kintana.core.server.UCMDB_WS_PASSWORD=<ucmdb admin user password>
#
#
com.kintana.core.server.UCMDB_WS_USER=<ucmdb admin user>
```

# Step 2: Creating a Request Type Header with the Service Field

- 1. Log on to PPM Center with administrative privileges.
- 2. In PPM Center, click **Open > Administrator > Open Workbench**.
- 3. In the workbench:
  - a. Go to Demand Mgmt.
  - b. Click Request Header Types.

<u>F</u> ile <u>Edit T</u> ools N	la <u>v</u> igate	Window	Product Informati	on					
Demand Mgmt	🗑 Red	quest Heade	er Type Workbench					- d	
Deployment Mgmt	2		Queor	None					
Time Mgmt	due		Query.						
Dashboard	<u></u>	Request H	eader Type Name:						
Environments	sult		Description:	<u> </u>					
Configuration	_ <u>z</u> _		Enabled:	ALL	-	Extension:	ALL	-	
Sys Admin									
Contacts		New Requ	iest Header Type	)			Save Query)	Clear List	
Request Types Request Header Types		<b>Neo</b>							

c. In the Request Header Type Workbench dialog box, click New Request Header Type.

- d. In the new Request Header Type dialog box, do the following:
  - i. Enter the Request Header Type Name—for example, Service.
  - ii. Click the **Reference Code** field.

### iii. Click the Field Groups button.

🗑 Request Header Type : U	ntitled4 👸				- d S					
Request Header Type Name: service										
Reference Code: SERVICE										
Description:										
Description.					<u></u>					
Extension:			- Ena	bled: 💿 Yes	⊖ No					
Fields Layout Filter	Owners	hip 📔 User Dat	a References							
Prompt	Display	Display Only	Transaction Hist.	Notes Hist.	On Search/Filter Page					
⊡ Summary					▲					
Request No.:	Y	Y	N	N	N 38					
Request Type:	Y	N	N	N	Y					
Created By:	Υ	Y	N	N	Y 🚆					
Department:	Y	N	N	N	Y					
Sub-Type:	Υ	N	N	N	Y					
Created On:	Υ	Y	N	N	Y					
Workflow:	Y	N	N	N	Y					
Bogupot Ctotuo:	~	× 32	N	N						
All All New Edit Remove Field Groups  OK Save Cancel										

- iv. In the Field Groups dialog box, select the Service field group.
- v. Click OK.
- vi. Double-click the **Service** field in the Request Header Type dialog box and confirm the validation for this field is **Service List UCMDB**.

**Note:** This validation is an autocomplete list. When users select autocomplete for the Service field, this validation invokes a special command to retrieve the Service list from Universal CMDB.

As with any request field, the administrator can make the Service field optional or required.

Request Header Type : S	ervice				്മ്	×				
Request Header Type Name:	Service									
Reference Code:	SERVICE					-				
Description:										
Extension:	-	- En	nabled: 💿 Yes	<u> </u>	ło					
Fields Layout Filter	Ownership User Dat	References								
Prompt	Display Display Only	Transaction Hist.	Notes Hist.	On Search/	Filter Page	s				
Summary					-					
- Service	V N	N	N		,					
Service:	N	14	N							
				Field: Server	vice:					×
				Field Prompt	Service:		Toka	INTA_SERVICE		
				Description	: List of S	ervices	2			
•							Component Ty	e: lâuto Complete List		
	All All New I	Edit Remove Fie	eld Groups	Validation	Service Li:	stuCMDB 🎛	Component 13	Paro comprete crot		
						New Open	Multi-Select Enable	ed: () Yes	⊕ No	
Ready							Enable	ed: ) Yes	O No	
				Attributes	Default	Security				
					Section N	lame : Service	-	Display Only: O Yes	No	
				Tra	nsaction H	listory: O Yes	No     No     No	Notes History: O Yes	No	
				Display on 9	Bearch and	Filter:  Yes	○ N0	Display: () Yes	() No	
								1		
				Search Vali	dation:					
				oouron van	auton. 1		Con en			
									OK Apply	Cancel
				Ready						
					_					

- vii. Click OK.
- viii. Click OK.

# Step 3: Creating a Request Type That Uses the New Request Header Type

- 1. In PPM Center, click **Open > Administrator > Open Workbench**.
- 2. In the workbench:
  - a. Go to Demand Mgmt.
  - b. Click Request Types.

c. In the Request Type Workbench dialog box, click **New Request Type**.

<u>F</u> ile	Edit ]	Tools	Na <u>v</u> i	igate	Window	<u>R</u> equest Ty	pe	Product Information				
De	mand M	Igmt	0	Req	uest Type \	Norkbench 🖇						r ø
Dep	loyment Fime Mg	Mgmt mt	-	Query		Quen	r N	Vone				J
	Dashboa	ard		s		Request Type	e: 🗌		Created By:			
Er	nvironme	ents		esult	Reques	t Header Type	: [	E	Extension:	ALL		-
C	onfigura Svs Adm	tion in		~		Promp	t [	匪	Status:			I
	byb Adm		1			Enabled	t: Al	ALL 👻				
(	Contact Contact Reques Types	ts st			New Requ	Jest Type					Save Query Clear	List
	Reques Heade Types	st r										

- d. In the New Request Type dialog box, do the following:
  - i. Request Type Name. Select a name for the request type—for example, Service Request.

ii. **Request Header Type.** Click the **Selection** icon. The Validate dialog box opens. Select **Service** and click **OK**.

🕼 Validat	e	X
Request H	Header Type starts with:	
	Request Header Type	
ALM - Re	lease Request Header	
ALM - Re	quest for Change (RFC) Header	
DEM - Ap	plication Bug	
DEM - Ap	plication Enhancement	
DEM - Da	atabase Refresh	
DEM - Init	tiative	
Default		
PFM - As:	set	
PFM - Pro	oject	
PFM - Pro	oposal	
Program	Issue	
Program	Risk	
Project D	etails	
Project Is	sue	
Project R	lisk	
Project S	cope Change Request	
Service		•
4		
	OK Canc	el
Returned 1	18 choices.	

iii. Confirm that **Service** field is being added and click **OK**.

D Request Type : Set	rvice Request					-			- <b>6</b> 5
Request Type Name:	Service Req	uest			Re	ference Code: SE	RVICE	_REQUEST	
Creation Action Name:	Service Reg	10.00							
Category:				Rec	quest Header Ty	pe: Service			
Extension:				-					New Open
Description:									
Meta Layer View:	MREQ_	SERVICE_R	EQUEST						
Max Fields:	50			-	Enabled: () Y	es		◯ No	
Sub-Types	Workflows	User Access	N	otifications	User Data	Ownership	н	elp Content	Resources
Fields Layo	ut D	isplay Columns	F	Request Status	Statu	is Dependencies		Rules	Commands
Prompt		Token	Enabled	Component T	уре	Validati	ion		Display Only
Summary									
+ Service									1
•									•
			🕂 All	All New	Edit Remove	2			
									OK Save Cancel

**Note:** When users create a request of that new request type and click the autocomplete for the Service field, the service list options are retrieved from Universal CMDB at that time.

# Step 4: Setting Up UCMDB CI Type Properties

In UCMDB, the **Name** attribute of the CI Type must be a key attribute.

### To confirm that the Name attribute is defined as a key attribute:

- 1. Open the UCMDB user interface with administrative privileges.
- 2. Go to the CI Type Manager.



- 3. Select the CI Type you are using for your service list—for example, **business\_service**.
- 4. Go to Attributes and make sure that the Name attribute is marked as the key attribute:

Universal CMDB and	d Discovery									User: al	ánin Custome	: Default Clien	r(Actual) Lice	vse status: Con	plant	
Angagers . CI Types . Edit -	Vew - Layout - Operations - Tools - Help -															
٢	Ci Types V S C E 2 2 2	This page enables you t	o edit the attributes of the	CI type.							Dep	endencies 🚺 C	etalis Atribute	s Qualifiers	Icon Atlache	ed Menu
IT Universe Manager	Managed Object (10)	+ / × 0 🗔														
Nadalas Dada	Atachment (0)	<ul> <li>Display Name</li> </ul>	Name	Type	Description	Default Value	Vable	Editable	Key	Comparable	Required	Index	Managed	Upper Case	Lower Case	Static
moverny cause	- ( Budget (0)	Change State	data_changestate	changestat-	Change St	No-Change										
	- (#) BudgetLife (0) - (#) BudgetLife (0)	Chrype	root_class	string	City inceding											
	CallriomeEvent (0)	classification	classification	classificati.	city to carton	business	~									
Reports	E-O Configurationitiem (10)	Container	root_container	string	Container			× .								
-	E-C BusinessElement (6)	Context Menu	contextmenu	string_list	Context me			× .								
	Business Service Vew (c)	Country or Province	country	string	Country or			×								
Impact Analysis Manager	Dusiness-Application (D)	Create Time	create_time	date	When was		~									
$\sim$	BusinessFunction (0)	Created By	data_source	string			×									
	- BusinessProcess (0)	Deletion Candidate	root_deletioncandida	integer	What is the	20	×	×								× .
( 🐤 )	BusinessTransaction (0)	Description	description	string	Description		~	~								
CI Type Manager	C - O, parallel (1)	Digest	digest	string				*								
$\sim$	C Rusiness Service (5)	Display Name	display_name	string			~	~								
	- Co manufacture (2)	Documents	document_list	string	Documents			~								
Facebook Manager	E- CCollection (0)	Enable Aging	root_enableageing	boolean	Is aging en	false										
Criticities, Manager	8-@ InfrastructureElement (5)	External ID	data_externaid	sering	EXBITIAL SO	a starte										
	- O Location (0)	PAMILY_ICON	PAMEY_ICON	sering		business										- ×
	B- Montor (0)	CHOREN IS	gooa_d	string	A gooary u	Date 8										
	B-B Contract (0)	In Constitute East Dat	good_o_scope	barries	In condition	formal and										
	- (@ Cost (0)	I and forests Time	not independent	data	15 Carlotas	-0-04										
	CostCalegory (0)	LasModiadTime	last modified line	date	When was		~									
	CostCenter (0)	lauer	land.	laver ener		husiness										
	Digital Certificate (0)	MENU	MENU	vel		dentry			•							- 0
	80-100 History Change	Name	0000	atrino					-		~	~				
		Note	data acte	atring					-	-						
C. 11 100	8- RaiObjective (0)	Operation-Corr State	data_operationcoms_	operational	Operation	Normal										

If the Name attribute is not defined as a key attribute, define it as a key attribute.

### To define the Name attribute as a key attribute:

1. Go to the **Details** tab.

0 0 0 0 0			Dependencies Details Attributes Qualifiers
General 🖸 🖆 🐮	Details		$\mathbf{\vee}$
Name:	business_service		
Display Name:	BusinessService		
Scope:	UDM 💌		
Created By:			
5) Inc. Marce 70	Represents business or IT service. A busi service that the IT organization provides to	iness service is a service that a business provides to another business (B2 to support business services or IT's own operations.	B) or that one organization provides to another within a business (e.g. payment proces
toe veew (u) ty (0) sation (0) (on (0)			
ess (0) Identifica	tion		
Jaction (0)			
	Select an identification method. In an included	s, a CMDB ID and a global_id are also assigned.	
ervice (5)	By key attributes 🔍	)	
ureService (0)	Cis with matching key attributes are or core	red to be identical and are merged.	
ent (5)	Available Attributes		Selected Attributes
	ack_cleared_time		Name
	ack_id		
	Actual Delete Time		
	Admin State	1	
	BusinessCriticality		
	Candidate For Deletion Time		

2. In the Identification dialog box, change the default identification to **By key attributes**.

**Caution:** Note the identification that is defined before changing it since you will need to change it back to this identification after the procedure.

- 3. In the Available Attributes dialog box, select **Name** as the key attribute.
- 4. Click Save.
- 5. In the Identification pane, change the identification back to whatever the default was before

changing it in Step 2.

Note: The original out-of-the-box default value wasBy identification rule.

6. Click Save.

# Adding a Service Context from UCMDB to PPM

This section contains the following steps:

	Step 1: Adding a Service Field from UCMDB to a PPM Project	201
	Step 2: Adding a Service Field from UCMDB to a PPM Task	.203
ΑS	Service context can be added from UCMDB to a PPM project, task, or request for change (RFC).	

# Step 1: Adding a Service Field from UCMDB to a PPM Project

**Note:** The following must be configured after configuring integration ID#370 as described in "Configuring PPM and UCMDB" on page 191.

- 1. Log on to PPM Center as a user with administrative privileges.
- 2. In the PPM Center, navigate to **Open > Administrator > Open Workbench**.
- 3. In the workbench, go to **Demand Mgmt**.
- 4. Select Request Header Types.
- 5. In the Request Header Type Workbench window, click List.

6. In the Results tab, double click Project Details Request Header Type.

Request Header Type	Description	Er
DEM - Database Refresh	DEM - Default Request Header Type	Y
DEM - Initiative	DEM - Default Request Header Type	Y
PFM - Asset	Assets should be used to add such things as Pr	Y
PFM - Project	Projects should be used to initiate an approved p	Y
PFM - Proposal	Proposals should be used to request a new Proj	Y
Program Issue	Program Issue	Y
Program Risk	Program Risk	Y
Project Details	Basic set of detailed project information.	Y
Project Issue	Project Issue	Y
Project Risk	Project Risk	Y
Project Scope Change Request	Project Scope Change Request	Y
Service		Y
(REFERENCE) Application	An example header type for simple cross-applica	N
(REFERENCE) Comprehensive	A comprehensive request header type, displaying	N
	3000000	

7. In the Request Header Type: Project Details window, click Field Groups.

🗑 Request Header Type : Pi	roject Def	tails 👯				- ° 2 🗵			
Request Header Type Name:	quest Header Type Name: Project Details								
Reference Code:	_PROJE	CT_DET	AILS						
Description:	Basic se	et of detai	led project infor	mation.					
Extension:			-	Enabled: 🤆	) Yes	⊖ No			
Fields Layout Filter	Owners	hip 🛛 Ua	er Data 📔 Refi	erences					
Prompt		Display	Display Only	Transaction Hist.	Notes Hist.	On Search/Filte			
⊡ Summary									
Em PEM Project	ation								
All All New Edit Remove Field Groups									
					40	(Save Cancel			
Ready									

- 8. Select the **Service** field and click **OK**.
- 9. Click Save.
- 10. Click **OK**.

## Step 2: Adding a Service Field from UCMDB to a PPM Task

### Note:

- This should be configured for each project separately and does not apply for all PPM projects.
- "Step 2: Add a Service field from UCMDB to a PPM task" can only be configured after "Step 1: Adding a Service Field from UCMDB to a PPM Project" on page 201.
- 1. Log on to PPM Center as a user with administrative privileges
- 2. From the Search Projects window, search and open your project.
- 3. Within the project, select **Settings**.



Project Settings - ServiceSum

4. In the Project Settings window, Project Fields pane, Additional Fields section, select Service.

Project Type: Enterprise Description:	
Select a policy to configure:	Project Fields
Project Fields	Some fields must be used by Project Management and are always enabled.
Work Plan	Schedule Fields
Request Types	Fields enabled here will be available for entry and viewing in the work plan. The Scheduled Effort field i
Scheduling	<ul> <li>✓ Scheduled Start</li> <li>✓ Scheduled Finish</li> </ul>
Schedule Health	<ul> <li>Scheduled Duration</li> </ul>
Cost and Effort	Scheduled Effort (controlled by the Cost and Effort policy)
Cost and Earned Value Health	Actuals Fields
Microsoft Project Integration	Actuals fields track the progress of the work plan execution. Fields enabled here will be available for en
Staffing Profile Assignments	<ul> <li>% Complete</li> <li>Actual Start</li> </ul>
Project Health	<ul> <li>Actual Finish</li> </ul>
Issue Health	Actual Duration (always system-calculated)
Task Auditing	Actual Effort (controlled by the Cost and Effort policy)     Estimated Remaining Effort (controlled by the Cost and Effort policy)
Project Overview Layout	Estimated Finish Date
Project Security	Additional Fields
HP Service Manager	Canica (used to categorize services)     Is required
Key: Policies are inherited from Project Type and cannot be altered.	<ul> <li>Activity (used to categorize tasks, recommended for Capitalization)</li> <li>Role (used to categorize resources, recommended for Work Load and Project Staffing)</li> </ul>

Milestone Display

You can control which milestones are visible in the Milestones tile on the Project Overview page. Miles

### 5. Click Save.

6. Click Done.

# Verification

Note: These procedures are to verify that the implementations were done successfully.

Caution: These verifications must be done in this order.

### To verify that the Service field was added to the PPM Project:

- 1. Log on to PPM Center as a user with administrative privileges.
- 2. Navigate to **Search > Projects**.
- 3. From the Search Projects window, search and open your project.
- 4. Within the project, go to the **Project Details** tab.
- 5. Confirm that the **Service** field exists and that you can use it to add CIs from UCMDB.
  - a. In the Service field, click the Choose Services button on the right-hand side of the field.
  - b. Confirm that you can select service CIs from UCMDB.

### To verify that UCMDB CIs can be added to a PPM task:

- 1. In PPM, navigate to **Search > Projects**.
- 2. Search for and select your project.
- 3. In the Project Summary, click Edit Work Plan.
- 4. Double-click the task to which you want to add the UCMDB Service CI.

Task Details: 29 -	Task								
Statistics Name: Task	Status: Ready ▼	Sequence #: 29	% Complete: 0	Activity:	Service:		Priority:	Description:	
Mark task as milesto	one 🗌 This is a m	ajor milestone	Milestone auton	natically completes		C	hoose Servi	ice:	

5. In the new **Service** field, click the **Choose Service** button.

6. Verify that the services in the list are the CIs from UCMDB that you wish to integrate with PPM, and select a service.

	Click a value to select				×
	Service starts with:	[		Find	
	Service Name		Service Description		*
	EEM		Employee Expense System		
	HP Anywhere Service		HP Anywhere Service		
	Nextgen EEM		Nextgen EEM		
1	SAP Expense Tracking Service		SAP Expense Tracking Service		

- 7. Click Save.
- 8. Confirm that the service was successfully added to the **Service** field and click **Done**.

# Chapter 13: Creating an SM RFC from PPM Project Task

This chapter includes:

Overview	.207
PPM – SM: Creating RFC from Work Plan	.208
Verification	.226

# Overview

This solution integrates Project and Portfolio Management (PPM) Center project tasks with Service Manager (SM) Requests For Change (RFCs) to allow PPM Center project managers to specify which tasks in a project, if any, automatically create corresponding RFCs in Service Manager. Then PPM Center project managers can track the status of the corresponding RFCs in PPM. As the RFCs are completed in Service Manager, the statuses of the associated PPM Center tasks are automatically set to **Complete**. If the RFCs are rejected in Service Manager, the associated tasks in PPM are set to **Canceled**.

In the context of the Requirement to Deploy (R2D) Value Stream, this integration enables the traceability between a project and a set of RFCs associated with it.

For more information, see Integration ID#255: Create RFC from work plan (PPM – SM) in **HP Software Solutions Now**.

The following diagram illustrates the relationship between the products for this integration:



# PPM – SM: Creating RFC from Work Plan

To configure this integration, perform the following steps in Project and Portfolio Management (PPM) Center and Service Manager (SM). You must have system administrator privileges in both PPM Center and Service Manager.

This section contains the following steps:

Step 1: Configuring the PPM Center Web Services Configuration	209
Step 2: Adding Task ID Field to SM Database Dictionary	209
Step 3: Configuring the Integration Mapping XML File	211
Step 4: Adding Fields for the Integration to the ChangeManagement WSDL	218
Step 5: Importing the PPM UNL Files to SM	. 219
Step 6: Editing JavaScript for Correct Host and Port for PPM Center	220
Step 7: Starting the ppmfailover Scheduler in Service Manager	. 221
Step 8: Configuring the server.conf File in PPM	. 222
Step 9: Enabling RFC Creation for a PPM Center Project	. 223
Step 10: Modifying the Service Manager Scripts	. 224

### Step 1: Configuring the PPM Center Web Services Configuration

- 1. Stop the PPM Server.
  - a. Log on to the PPM Server as an administrator.
  - b. Open a command line.
  - c. Go to the **<PPM home>\bin** folder.
  - d. Run the following script: sh kStop.sh -now -user <admin\_user>

**Note:** <admin\_user> is a PPM user with administrative privileges.

- 2. Check the PPM Center Web services configuration. Confirm that the basic authentication mode is enabled.
  - a. Log on to the PPM Server as an administrator.
  - b. Open the configuration file located at <PPM\_Home>\server\<PPM\_Server\_ Name>\deploy\itg.war\WEB-INF\conf\axis2.xml.
  - c. Check that <PPM\_Server\_Name> is the name or IP address of your PPM Center instance.
  - d. Confirm that the value of InFlowBasicAuth is true.
- 3. Start the PPM Server.
  - a. Open a command line.
  - b. Go to the **<PPM home>\bin** folder.
  - c. Run the following script: sh kStart.sh

### Step 2: Adding Task ID Field to SM Database Dictionary

- 1. Log on to the Service Manager console as an administrator.
- 2. In the Service Manager command line, enter dbdict.



3. Press Enter.

The Database Dictionary screen opens.

4. In the **File Name** field, enter cm3r and click **Search**.

		Database Diction	ary	
File Name:	cm3r			
		Ē	Search	

- 5. Select cm3r in the File Name section.
- 6. Click the Name column of the descriptor row.
- 7. Click New Field/Key.

The **field.window** opens.

- 8. In the Name field, enter taskId.
- 9. From the **Type** drop-down list, select **number**.
- 10. Click the Add Field icon.

The field is added to the dbdict.

11. Locate and double-click the taskId field.

calc.interval	date/time	2
calc.operator	character	2
calc.time	date/time	2
execute.mode	character	2
oo.alert	logical	2
scheduled.time	date/time	2
update.action	array	1
update.action	character	2
update.type	character	1
cust.visible	logical	1
effect.not.impl	array	1
effect.not.impl	character	2
change.owner	character	1
backout.plan	array	1
backout.plan	character	2
pir.review	array	1
pir.review	character	2
build.test.plan	array	1
build.test.plan	character	2
build.test.result	array	1
build.test.result	character	2
build.test.required	logical	1
taskId	number	1

12. In the **field.window** that opens, enter the following:

Table Field	Value
SQL Name	TASKID
SQL Type	FLOAT
	Note: You may also choose VARCHAR2(400).
SQL Table	m1

- 13. Click **OK**.
- 14. After confirmation of the SQL statements, click SM Alters.

## Step 3: Configuring the Integration Mapping XML File

- 1. Log on to the PPM Server as an administrator.
- 2. Go to the **<PPM\_Home>\conf\smrfc** directory.
- 3. Copy the **sm-rfc-mapping.xml.sample** field mapping file and paste it in the same directory.

Note: You should have two files in the same directory with a different name.

- 4. Rename the copied file to **sm-rfc-mapping.xml**.
- 5. Customize the xml file. For R2D, we recommend customizing the mapping file in the following way:

**Note:** You can choose to alter the fields and values according to specific requirements. For more information, see "Integrating PPM Center Tasks with HP Service Manager RFCs" on page 303 in Chapter 8 of the *HP Project and Portfolio Management Center - HP Solution Integrations Guide*.

**Caution:** In the new mapping file, verify that the Status field in Service Manager is set to **initial**. This value will be maintained by Service Manager after the change record is created in Service Manager. Do not edit this field.

Here is an example of the xml file. It is recommended to use or edit this xml for the R2D environment.

Note: The fields in the mapping file are case-sensitive.

```
<?xml version="1.0" ?>
```

<PPMSMIntegration>

<SMRFCMapping>

<field>

<smField>PPMTaskId</smField>

<ppmField>TASK\_ID</ppmField>

<useOnCreate>true</useOnCreate>

<useOnUpdate>true</useOnUpdate>

</field>

<field>

<smField>BriefDescription</smField>

<ppmField>TASK\_NAME</ppmField>

<useOnCreate>true</useOnCreate>

<useOnUpdate>true</useOnUpdate>

```
</field>
```

<field>

<smField>ExtProjectRef</smField>

<ppmField>PROJECT\_REQUEST\_ID</ppmField>

<useOnCreate>true</useOnCreate>

<useOnUpdate>false</useOnUpdate>

</field>

<field>

<smField>Description</smField>

<ppmField>TASK\_DESCRIPTION</ppmField>

<useOnCreate>true</useOnCreate>

<useOnUpdate>true</useOnUpdate>

<defaultValue>ppm task does not have a description</defaultValue>

</field>

<field>

<smField>EffectOfNotImplementing</smField>
<useOnCreate>true</useOnCreate>

<defaultValue>Unavailable</defaultValue>

</field>

<field>

<smField>RequestedDate</smField>

<ppmField>TASK\_SCHEDULED\_END\_DATE</ppmField>

<useOnCreate>true</useOnCreate>

<useOnUpdate>true</useOnUpdate>

```
</field>
```

### <field>

<smField>RequestedBy</smField>

<useOnCreate>true</useOnCreate>

<defaultValue>FALCON, JENNIFER</defaultValue>

</field>

<field>

<smField>Reason</smField>

<useOnCreate>true</useOnCreate>

<defaultValue>business</defaultValue>

### </field>

### <field>

<smField>Category</smField> <useOnCreate>true</useOnCreate> <defaultValue>Normal Change</defaultValue>

### </field>

### <field>

<smField>Subcategory</smField>

<useOnCreate>true</useOnCreate>

<defaultValue>Major</defaultValue>

#### </field>

#### <field>

<smField>ChangeCoordinator</smField>
<useOnCreate>true</useOnCreate>

<defaultValue>CHANGE</defaultValue>

### </field>

### <field>

<smField>ChangeOwner</smField>

<useOnCreate>true</useOnCreate>

<defaultValue>CHANGE</defaultValue>

### </field>

### <field>

<smField>AssignmentGroup</smField>

<useOnCreate>true</useOnCreate>

<defaultValue>Application</defaultValue>

</field>

### <field>

<smField>InitialAssessment</smField>

<useOnCreate>true</useOnCreate>

<defaultValue>1 - Enterprise</defaultValue>

### </field>

### <field>

<smField>Urgency</smField>

<useOnCreate>true</useOnCreate>

<defaultValue>2 - High</defaultValue>

### </field>

### <field>

<smField>Emergency</smField>

<useOnCreate>true</useOnCreate>

<useOnUpdate>true</useOnUpdate>

<defaultValue>false</defaultValue>

</field>

<field>

<smField>Status</smField>

<useOnCreate>true</useOnCreate>

<useOnUpdate>true</useOnUpdate>

<defaultValue>initial</defaultValue>

### </field>

</SMRFCMapping>

</PPMSMIntegration>

6. Add a **Service** context to be integrated in Service Manager from PPM.

**Note:** The following can only be configured AFTER completing:

- Chapter 10, Integration ID#101 according to "Synchronizing CIs between UCMDB and SM" on page 170
- Chapter 12, "Adding a Service Context from UCMDB to PPM" on page 201

### Caution:

- Be sure that Service Manager is synced with UCMDB and appropriate CIs that exist in UCMDB also exist in Service Manager.
- If the CI (service) that the RFC is being opened with does not exist in Service Manager, the RFC will not be created and the PPM users will not be notified that the RFC creation failed.
- a. Edit the sm-rfc-mapping.xml file, and add the following field:

<field>

```
<smField>Service</smField>
```

```
<ppmField>TASK_SERVICE</ppmField>
```

<useOnCreate>true</useOnCreate>

```
<defaultValue>Applications</defaultValue>
```

</field>

The property values are described as follows:

Field Elements	Values	Description
smField	Service	Service field in the SM RFC
ppmField	TASK_SERVICE	Service that is associated with the PPM task that the RFC is being opened from
useOnCreate	true	Indicates if the service will be synced when opening an RFC
defaultValue	Applications	If the service field is empty for the task which opens the RFC, this value (Applications) will be synced into the SM service field. This field can be modified as long as the service does exist in SM.

b. Save the file.
- 7. Make sure that the Service Manager fields specified in the field mapping file are exposed through the ChangeIIA object in the ChangeManagement Web service in Service Manager.
  - a. Log on to Service Manager as an administrator.
  - b. Select Menu Navigation > Tailoring > Web Services > Web Services Configuration. The External Access Definition page opens.
  - c. In the Service Name field, enter ChangeManagement and click Search.
  - d. In the object.name section, select ChangelIA.
  - e. In the External Access Definition section, select the Fields tab.
  - f. Check that all of the fields that are used in the mapping xml file (sm-rfc-mapping.xml) are listed on the **Fields** tab of the **ChangelIA** object (for the cm3r table) in the ChangeManagement Web service. If any field is not listed, add the field name and caption name to the **Field** and **Caption** columns.

For details on how to expose the fields of a table through a Service Manager Web service, see the **Service Manager Online Help**.

ChangeIIA		
ChangeOperatorInformation		
ChangeRC		
ChangeTask		
ChangeTaskOperatorInformation		
ChangeTaskRC		
🍯 OK 💢 Cancel 🛆 Previous 🔿 Next 🔂 Ad	ld 💾 Save 🍿 Delete 🔍 Find 📑 Fill	
Service Name:	ChangeManagement	
Name:	cm3r	▼
Object Name:	ChangeIIA	
Allowed Actions	RESTful	
Field	Caption	Туре
middle, misc5	Misc5	
middle,misc6	Misc6	
middle,misc7	Misc7	
middle, misc8	Misc8	
middle, misc9	Misc9	
middle,sched.outage.end	ScheduledOutageEnd	DateTimeType
middle,sched.outage.start	ScheduledOutageStart	DateTimeType
severity	Urgency	StringType
requestedDate	RequestedDate	DateTimeType
releaseCandidate	ReleaseCandidate	BooleanType
location.full.name	Location	StringType
emergency	Emergency	BooleanType
closureComments	ClosureComments	
affected.item	Service	
header.assign.dept	AssignmentGroup	
	2 · · · · · ·	

## Step 4: Adding Fields for the Integration to the ChangeManagement WSDL

- 1. Log on to Service Manager as an administrator.
- 2. Select Menu Navigation > Tailoring > Web Services > Web Services Configuration. The External Access Definition page opens.
- 3. In the Service Name field, enter ChangeManagement and click Search.
- 4. In the object.name section, select ChangelIA.
- 5. In the External Access Definition section, select the Fields tab.
- 6. Scroll down to the bottom of the form, and click the next available line.
- 7. Enter the following fields in the last row:

Table Field	Value	
Field	taskld	
Caption	PPMTaskId Note: <b>Note:</b> This caption will be exposed to WSDL and must match the <b>smField</b> name defined in the <b>sm-rfc-mapping.xml</b> file.	
Type	StringType	
1762		

After entering the data, a new row is created.

8. Enter the following fields in the new last row:

Table Field	Value
Field	header,foreign.id
Caption	ExtProjectRef
Туре	StringType

## Step 5: Importing the PPM UNL Files to SM

The following unload files are provided with PPM Center (present in the <PPM\_Home>\conf\smrfc directory):

- PPMIntegration.unl (the integration unload file)
- PPMIntegration\_Schedule.unl (the ppmfailover schedule object file)

#### Note:

- If you are using an Oracle database with Service Manager, loading of the PPMIntegration.unl file might fail the first time. Reloading the file could solve the problem.
- If you load the PPMIntegration\_Schedule.unl file more than once, duplicate ppmfailover schedules will be created in Service Manager. In this case, delete the redundant ppmfailover schedules.
- 1. Import/load the unload files provided with PPM Center.
  - a. Log on to Service Manager as system administrator.
  - b. Enter db in the Service Manager command line and press **Enter**. The Database Manager pane opens.
  - c. Right click in the Database Manager pane, click the **More** drop-down arrow, and select **Import/Load** from the context menu. The HP Service Manager File Load/Import pane opens.
  - d. In the **File Name** field, specify the file to load: <PPM\_ Home>\conf\smrfc\PPMIntegration.unl.
  - e. Click Load FG. A message stating that the records have been loaded displays.
  - f. Click Back.
  - g. Repeat the steps for the **PPMIntegration\_Schedule.unI** file.
- 2. Configure the integration table in Service Manager.
  - a. Enter db in the Service Manager command line and press **Enter**. The Database Manager pane opens.

b. Select **ppmIntegration** from the Table drop-down list and click **Search**. The form for the **ppmIntegration** table displays.

**Note:** If the ppmIntegraion does not exist in the drop-down list, log out and log back in to Service Manager.

c. Add the following new record to the table:

Table Field	Value
ld	1
Field to Store TaskId	Value of this field must match the field name you previously added to the cm3r table for the PPM Center task ID (see Step 8 "In the Name field, enter taskId." on page 210). For example, taskId <b>Note:</b> If the case-sensitive field names do not match, the integration will fail.
PPM Server URL	<pre>URL of the PPM Center Web services For example, http://<host_name>:<port>/itg/ ppmservices/</port></host_name></pre>
PPM Server Username	User name that Service Manager uses to call the PPM Center Web services. This user name must include only single-byte characters. HP recommends that you create a separate user account for this purpose.
PPM Server Password	Password of the user name that Service Manager uses to call the PPM Center Web services

## Step 6: Editing JavaScript for Correct Host and Port for PPM Center

- 1. Log on to the Service Manager Web tier with administrative privileges.
- 2. Select Menu Navigation > Tailoring > Script Library.

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- 3. In the Name field, enter Integration.
- 4. Click Search. The IntegrationService script opens.
- 5. Find the line that contains the URL for the PPM instance. The line should begin with this.location = new String.
- 6. Set the URL to http://<Host\_Name>:<Port>/itg/ppmservices/IntegrationService.

**Note:** <Host\_Name> and <Port> are for connecting to PPM.

The line should look as follows:

this.location = new String("http://<Host\_ Name>:<Port>/itg/ppmservices/IntegrationService")

- 7. Click Save, then click Compile.
- 8. Click **Cancel** and return to the Search pane.
- For Project, repeat steps 3 through 8, but instead of searching for Integration in step 3, enter Project and set the URL in step 6 to http://<Host\_ Name>:<Port>/itg/ppmservices/ProjectService.

**Note:** <Host\_Name> and <Port> are for connecting to PPM.

### Step 7: Starting the ppmfailover Scheduler in Service Manager

Note: By default, the **Repeat Interval** of the ppmfailover schedule is one hour.

You can change the default **Repeat Interval** to another value. However, do not change other field values.

- 1. Start the **ppmfailover** scheduler in Service Manager.
  - a. Log on to the Service Manager Web tier with administrative privileges.
  - b. In SM, enter status in the command line.
  - c. Click Start Scheduler.
- 2. Select the ppmfailover scheduler.

## Step 8: Configuring the server.conf File in PPM

- 1. Log on to PPM server.
- 2. Stop the PPM server.
  - a. Open a command line.
  - b. Go to the **<PPM home>\bin** folder.
  - c. Run the following script: sh kStop.sh -now -user <admin\_user>

**Note:** <admin\_user> is a PPM user with administrative privileges.

- 3. Configure the **server.conf** file.
  - a. In the PPM Server, go to the **<PPM home>** folder.
  - b. Back up and edit the **server.conf** file in the following way:

If the parameters are present, edit them according to the following table. If they are not present, add them.

Parameter	Description, Value
com.kintana.core.server.SM_RFC_ INTEGRATION_ ENABLED	Setting the parameter to <b>true</b> enables SM RFC integration with PPM Center
com.kintana.core.server.SM_ USERNAME	User name that PPM Center uses to access Service Manager. This user name must include only single-byte characters—for example, <b>admin</b> .
com.kintana.core.server.SM_ PASSWORD	Password that PPM Center uses to access Service Manager. You must encrypt this password by using the kEncrypt.sh script, which is located in the bin directory of the PPM Server. Then remove #!# from the beginning and the end of the encrypted password.
com.kintana.core.server.SM_URL	Host name or IP address of Service Manager For example, http:// <host_name>:13080</host_name>

Parameter	Description, Value
com.kintana.core.server.SM_ WEB_URL	Address of Service Manager Web tier
	For example,
	http:// <host_name>:<port>/<webtier_ Package_File_Name&gt;/index.do</webtier_ </port></host_name>
	To obtain the Service Manager Web tier URL:
	1. Log on to Service Manager as System Administrator.
	2. Click Navigation > System Administration > Base System Configuration > Miscellaneous > System Information Record.
	3. Click <b>Active Integrations</b> and get the WebServer URL value. By default, it would be http:// <host_name>:13080/sm/ index.do.</host_name>
com.kintana.core.server.ENABLE_ WEB_ SERVICES	Setting the parameter to <b>true</b> enables web services

- 4. After saving the server.conf file, start the PPM Server.
  - a. Open a command line.
  - b. Go to the **<PPM home>\bin** folder.
  - c. Run the following script: sh kStart.sh

## Step 9: Enabling RFC Creation for a PPM Center Project

If the RFC creation capability is enabled for the project type used by a project, the RFC creation capability is, by default, enabled for the project when it is created.

#### To enable the RFC creation capability if it is not enabled for a project:

- 1. Log on to PPM Center with administrative privileges.
- 2. Open your project in PPM Center.
- 3. On the Project Overview page, click **Project Settings**.

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4. In the list of policies, click HP Service Manager.

Project Type: Enterprise Description:	
Select a policy to configure:	HP Service Manager
Project Fields	The HP Service Manager integration requires setup on the HP PPMC server. The ability to cr Integration policy
Work Plan	
Request Types 8	Inable RFC creation capability
Scheduling	
Schedule Health	
Cost and Effort	
Cost and Earned Value Health	
Microsoft Project Integration	
Staffing Profile Assignments	
Project Health	
Issue Health	
Task Auditing	
Project Overview Layout	
Project Security	
HP Service Manager	
Rey. Powers are inherited from Project Type and cannot be altered.	

The HP Service Manager policy opens.

5. If the **Enable RFC creation capability** check box is not selected but you can select it, select it. If you cannot select it, see "Integrating PPM Center Tasks with HP Service Manager RFCs" on page 312 in Chapter 8 of the *HP PPM Solution and Integration Guide*.

## Step 10: Modifying the Service Manager Scripts

Before you modify the Service Manager Processes that call the PPM Center Web services to update the RFC status and task status, add the following code to the **Final JavaScript** tab of each process:

```
if(vars.$L_exit!="bad.val")
```

system.library.HPPPMSMIntegration.integratePPM();

**Note:** The code is added to the cm.close, cm.reject, cm.update.save, and cm.next.phase processes when you load the PPMIntegration.unl file. The standard **Save**, **Close**, **Reject**, **Next Phase**, and **Reopen** actions for RFCs invoke these processes. If you have added any other actions used to update changes (through tailoring of your Service Manager instance), you must also modify the processes that these self-defined actions will invoke.

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#### To modify the Service Manager Processes:

- 1. Log on to Service Manager as System Administrator.
- 2. Select Menu Navigation > Tailoring > Document Engine > Processes.

The Process Definition search screen appears.

- 3. Click Search.
- 4. In the **Process Name** field, enter cm.close.
- 5. In the **Process Definition** section, click the **Final JavaScript** tab.
- 6. Add the following code to the end of the line:

if(vars.\$L\_exit!="bad.val")

system.library.HPPPMSMIntegration.integratePPM();

7. Repeat step 4 through step 6 for the cm.reject, cm.update.save, and cm.next.phase processes.

## Verification

Note: This procedure is to verify that the implementation was done successfully.

The recommended way to verify this integration is to select/create a PPM task that contains Service information as defined in "Associating UCMDB Service CI with PPM Entities" on page 190.

#### To open an RFC from a PPM task to SM:

- 1. In PPM, navigate to Search > Projects.
- 2. Search for and select your project.
- 3. In the Project Summary, click Edit Work Plan.
- 4. Go to the **Operational RFC** tab
- 5. Check the Create an Operational Request for Change (RFC) upon task save check box.

Task Details: 28 - TESTRFC



6. Click **Save**. Confirm that there is a change ID received from SM and the update status is **Operational RFC has been successfully created**.

Schedule	Resources	Exceptions / Warnings
Change Number:	C16108	
Change Status:		
Closure Code:		
Closure Comments:		
Change Last Update Date:		
Operational RFC has been s	successfully created.	

7. Click the **Change Number** field in the **Operational RFC** tab and confirm that there is a change in Service Manager for this ID.

**Note:** The **Service** field in SM should contain the Service from the PPM task, and the **External Reference** should contain the project ID from PPM.

Change - C1610	8
----------------	---

Title *	TESTRFC				
Change ID	C16108		Category	Normal Change	
Phase	Registration and Categoriza	ation	SubCategory	Major	
Approval Status	approved		Change Model		
Alert Stage			Impact *	1 - Enterprise	~
Change Requester *	FALCON, JENNIFER	(i) 💕	Urgency *	2 - High	~
Requested End Date *	09/10/14 07:00:00		Priority	1 - Critical	
Reason for Change *	Business Requirement	-	Risk Assessment		-
Service *	EEM	<u>ت</u>	Change Coordinator		đ
Affected Configuration Ite		đ	Change Owner		đ
		đ	Assignment Group	Application	đ
		d'	Assignee		đ
Location		đ	External Reference	30542	

## Chapter 14: Launching an OO Flow from SM RFC

#### This chapter includes:

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## Overview

This chapter describes how to launch HP Operations Orchestration (OO) flows from HP Service Manager (SM), which enables you to provide quicker, more automated change processes, with the ability to automate the deployment of a change. The SM – OO integration also provides the capability to trigger OO flows within SM RFC and use SM record parameters in OO flows.

For more information, see Integration ID#408: Launch OO Flow from SM RFC (SM – OO) in **HP Software Solutions Now**.

The following diagram illustrates the relationship between the products for this integration:

Change SM 9.32	
#408 Launch Flow from RFC	00 10.02

## Prerequisites

The following products must be installed.

- HP Service Manager version 9.32 with Process Designer (PD) Content Pack
- HP Operations Orchestration version 10.02

## **Reference Materials**

• HP Service Manager Online Help Center. From the navigation pane, select System Administration > Integrations.

## Adding an Operations Orchestration Integration

This task adds and enables an HP OO integration in the Service Manager Integration Suite (SMIS). It specifies all parameter values required to set up the integration.

#### To add and enable a Service Manager to HP OO integration instance:

- 1. Log on to the Service Manager Windows or Web client.
- 2. Navigate to **Tailoring > Integration Manager**.

Integration Instance Manager opens.

3. Click Add.

The Integration Template Selection wizard opens.

4. Select **SMOO** from the Integration Template list.

Note: Ignore the Import Mapping check box, which has no effect on this integration.

5. Click Next.

The Integration Instance Information page opens.

6. Complete the following fields as necessary:

Field	Value	Description
Name (required)	User-defined. Default: SMOO	Name of the integration instance
Version (required)	1.0	Version number of the integration
Interval Time (s) (required)	User-defined—for example, 600	Polling interval (in seconds) for HP OO flow synchronization

Field	Value	Description
Max Retry Times (required)	0 (zero)	Maximum allowed number of retries if the background scheduler fails to run <b>Note:</b> SMOO does not use this value.
SM Server	Name that identifies your SM server host—for example, sm_ host1	Display name for your SM server host
Endpoint Server	Name that identifies your HP OO server host—for example, oo_ host1	Display name for your HP OO server host
Log Level (required)	Select a level from the drop-down list. Default: INFO	Level of diagnostic information that the SM server logs to the log file directory. Possible log levels are: DEBUG, INFO (default), WARNING, ERROR, and OFF.
Log File Directory (required)	Specify a directory—for example, c:\smoologs	Directory that exists on the SM server host where log files of the SM to OO integration are stored. Log files are generated in the following format: SMOO- <yyyy><mm><dd>.log (for example, SMOO-20100328.log). //p&gt;</dd></mm></yyyy>
Run at system startup	Selected/not selected	Automatically enable/disable the integration instance when the SM server is started
Description	HP OO flows linked to SM	Description of the integration instance

#### 7. Click Next.

The Integration Instance Parameters page opens.

8. Click the **General Parameters** and **Secure Parameters** tabs, and modify the parameter values as shown in the following table:

Parameter	Value	Example
oo.server.url	Server address of HP OO Central:	https://oo.hp.com:8443
	https://[servername]:[port].	
	Note that [servername] should be the fully qualified domain name (FQDN) of the HP OO server host.	
oo.user.name	User name of the HP OO user account that the SM server uses to access HP OO Central to synchronize and launch HP OO flows.	admin
oo.password	Password of <b>oo.user.name</b> .	admin
basepath.delimiter	Delimiter between multiple base paths. The default delimiter is a semicolon (;).	• 1
basepath	basepath1;bathpath2; The paths are separated by the base path delimiter. Only the HP OO flows under the base path and its sub-folders will be synchronized from HP OO.	/Library/ITIL/Change Management;/Library/ ITIL/Incident Management
Accept-Language	Request Language Setting	en
http.conn.timeout	Http Connection Timeout setting (seconds)	30
http.rec.timeout	Http Receive Timeout setting (seconds)	30
ΟΟΚΜ	Set to true/false to enable/disable the visibility of this integration instance in Knowledge Management (default: true).	true <b>Or</b> false
ООСМ	Set to true/false to enable/disable the visibility of the HP OO integration instance in Change Management (default: true).	true <b>O</b> ffalse

9. Click **Next** twice and then click **Finish**. Leave the **Integration Instance Mapping** and **Integration Instance** fields settings blank. This integration does not use these settings.

Service Manager creates the instance. You can edit, enable, disable, or delete it in Integration Manager.

10. Enable the integration instance.

## Enabling SSL Connection from SM to HP 00

This task enables SSL connection between the SM and HP OO servers. The SM server acts as a trusted client connecting to the HP OO server. This task creates a root CA and self-signed certificate in the HP OO server and then imports them into SM.

#### Note:

- The following procedures are provided as examples, assuming that you have not changed the security configurations of HP OO and SM since they were installed. You may need to adjust the procedures depending on your specific security configurations in HP OO and SM.
- To perform the following procedures, you must have OpenSSL installed on your Operations Orchestration Central host. In addition, you must have a Java platform installed on the HP OO and SM hosts.
- In the following procedures, <00\_HOME> represents the Operations Orchestration home directory, and <SM\_HOME> represents the Service Manager home directory.
- The following procedure uses the Keytool utility that is located in <00\_HOME> /java/bin/keytool. Add the path to PATH environment variable for ease of use.

**Tip:** Replace the parameters that are shown in angle brackets *<XXX>* with the location of the keystore file and other personalized data on your computer.

#### To enable an SSL connection from SM to HP OO:

- 1. Stop Central and back up the original key.store file located in <installation dir>/central/var/security/key.store.
- 2. Open a command prompt and execute the following commands:

c:\OpenSSL-Win32\bin\openssl.exe genrsa -des3 -out RSA\_private.key 2048

- a. Enter a pass phrase for RSA\_private.key:<RSA\_private.key>
- b. Verify. Enter a pass phrase for RSA\_private.key:<RSA\_private.key>

This creates a file called **RSA\_private.key** in the current directory.

3. In same command prompt, run:

c:\OpenSSL-Win32\bin\openssl.exe req -new -key RSA\_private.key -x509 -days 1095
-out <mycacert.pem>

#### Here is the console output:

C:\sm-oo>c:\OpenSSL-Win32\bin\openssl.exe req -new -key RSA\_private.key -x509 days 1095 -out mycacert.pem Enter pass phrase for RSA\_private.key: Loading 'screen' into random state - done You are about to be asked to enter information that will be incorporated into your certificate request. What you are about to enter is what is called a Distinguished Name or a DN. There are quite a few fields but you can leave some blank For some fields there will be a default value, If you enter '.', the field will be left blank. - - - - -Country Name (2 letter code) [AU]:IL State or Province Name (full name) [Some-State]:Israel Locality Name (eg, city) []:Yehud Organization Name (eg, company) [Internet Widgits Pty Ltd]: HP Software Organizational Unit Name (eg, section) []:PFS Common Name (e.g. server FQDN or YOUR name) []:MYD-VM08690.hpswlabs.adapps.hp.com Email Address []:admin@operations.orchestration.com

This will generate the mycacert.pem file in the current directory.

**Caution:** When asked for a Common Name, enter the fully qualified domain name (FQDN) of the Operations Orchestration host. To create a unique .pem file, provide a unique Organization Name (for example, org1).

#### 4. Execute:

keytool -genkey -alias sm -keyalg RSA -keystore "C:\Program Files\Hewlett-Packard\HP Operations Orchestration\central\var\security\key.store" -storepass changeit -keypass changeit -dname "CN=<MYD-VM08690.hpswLabs.adapps.hp.com>, OU=<PFS>, 0=<HP Software>, L=<Yehud>, ST=<Israel>,C=<IL>"

This generates a certificate key named sm and adds it to the key.store

#### 5. Execute:

keytool -certreq -keystore "C:\Program Files\Hewlett-Packard\HP Operations
Orchestration\central\var\security\key.store" -alias sm -storepass changeit file cert\_request.crs

The result is the cert\_request.crs file created in current directory.

6. Execute:

c:\OpenSSL-Win32\bin\openssl.exe x509 -req -days 1095 -in cert\_request.crs -CA mycacert.pem -CAkey RSA\_private.key -CAcreateserial -out smcertificate.pem

Enter the pass phrase for RSA\_private.key:RSA\_private.key.

Note: This was the private key defined in step 2.

The smcertificate.pem file is generated.

7. Execute:

keytool -import -v -alias rootca -keystore "C:\Program Files\Hewlett-Packard\HP
Operations Orchestration\central\var\security\key.store" -storepass changeit file <mycacert.pem>

Confirm that certificate information is added into the keystore file.

Note: The ca certificate was provided a few steps back when it was generated after step 3.

8. Execute:

keytool -import -v -alias sm -keystore "C:\Program Files\Hewlett-Packard\HP
Operations Orchestration\central\var\security\key.store"-storepass changeit file <smcertificate.pem</pre>

Note: The file name of the sm certificate was generated in step 6.

#### 9. Restart OO Central service.

Once you have successfully configured SSL in HP OO, you are ready to configure SSL in SM.

Create a trust store for SM:

- a. Change to the following directory: <SM\_HOME>/Server/RUN.
- b. Copy the generated mycacert.pem and smcertificate.pem from <00\_HOME>\Central\conf to <SM\_HOME>/Server/RUN.
- c. Run the following command:

```
keytool -import -v -alias rootca -keystore key.store -storepass changeit -
file mycacert.pem
```

The command window displays the certificate information. The command window prompts **Certificate was added to keystore**.

- d. When the command window prompts Trust this certificate?, enter y.
- e. Run the following command:

```
keytool -import -v -alias sm -keystore key.store -storepass changeit -file
smcertificate.pem
```

**Note:** In this example, the trust store file name is **key.store**, and its store password is **changeit**. You will add this information to sm.ini in the next step.

10. Modify the sm.ini file to use the keystore for securing connections to HP OO by adding the following lines.

```
#
# Certificates
#
```

truststoreFile:<key.store>

truststorePass:<changeit>

11. Restart SM Service.

## Verification

Note: This procedure is to verify that the implementation was done successfully.

#### To verify the integration:

1. Confirm that the base path in HP Operations Orchestration Central contains flows. In Service Manager, the base path is stored as one of the properties of SM-OO integration instances. In the following screen shot, the base path is /Library/Integrations.

General Parameters Secure Parameters		
Name	Value	
oo.server.url	https://myd-vm08690.hpswlabs.adapps.hp.com:8443	G
oo.user.name	smadmin	H
basepath.delimiter	;	G
basepath	/Library/Integrations/	G
Accept-Language	en	H
http.conn.timeout	30	H
http.rec.timeout	30	H
OOKM	true	G
OOCM	true	G

In the HP OO flow library, expand the base path and confirm that there are flows.



- 2. Log on to SM and create a Change record:
  - a. In the Change logging form, select the **OO Flow links** tab.

U	pdates Worklow Affected Services Associated Cis Tasks	Related Records - (3) SLA Attachments Closure History OO Flow Links		4 1
	Select Path		- d Q	Add Link
	Links	Lanzer Umgendeen Erolen EEM envine Azerzel fungualisation Edwards Texton Flow Azerzel fungualisation Edwards Environ Flow Azerzel fungualisation Edwards Edwards Edwards Edwards (Edwards Edwards Edwa		

- b. Expand the Select Path drop-down box, and select the desired flow.
- c. Click the **Add Link** button.

A form to provide values for input parameters is displayed.

Define the appropriate sequence number (for changes which require linking multiple flows) and enter it in the appropriate field (sequence number). For a single flow, use **1**. Click the **Add** button.

O Flow Link Detail				
	Ch	ange ID C16098		
	OO Flo	w UUID 4c99f966-	-d74a-48d9-bc95-6	d4f52eb452a
	OO FI	w Path /Library/Tu	utorials/subflows/Re	start Service
	Seque	nce No +		
Asynchronous		-		
General Parameters				
Parameter Name	Required?	Mapped Change	Field	
host	true			
service	true			
altuser	false			
Coours Doromotors				
Secure Parameters				
		D	40	Mapped Ch
Parameter Name		Requir	rear	mapped Ch

The HP OO flow is linked to the SM Change record.

- 3. Execute the HP OO flow.
  - a. If **No Automation** was selected when attaching the flow, forward the change record to the Deployment phase (availability of this phase depends on the Change Category). While viewing the change details, click the **More** button and select **Change Phase**.

To Do Queue: My To Do List Change C10001 -	Prompt 🗷 Change C16098	- Prompt 📧	
😫 Cancel 🦉 Save & Exit 💾 Save 🖺 Apply Tem	plate 🖉 Request Validation	More -	
(i) Change C16098 Phase Registration and Cat	egorization Updated by Jennife	Set Reminder	
Chapge - C16098		Show Clocks	
change - C 10090		Audit History	-
Title	* This is a testing change record	Search Duplicates	tion
Change ID	C16098	Abandon	
Phase	Registration and Categorizatio	Apply Change Model	
Approval Status	approved	Create Template from Record	
Alert Stage		View Opened Tasks	
Change Requester	* FALCON, JENNIFER	Open New Task	
Requested End Date	* 07/11/14 00:00:00	Change Category	
Reason for Change	Business Requirement	Change Phase	
Service	* Service Management	Alarta	
Affected Configuration Item		Alerts	
		List Pages	
		Calculate Risk	-7
Location		Copy Record	10
		View Affected Services	

- b. Select the **Deployment** phase and click **Save**.
- c. Click the **More** button, and select **Execute OO flow**. In the prompt, fill in the flow input parameters and click **Finish**.

Set Parameters Get St	opped Service List				
	Please provide the parameter names and vi	alues. Click "Next" to launch the OO flow and	select the OO flow again. Click 'Fini	ish" to launch the OO flow and back to the o	hange.
	Description:				
	altuser - The user for connecting to the host altpass - The password for connecting to the Responses:	t e host.			
	General Parameters				
	Parameter Name	Required?	Value		
	host	tue	myd-vm01999.hpswlabs.adap	pps.hp.com	
	altuser	faise	admin		
	Secure Parameters				
	Parameter Name	Required?	Value		
	altpass	false			
	Asynchronous				
			< Previous	Next >	Finish

After a while, the execution summary is displayed. Depending on the flow, it can end with the status **Resolved** or **Error**.

- 4. To review the results recorded in Change Updates:
  - a. In **Change Details**, select the **Updates** tab and see the result of the flow stored within the table.
  - b. Click the link on the **Date/Time** field to review the execution report.

To Do Queue: My To Do List Change C10001 - Pro	change C16098 - Pr	ompt 🕷		
😫 Cancel 🥵 Save & Exit 💾 Save 🛄 Apply Templa	ate 🥜 Request CMDB Update 🥫	Backout More -		
Effect of not Implementing	This is a testing change record cre	ated for documenting SM-OO integration		
L				
Updates Worklow Affected Services Associated C	Is Tasks Related Records - (0)	SLA Attachments Closure History OO Flow Li	nka	
Naw Locista Tuna			Visible to Customer	
New Update				
Activity Type		Filter		
	Date/Time	Туре	Operator	Description
	07/10/14 01:57:42	OO Response	falcon	OO Flow Get Stopped Service List. History Id: 201300001
	Unione Unione	Phase Change	NERCOTT	Registration and Categorization to Deproyment
To Do Queue: My To Do List Change C1000	1 - Prompt × activitycm3r	×		
😁 OK 🧱 Cancel 🗘 Add 💾 Save 🐨 Delete	e Open Report More •			
Activity Log - Change Management				
Change Number:	C16098			
Date of Activity:	07/10/14	01:57:42	Activity Type:	OO Response
Recording Operator:	falcon		Activity Number:	001A10106
	uli Ve	lible to Customer?		
Description of the Activity Performed:				
OO Flow:Get Stopped Service List. History Id:	201300001			
Start Time: 07/10/14 10:57	adapps hp.com/8443/ooi#rruntr	neworkspaceruns/201300001		
End Time: 07/10/14 10:57 Response: failure				
Result (Result=:) Return Code: Error				

# Chapter 15: Viewing Source Code and Build Data in Agile Manager via ALI

#### This chapter includes:

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## Overview

Similar to the way HP Application Lifecycle Intelligence (ALI) is used to provide HP Application Lifecycle Management (ALM) with the capability to access source code and build related data, HP Agile Manager (AgM) also relies on ALI to provide those capabilities and enable the Agile Manager user to view information about source code changes and builds in the context of Agile Manager user stories and defects.

The following diagram illustrates the relationship between the products for this integration:



## Prerequisites

The following products must be installed:

- Agile Manager account is enabled.
- SCM system is installed and running—for example, Git.
- Build system is installed and running—for example, Jenkins.

## Setting Up the Agile Manager, ALI, and Third-Party Integration Configuration

**Note:** Agile Manager is an HP hosted product (SaaS), and is subject to continuous improvements following user's feedback. Therefore, the instructions provided below may be quickly outdated. Refer to **AgM Online Help** for the most current documentation.

#### To set up the Agile Manager, ALI and third-party integration configuration:

 Download the ALI Dev Bridge component. From the Agile Manager interface, select Agile Manager Configuration > Project > ALI Summary.



#### **ALI Summary**

Start configuring ALI. Just a few steps and it's done!



2. Extract the contents of the ALI Dev Bridge package on a machine which has network access for Agile Manager instance as well as build server and SCM system.

 If the default port 8080 is not available, in <extracted Dev Bridge folder>/wrapper, modify the wrapper-custom.conf file. The property value for –Dali.bridge.port=<insert free port number> should be changed.

```
C:\DevBridge\wrapper\wrapper-custom.conf - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
 。 😑 🖹 🛍 👵 Г。 😂 🚜 Г、 🖺 ラ ピ 📾 🍢 🔍 🤜 💁 🖫 🎩 🗐 🎩 🗩 🐼 📼 🗷 🔺
📕 log4j.properties  📄 wrapper-custom.conf 🔚 run_after_finish_disable_validation.bat 🔚 siteadmin.xml 📗
   1 #*****
   2
     # Put your custom definitions here
     3
   4
   5 # HTTP port where Dev Bridge is listening
   6
     wrapper.java.additional.101=-Dali.bridge.port=<mark>8088</mark>
   7
   8 # HTTPS port where Dev Bridge is listening for secure connections
   9 # when using simplified SSL configuration
  10 wrapper.java.additional.102=-Dali.bridge.ssl.port=8445
  11
  12 # uncomment if using custom deployment configuration (reverse proxy, custom SSL etc)
  13 #wrapper.java.additional.103=-Dali.bridge.custom.deployment=true
  14
  15 # uncomment if you don't want to be notified about using http
  16 wrapper.java.additional.104=-Dali.bridge.http.warning=false
  17
     # if new custom parameters are added, unique integer ids must be used
  18
 19
```

4. Using a Windows operating system, install ALI Dev Bridge as a service.

Using a command line, execute the DevBridge.bat script with **install** and then **start** parameters—for example:

es. Admini	istrator: Comma	nd Prompt		_ 🗆 🗵
TCP TCP TCP	[::]:5390 [::]:56893 [::]:56893	B [::]:0 3 [::]:0 5 [::]:0	LISTENING LISTENING LISTENING	
C:\User ERROR t insta 24)	s\shestako>   wrapper lled - The s	C:\DevBridge\bin\DevBridge ¦ 2014/03/05 16:27:09.243 specified service does not	.bat start ¦ The HP ALI DevBridge service exist as an installed service	: is no :. (0x4
C:\User Usage: status Press a	s\shestako> [ console ] ny key to co	C:\DevBridge\bin\DevBridge : start : pause : resume : ontinue	.bat stop : restart : install : re	move :
C:\User STATUS -	s∖shestako≯ ¦wrapper	C:\DevBridge\bin\DevBridge   2014/03/05 16:27:23.741	.bat install ¦ HP ALI DevBridge service ins	talled
C:\User STATUS ice INFO STATUS	s∖shestako≯ ¦ wrapper ¦ wrapper ¦ wrapper	C:\DeuBridge\bin\DeuBridge   2014/03/05 16:27:29.610   2014/03/05 16:27:34.779   2014/03/05 16:27:39.849	bat start   Starting the HP ALI DevBridg   Waiting to start   HP ALI DevBridge started.	e serv
C:\User	s\shestako>			-

5. Verify that ALI Dev Bridge is accessible, and log on using the Agile Manager credentials.



6. In Agile Manager, edit the ALI Dev Bridge URL on the ALI Summary page.



#### **ALI Summary**

Start configuring ALI. Just a few steps and it's done!

ALI - ( - F - F - L - (	Dev Bridge configuration Download the ALI Dev Bridge (what's that) To connect to multiple tenants, download a tenant descriptor. xtract the ZIP archive un the Dev Bridge (bin/DevBridge.bat or DevBridge.sh) If you need an HTTP Proxy to connect to the Internet, configure it in the following file: tenants/ <tenants after="" bridge.<br="" conf="" connection.properties="" created="" dev="" file="" first="" is="" starting="" the="" this="">og in to the Dev Bridge (http://<dev-bridge-host>:8080/ali-dev-bridge) as the Administrator user. onfigure the ALI Dev Bridge location.</dev-bridge-host></tenants>	
Wa Bui	Set ALI Dev Bridge URI       Image: Constraint of the set o	

The status of ALI Dev Bridge should be connected now.

ALI Summarv

ALI Dev Bridge configuration	n
ALI Dev Bridge   Status: 🤣 Br	idge is <b>connected</b> (last synchronization time not available).
<ul> <li>Download the ALI Dev Bi To connect to multiple te</li> <li>Configure the ALI Dev Bridg</li> </ul>	idge (what's that) <i>nants, download <mark>a tenant descriptor</mark> .</i> e location.
Watch this movie or see the H	elo Center to learn more.
Build and Source managen	nent configuration nosted build system, you need to download build agent and install it into your build system.
Build and Source managen To integrate your on-premise Available Build Agents:	nent configuration nosted build system, you need to download build agent and install it into your build system.
Build and Source managen To integrate your on-premise Available Build Agents: Hudson Agent	nent configuration nosted build system, you need to download build agent and install it into your build system. Additional support for: Git   Perforce   TFS
Build and Source managen To integrate your on-premise Available Build Agents: Hudson Agent Jenkins Agent	Additional support for: Git   Perforce   TFS Additional support for: Git   Perforce   TFS   JaCoCo
Build and Source managen To integrate your on-premise Available Build Agents: Hudson Agent Jenkins Agent TFS Agent (SCM Agent included	Additional support for: Git   Perforce   TFS   JaCoCo

7. From the ALI Summary page in the Agile Manager configuration, download and install the Build Management agent. It is a plug-in that allows Agile Manager to communicate with the build management server.

Using Jenkins as an example, navigate to the **Jenkins > Manage Jenkins > Manage Plugins > Advanced** tab, and then upload **ali-jenkins-plugin.hpi**.

Updates	Available Installed Advanced				
Enabled	Name	Version	Previously installed version	Pinned	Uninstall
	<u>Ant Plugin</u> This plugin adds <u>Apache Ant</u> support to Jenkins.	<u>1.2</u>			
	Credentials Plugin This plugin allows you to store credentials in Jenkins.	<u>1.9.3</u>			
	External Monitor Job Type Plugin Adds the ability to monitor the result of externally executed jobs.	<u>1.2</u>			
	Git support for Hudson HP ALM integration.	2.6.0.134735	Downgrade to 2.6.0.134735		Uninstall
	Hudson Integration with HP ALM Integrates Hudson with HP ALM.	2.6.0.134735			Uninstall

- 8. Configure the plug-in using Jenkins.
  - a. Log on to Jenkins as a user with administrative permissions.
  - b. In the main menu, select Manage Jenkins, then Configure System in the opened menu.

Manage Jenkins       Image: Second state       Image: Second state       Image: Second state       Image: Second state		<u>Configure System</u> Configure global settings and paths. <u>Configure Global Security</u> Secure Jenkins; define who is allowed to access/use the system.
Build Queue No builds in the queue.	Z	Reload Configuration from Disk Discard all the loaded data in memory and reload everything from file system. Useful when you modified config files directly on disk.
Build Executor Status           #         Status           1         Idle	ł	Manage Plugins Add, remove, disable or enable plugins that can extend the functionality of Jenkins. (updates available)
2 Idle		System Information Displays various environmental information to assist trouble-shooting.
6		<u>System log</u> System log captures output from java.util.logging output related to Jenkins.
		Load Statistics Check your resource utilization and see if you need more computers for your builds.
	<u>&gt;_</u>	<u>Jenkins CLI</u> Access/manage Jenkins from your shell, or from your script.
	40010000	<u>Script Console</u> Executes arbitrary script for administration/trouble-shooting/diagnostics.
412	<b>F</b>	Manage Nodes Add, remove, control and monitor the various nodes that Jenkins runs jobs on.
	$\mathbf{N}$	Manage Credentials Create/delete/modify the credentials that can be used by Jenkins and by jobs running in Jenkins to connect to 3rd party services.
	?	About Jenkins See the version and license information.
		Manage Old Data Scrub configuration files to remove remnants from old plugins and earlier versions.
	-	Prepare for Shutdown Stops executing new builds, so that the system can be eventually shut down safely.

c. In the System Configuration menu, scroll down to the ALI Integration section.

nclude credentials in SCM configuration			
Default HP AGM Server Connection			(
	HP AGM Serv	ver Connection	
	Location	https://agilemanager-int.saas.hp.com/agm	
		Location of the HP AGM Server, e.g. https://almhast03p.saas.hp.com/agm:	
	Domain	t146749715_hp_com	
		Existing AGM domain	
	Project	main	
		Existing AGM project (ALI version 2.01-67 must be enabled for this project)	
	Username	ivan.shestakov@hp.com	
		Username used for logging into HP AGM	
	Password		
6		Password used for logging into HP AGM	
	Build Server	Android apps build server	
		Build server name defined in HP AGM	
		Test con	nection

- d. Fill in the Agile Manager system connection details: Agile Manager URL, Domain, Project (can be inferred from the URL you use to access the Agile Manager environment), username and password, as well as the name under which this Jenkins instance will be listed in the Agile Manager environment.
- e. Click the Test Connection button to validate successful connection to Agile Manager server.

9. In the Agile Manager Project configuration, launch the ALI Dev Bridge configuration wizard.



Requirement to Deploy Concept and Configuration Guide Chapter 15: Viewing Source Code and Build Data in Agile Manager via ALI

10. Fill in the Build Management system details:

Select or create a new b	uild server whose build job will be tracked by ALI	
Server Type:	Hudson/Jenkins Build Server	
Name: *	R2D Jenkins (?)	
Display name for the buil	d server configuration you are creating (for example: Red group Jenkins). The	
server name must be un	que across all build server configurations.	
Location: *	http://myd-vm01999.hpswlabs.adapps.hp.com:888 (?)	
Your build server URL (fo	r example http://red.mycorp.com:8080). ALI uses this URL to establish the	
connection.		
Username:	0	
The username used to co	nnect to your build server and obtain information about the build jobs.	
Password:	0	
The password used to co	nnect to your build server and obtain information about the build jobs.	

elect Build Configurat	on (Job)	<b>● ● ● ● ● ● ● ● ● ●</b>
uild Configurations	Jenkins that will be tracked by ALI.	
lame	Description	
	Previous	Next Finish Cancel

11. Provide the required details about the application and release:

			×			
Finalize Build Configuration         You have selected R2D_testing build configuration from server R2D Build Server         Build Configuration Properties						
Build Category:	Fast	~	0			
Release:	R2D_Testing 1.0	~	0			
Application:	R2D_testing	~	0			
	Previous	Next Finis	sh Cancel			

12. Finalize by providing SCM details in the wizard:

Git			
Selecte	ed Repository:	http://myd-	
		vm01999.hpswlabs.adapps.hp.com:88	/git/R2D_testing.git
Name:	*	R2D_Testing.Git	0
A displa	ay name for the sour	rce code repository configuration you are ci	reating (for example Red group
SVN).T	The repository name	must be unique across all source code repo	ository configurations.
Userna	ime:		0
Passw	ord:		0

The capability of Agile Manager to communicate with SCM and the Build Management system in order to allow traceability between Agile Manager entities (User Stories and or Defects) and code changes and builds is the result of the above actions. This can be seen in Agile Manager's Configuration page on the **ALI Summary** tab:

Build Management 🚽 Add Build Server	Source Code Management + Add SCM Repository
Android apps build s http://myd-vm01999.hpswlabs.adapps.hp.com:8	Android Client (Git) http://myd-vm01999.hpswlabs.adapps.hp.com:88
1 build configuration linked to EEM app for Android 1.0 release. Synchronization is ON. Synchronizing every 60 minutes, next update scheduled in few seconds. Last synchronized 17 days 51 minutes and 22 hours ago.	Total 1 branches; / updated to rev. 488e3496f335aa61a6aaa9d27c3ed701fb4d3761 master Synchronization is ON.next update scheduled in few seconds. Last synchronized 17 days 46 minutes and 22 hours ago.

## Chapter 16: ALM Testing Tools

#### This chapter includes:

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HP LoadRunner	.254

## Overview

Software testing is a broad discipline and HP offers multiple tools that cover various aspects of testing. This chapter briefly describes those tools and provides references for additional information resources.

The tools mentioned in this chapter provide unique testing capabilities that can be used by ALM users in order to run manual and automatic tests written using various methods. For more information, see page 552 in Chapter 31 of the HP ALM version 11.52 User Guide.

## HP ALM Performance Center Testing Process

Using HP ALM Performance Center, you create performance tests to define the events that occur during a testing session. During a test, ALM Performance Center replaces human users at physical machines with virtual users—or Vusers. These Vusers create load on your system by emulating the actions of typical users in a repeatable and predictable manner.

Each step in the testing process is carried out by one of the HP load testing tool components. The components are as follows:

- HP Virtual User Generator (VuGen). Creates the script and generates virtual users—or Vusers. VuGen does this by capturing actions that typical end-users would perform on your application, and then records these actions into automated Vuser scripts. These Vuser scripts form the foundation of a performance test.
- **HP ALM Performance Center.** Provides the central console from which you build, manage, and monitor a test.
- **HP Analysis.** Analyzes the performance test and provides graphs and reports with in-depth performance analysis information. Using these graphs and reports, you can pinpoint and identify the bottlenecks in your application and determine the changes that need to be made to your system to improve its performance.
For more information on using PC and all of its components, see the *HP ALM Performance Center Quick Start Guide*.

## HP Unified Functional Testing

HP Unified Functional Testing's (UFT) combined solution for graphical user interface (GUI) and API (service) testing enables you to test functionality across multiple application layers, such as the front-end GUI layer, as well as back-end service layers. Additionally, the integrated BPT features enable a wider range of both technical and non-technical UFT users, maximizing your opportunity to create comprehensive automated tests.

For information on how to integrate UFT with ALM, see Part 5, "UFT Integration With HP ALM" on page 706 in the *HP Unified Functional Testing User Guide*.

## **HP Sprinter**

You run tests manually from HP Application Lifecycle Management (ALM) using HP Sprinter. Sprinter provides advanced functionality and tools to make manual testing more efficient and effective.

Manual testing often requires that you leave your testing application to accomplish tasks related to your test. For example, you may need to use graphic software to take a screen capture of your application, you may want to record a movie of the application during the test, or you may need to switch to your defect tracking software to report defects.

Sprinter enables you to accomplish these tasks without disrupting your test flow. With Sprinter, you can also perform many of the repetitive and tedious tasks of manual testing automatically. Sprinter includes many tools to help you detect and submit defects. These features ensure that you can perform all the tasks necessary for your manual test with minimum interruptions to your testing work.

Sprinter also enables you to create, edit, and manage manual tests and business components directly in Sprinter, and then save them to Application Lifecycle Management.

Sprinter is fully integrated with Application Lifecycle Management, enabling you to get the maximum benefit from both solutions.

For more information on Sprinter's integration with ALM, see "Connect to Application Lifecycle Management" on page 47 in the *HP Sprinter Readme*.

## HP LoadRunner

HP LoadRunner (LR) is the HP solution for application performance testing. LoadRunner stresses your entire application to isolate and identify potential client, network, and server bottlenecks.

LoadRunner includes:

- HP Virtual User Generator (VuGen). HP's tool for creating Vuser scripts. You use VuGen to develop a Vuser script by recording a user performing typical business processes. The scripts let you emulate real-life situations.
- **HP Controller.** Allows you to easily and effectively control all the Vusers from a single point of control and monitor the scenario performance during test execution.
- **HP Analysis.** You use Analysis after running a load test scenario in the HP LoadRunner Controller or HP Performance Center. The Analysis graphs help you determine system performance and provide information about transactions and Vusers. You can compare multiple graphs by combining results from several load test scenarios or merge several graphs into one.

For more information regarding LR's integration with ALM, see "Working with Application Lifecycle Management" on page 140 in the *HP LoadRunner Virtual User Generator User Guide*.

# Chapter 17: Execution of GUI and API Vusers as LoadRunner Scripts for BPM

#### This chapter includes:

Overview	
Installing and Configuring UFT and BPM	

## Overview

HP United Functional Testing (UFT) enables the creation of complex tests to examine the full spectrum of your application's functionality and API.

In the HP Requirement to Deploy (R2D) Value Stream, after creating a test in UFT, you can run that test automatically from HP Application Lifecycle Management (ALM) via the integration between ALM and UFT.

You can use the tests created in UFT for testing purposes and also to create monitoring scripts combining the tests. This saves time by avoiding the need to rewrite the monitoring scripts from scratch. The scripts can be added to the list of scripts in the HP Business Service Management (BSM) End-User Management module, as you would do with any script created with VuGen—LoadRunner's script generation tool. You can then assign the monitoring scripts and execute them in an HP Business Process Monitor (BPM) application configuration.

It is highly recommended to adjust the scripts for end-user monitoring purposes before using them in BSM. This includes configuring SLAs, monitoring thresholds, editing or combining scripts to provide better coverage of monitoring, and so on. For more information, see End-to-End Service Monitoring and Event Management Best Practices.

The following diagram illustrates the relationship between the products for this integration:



## Installing and Configuring UFT and BPM

This procedure provides the capability to leverage UFT tests created during product development to be used as BPM monitors on the deployed service in order to validate that the critical functionality required from the product is available for the end users.

### To install and configure UFT and BPM:

- 1. Install UFT on a BPM server. For details, see Chapter 2, "Installing UFT" on page 12 in HP Unified Functional Testing version 12.01 Installation Guide.
- 2. After the installation of UFT is complete, install BPM on the same machine. For details, see Chapter 6, "Installing BPM" on page 22 in HP Business Process Monitor version 9.24 Business Process Monitor Deployment Guide.

**Note:** During the installation, the BPM Configuration Wizard opens. The configuration for the UFT – BPM integration is included in the BPM Configuration Wizard.

3. Configure the integration between UFT and BPM. For details, see "QuickTest Professional (QTP) /Unified Functional Testing (UFT) Integration Page" on page 34 in *Business Process Monitor version 9.24 Deployment Guide*.