HP Change Configuration and Release Management (CCRM) Solution

HP Service Manager, HP Release Control, and HP Universal CMDB

For the Windows Operating System

Software Version: 9.30

Concept Guide

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Contents

Welcome to This Guide

This guide provides general information about the Change Configuration and Release Management (CCRM) solution—what the solution can accomplish and for whom.

This chapter includes:

Note: If you have any feedback or comments, please contact solutionpackagingandscp@hp.com.

How This Guide is Organized

This guide contains the following chapters:

Chapter 1 Introduction to CCRM

Provides a brief description of the Change Configuration and Release Management (CCRM) Solution and illustrates a typical deployment.

Chapter 2 CCRM Customer Scenarios

Provides sample customer scenarios implementing the CCRM Solution capabilities. This section demonstrates what you can achieve with this solution.

Appendix A: HP Universal Data Model

Provides a brief description of the HP Universal Data Model (UDM) and the functionality it can add to the CCRM Solution.

Who Should Read This Guide

This guide explains the motivation to install and use the CCRM Solution. It describes what the solution implementation will achieve, which Information Technology Infrastructure Library (ITIL) processes it supports, and describes the workflow between the products comprising the solution.

This guide is intended for:

- Customers
- Presales and sales personnel
- Professional service personnel
- Anyone who wants to learn about the solution, its workflow, and its contribution

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

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Chapter 1

Introduction to CCRM

This chapter includes:

CCRM – Overview

IT organizations today are plagued with numerous incidents that result from unplanned or improperly planned changes to the organization.

Changes to your IT infrastructure arise for the following reasons:

- proactively – to provide benefits to your organization, either through lower total cost of ownership (TCO), or by providing options that enable your business to develop
- reactively – to resolve errors that have an impact on the level of services that are provided

This document describes using the Change Configuration and Release Management (CCRM) solution to implement three closely linked ITIL processes—Change Management, Configuration Management, and Release and Deployment Management.

The CCRM solution enables the IT organization to:

- provide the structure and formal workflow necessary to implement changes
- reduce the risk of making changes by providing an accurate picture of your IT infrastructure, as well as the impact any change may have on IT services
- enable early detection of unplanned changes
- plan changes using an accurate record of the IT infrastructure

Change Configuration and Release Management Solution

The CCRM solution is comprised of three individual, but integrated products that are brought together. The products that comprise the CCRM solution are:

- HP Universal Configuration Management Database 9.05 or 10.00 (UCMDB)
- HP Service Manager 9.30 (SM)
- HP Release Control 9.13 (RC)

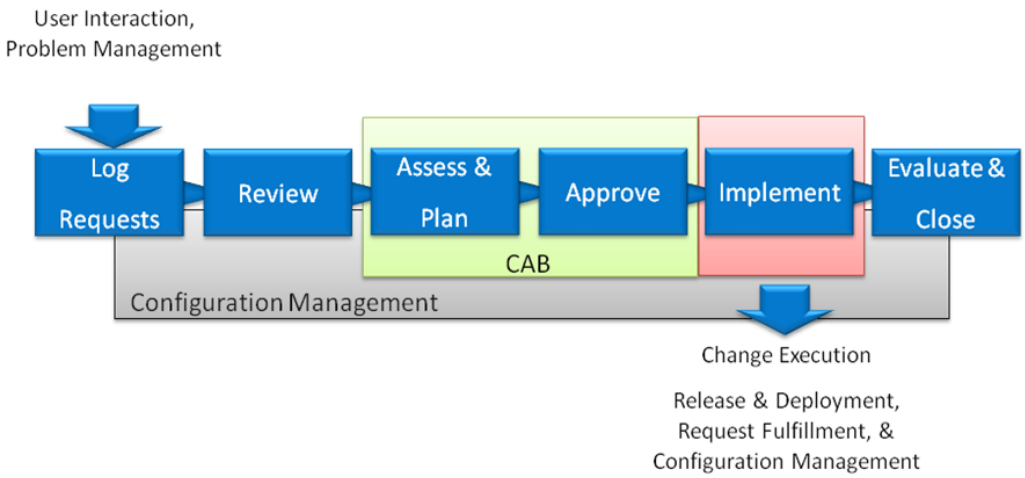
Additionally, the CCRM Extension solution includes:

- HP Operations Orchestration 9.00 (OO)
- HP Project and Portfolio Management 9.13 (PPM)
- HP Universal CMDB Configuration Manager 9.30 with SP1 or 10.00 (UCMDB-CM)

For deployment and configuration instructions, see the *Change Configuration and Release Management (CCRM) Configuration Guide*.

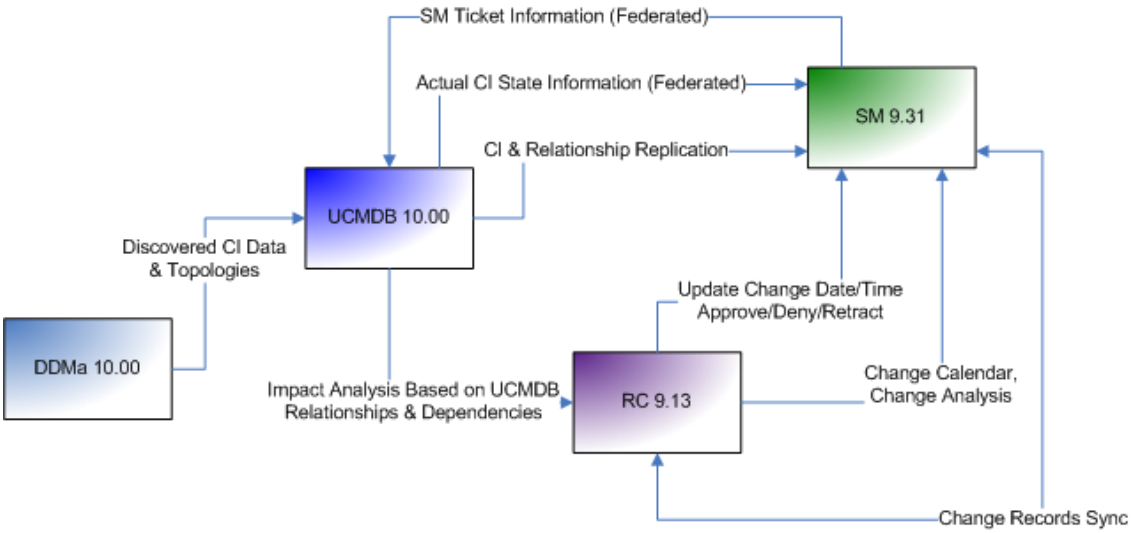
ITIL v3 Change Management Process Flow

The ITIL v3 Change Management Process Flow is the CCRM Solution main flow:



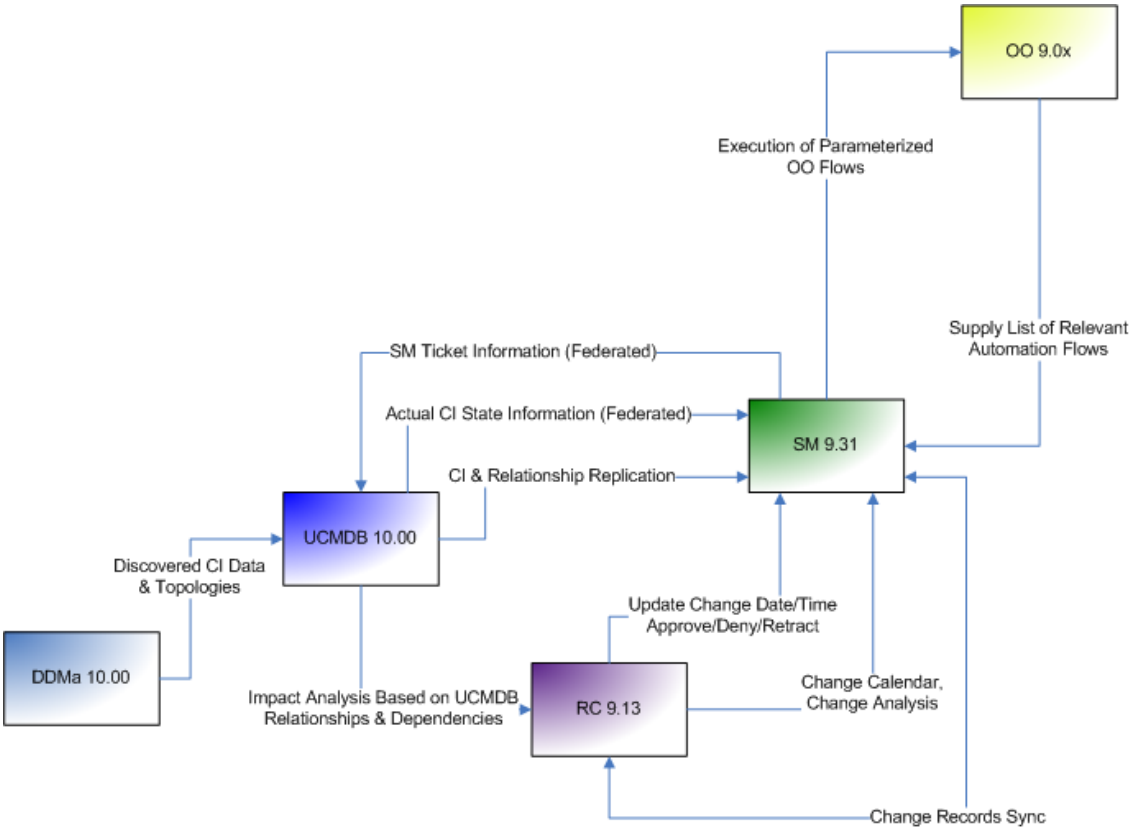
Core CCRM 9.30 Solution Diagram

The following diagram displays the various data flows of the Core CCRM Solution:

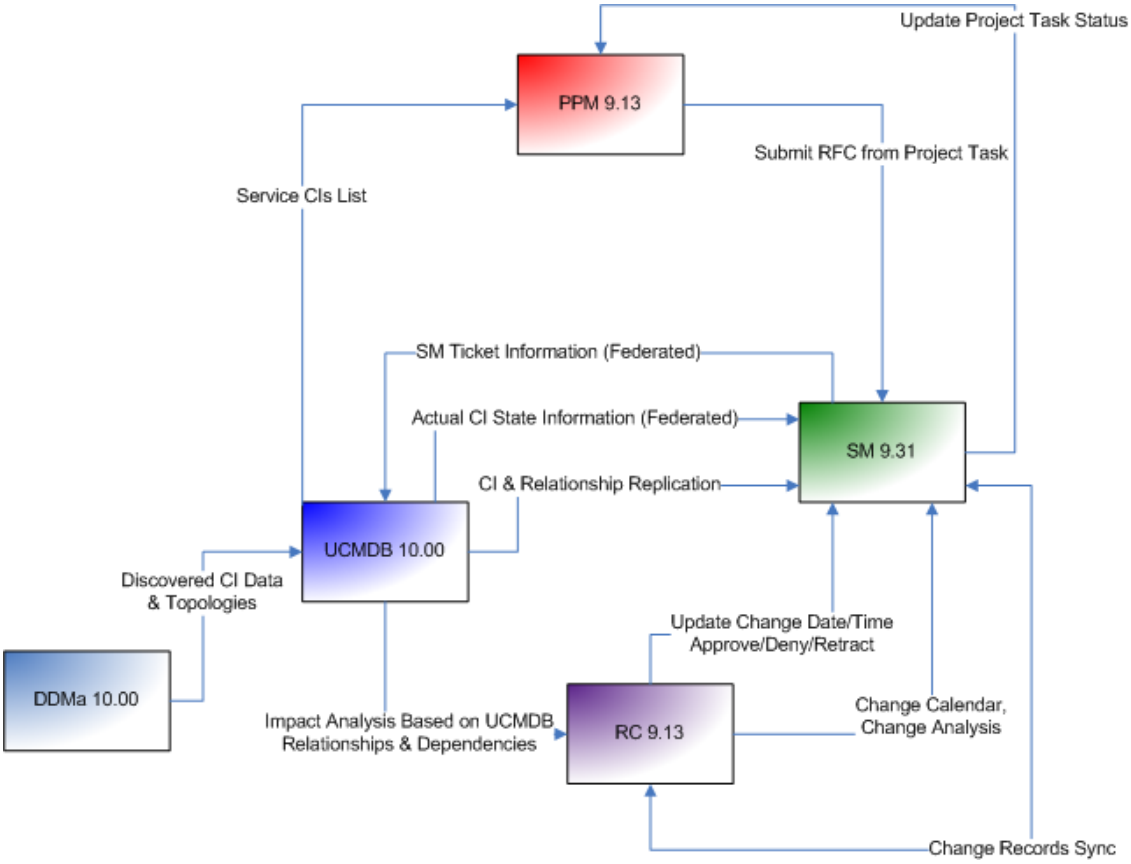


CCRM 9.30 Solution Extension Diagrams

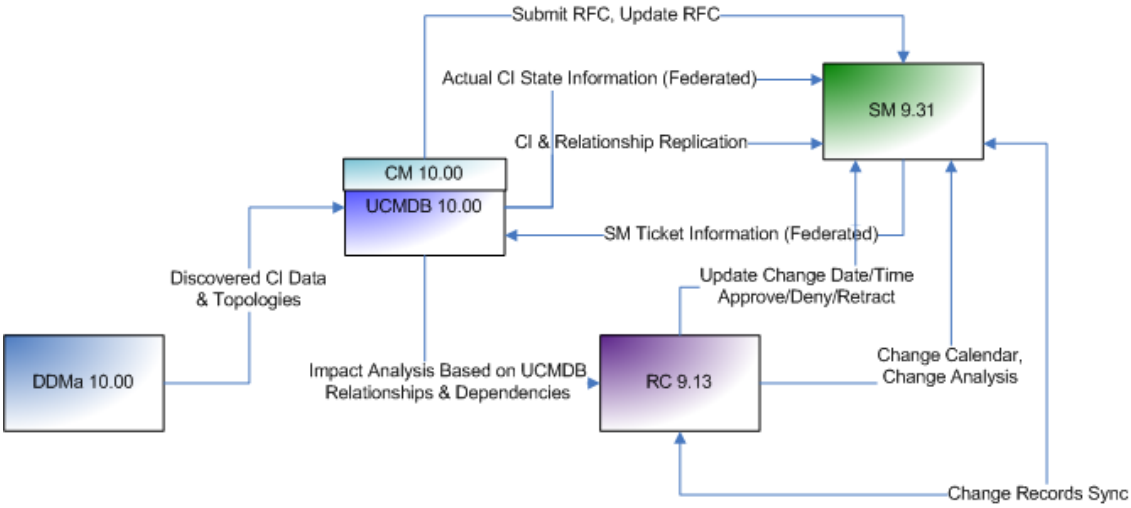
The following diagram displays the various data flows of the CCRM Solution Automation Extension utilizing HP Operations Orchestration:



The following diagram displays the various data flows of the CCRM Solution Extension utilizing HP Project and Portfolio Management:



The following diagram displays the various data flows of the CCRM Solution Extension utilizing HP Universal CMDB Configuration Manager:



Personas

The main personas in the following CCRM core story line are as follows:

- **Business Service Owner**

  Responsible for maintaining defined levels of availability and performance of applications. The Business Service Owner is also responsible for notifying the customers of problems, as well as validating that they are handled and resolved according to the Service Level Agreement (SLA).

- **Configuration Item Owner**

  Responsible for supporting and maintaining one or more specific Configuration Items (CI). The CI owner is responsible for the accuracy and integrity of the configuration item information.

- **Change Management Team**

  Headed by the Change Manager, this team is entrusted with the responsibility of reviewing and approving Request For Change (RFC) to progress to its later life cycle stages.

- **Change Manager**

  Authorizes and documents all changes in the IT infrastructure and its components (Configuration Items), with a discipline that minimizes risk and impact to the IT infrastructure..

- **Configuration Manager**

  Responsible for the day-to-day running of the configuration management process within the organization. The Configuration Manager ensures that the configuration environment adheres to the organizational standards and guidelines.

- **Project Manager**

  Responsible for detailing and managing the Project from its initial stages as a Project Proposal throughout its life cycle until completion of the Project.

- **Technical Group**

  Group assembled of the relevant technical people necessary in order to plan, build, test, and deploy a change to the IT infrastructure. This group may include people from various areas of the expertise, as well as vendor representatives.

Terms and Definitions

- **Actual State**

  The current physical and logical state of the IT infrastructure.

- **Authorized State**

  The physical and logical state in which the organization expects the IT infrastructure to be.

- **Change Advisory Board (CAB)**

  Group of people that advises the Change Manager in the assessment, prioritization, and scheduling of changes. This board is usually made up of representatives from all areas within the IT service provider, the business, and third parties such as suppliers.

- **Change Conflicts**

  When two or more changes require the same resources, such as people or components of the IT infrastructure, or that impact the same CIs in a given time frame.

- **Deployment Release**

  The implementation of a change into an environment (either test or production).

- **Desired Unplanned Change**

  A configuration change that:

  - Does not have an RFC
  - Does not cause a policy breach
  - Can be kept and authorized

- **Emergency Change Advisory Board (ECAB)**

  A sub-set of the Change Advisory Board who make decisions about high impact emergency changes. Membership in the ECAB may be decided at the time a meeting is called, and depends on the nature of the emergency change.

- **Planned Change**

  A configuration change that is derived from an RFC.

- **Request For Change (RFC)**

  An initial request that entails some form of modification, addition, or removal of CI(s). Once approved, these requests evolve into changes.

- **Undesired Unplanned Change**

  A configuration change that:

  - Does not have an RFC
  - Causes a policy breach
  - Will result in an RFC to roll back to the previous configuration

Chapter 2

CCRM Customer Scenarios

The story detailed in this document describes using the Change Configuration and Release Management solution to help IT organizations better manage the challenges related to controlling the risk, cost, and governance of change in increasingly complex and dynamic environments.

This chapter includes:

CCRM Use Case Solution

The CCRM use case solution that follows consists of one core story line, with several extensions. The core module is a simplified version of the CCRM solution that can be easily implemented. To provide modularity, any of the extension modules can be added on top of the core module in order to cover broader functionalities and processes within the CCRM solution.

The core story describes an operational change throughout its life cycle from creation to closure. The products depicted in the core story line are:

- Universal Configuration Management Database (UCMDB): Provides an essential foundation enabling all other products to use a common language (Universal Data Model—UDM) in order to support inter-application data synchronization processes. This foundation is the core of the CMS offering of HP.
- Service Manager (SM): Provides a robust life cycle approach for service support and delivery, such as incident, problem, change and request management processes.
- Release Control (RC): Provides the IT organization with better decision data on risk, impact, and scheduling to support better planning and implementation of planned changes to the IT infrastructure.

There are three extension stories:

- **Automated Change Process**, which involves Operations Orchestration (OO)

  Motivation:

  - Faster change execution and provisioning in order to speed up time-to-market and reduce staff hours
  - Enforce standard implementation processes that can be leveraged every time by every team
  - Automate tasks to reduce amount of human errors

- **Changes as part of a Project**, which involves Project and Portfolio Management (PPM)

  Motivation:

  - Closely track changes and their completion as part of a major IT project by linking project tasks to RFCs

- **Configuration Management**, which involves Universal CMDB Configuration Manager (UCMDB-CM)

  Motivation:

  - Keep IT infrastructure aligned to IT configuration policy standards by opening new RFC's
  - Correlate configuration changes to existing RFC for planned change validation
  - Manage unplanned configuration changes by authorizing desired ones and rolling back (through RFC) the undesired ones

Note: The core story describes an operational change. Application changes are currently not a part of this solution version.

CCRM Customer Scenarios

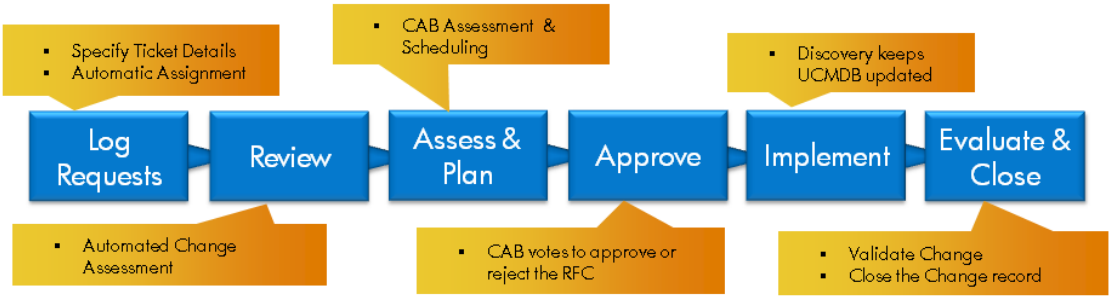
This task illustrates the CCRM core story and various extension stories.

CCRM Core Story – Operational Change

An operational change is any change to the software infrastructure that does not require software development. It is part of the service life cycle and may be triggered in order to maintain, restore, and/or improve service life cycles.

CCRM Core Story – Operational Change Flow Diagram

The following diagram summarizes the flow detailed in the CCRM core story for an operational change.



CCRM Core Use Case – Operational Change

1. Request For Change (RFC) submission:
   - The Change Initiator logs the RFC in Service Manager, including all change details and affected configuration items (CIs).
   - You can select preferred time for implementation.
   - The RFC is automatically assigned to the relevant Change Owner.
2. Verification that the RFC is CAB ready:
   - The RFC automatically assesses and evaluates with impact analysis, risk analysis, collision detection and time period conflicts provided by Release Control
   - There is quick and easy visibility of objective assessment data in SM that enables the Change Owner to perform initial assessment, resolve conflicts, and get it **Right the First Time**.
   - Advanced: Use the RC interface for automatic suggestion of new time for change implementation in case of conflicts. New definition will be updated in the SM RFC.
3. CAB discussion and approval:
   - CAB assesses the RFCs based upon risk and impact, as well as detecting collisions after the RFC has already been scheduled.
   - CAB votes to approve or reject the RFC, which updates the SM RFC record.
   - Any rejection returns the RFC to the Change Owner for further planning.
   - Advanced: CAB can be held virtually using the RC interface.
4. Change implementation:
   - Approved RFCs are updated in SM and proceed to implementation.
   - Once the change is implemented, Discovery keeps UCMDB updated.
   - The Change Implementer updates the change record in SM with the implementation results.
5. Review and closure:
   - SM indicates whether the relevant CI attributes have been changed as planned.
   - Perform a Post Implementation Review to confirm that the change has met its objective and update the Change Record.
   - Advanced: PIR results can be logged in RC for future RFC assessments.
   - The change record is closed.

Core Story Variations

The CCRM core story describes working a Normal Change (ITIL v3 definition) through to completion.

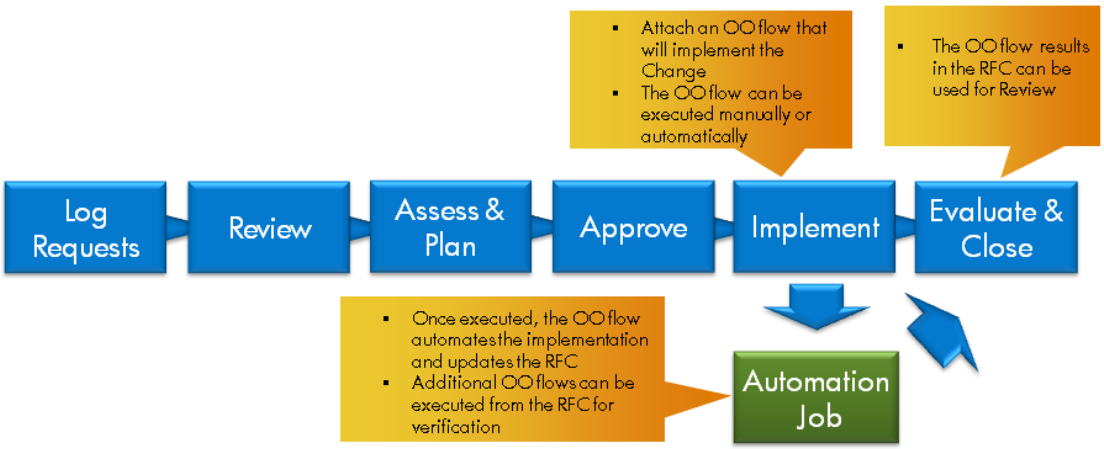
- CCRM also supports two types of pre-authorized changes:
  - **Standard Change (ITIL v3 definition):** An RFC could be one of a predefined set of requests that has a defined implementation process and does not have impact on the IT infrastructure. These RFCs do not require going through the formal change process. Once logged, it is automatically approved and assigned to the relevant parties who implement the change.
  - **Custom IT organization definition:** The Change Manager can define the level of risk and impact that requires the full change process to be implemented. RFCs that do not meet these criteria can follow the pre-authorized process.
- Other types of changes include:
  - **Emergency change:** In most cases of emergency change, authorization is granted by the Emergency Change Advisory Board (ECAB). Emergency changes may require senior stakeholder approval or any other criteria defined by the organization. In addition, there may be less testing effort, based on risk assessment, in order to implement the change quickly. Full documentation of the change and configuration items may be done after the change has been implemented in order to save time.

CCRM Extension Story – Change Process with Automation

CCRM Extension Story – Change Process with Automation enables some parts of the basic operational deployment already illustrated to be automated.

Automated Deployment Diagram

The following diagram summarizes the flow detailed in the Automated Deployment.



Automated Deployment

The base use case remains the same as in the core story starting on "CCRM Core Use Case – Operational Change" on page 18, with the following enhancements:

1. Request For Change (RFC) submission:
   - The Change Initiator can select a predefined OO flow that will implement the change after approval, and attach it to the RFC.
   - In addition, the flow triggering can be configured from the following:
     - Manually start flow after approval
     - Automatically start flow upon approval
     - Automatically start flow after approval at a defined period of time
2. Verification that the RFC is CAB ready:

   No Change

3. CAB discussion and approval:

   No Change

4. Change implementation:

   - If not done in phase 1, the Change Implementer has the ability to attach an OO flow that will implement the change.
   - Based on the condition defined, the OO flow can be executed manually or automatically.
   - Flow parameters are defined – either fixed or dynamic – as taken from the affected CI or change ticket fields.
   - Once executed, the OO flow automates the implementation and updates the RFC with ongoing and final results.
   - In addition, the OO report can be launched directly from the SM change ticket for the specific flow.

5. Review and closure:

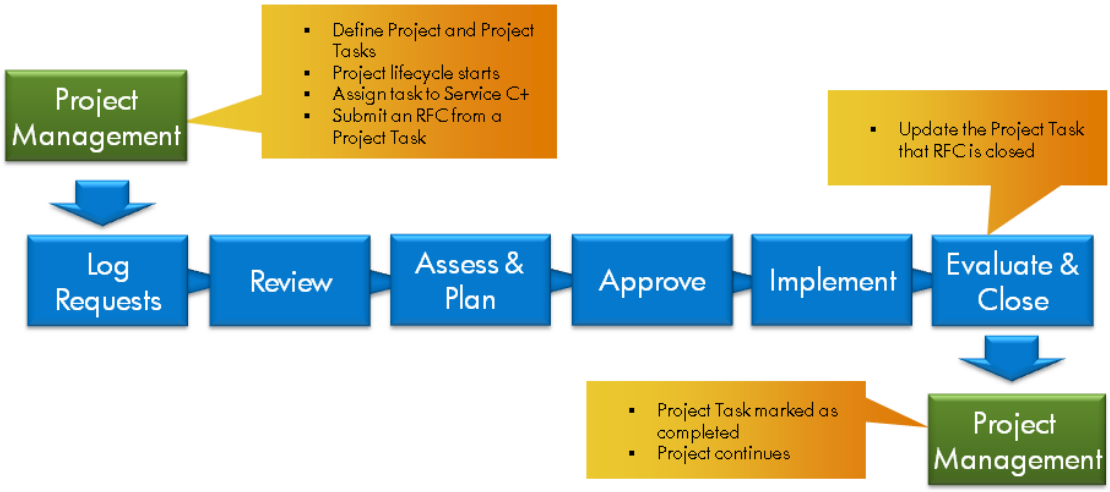
   - OO flow results in the RFC can be used for review.
   - Additional OO flows can be executed from the RFC for verification.

CCRM Extension Story – Change as Part of a Project

CCRM Extension Story – Change as Part of a Project enables a part of the basic operational deployment already illustrated to be automated.

Change as Part of a Project Diagram

The following diagram summarizes the flow detailed in the Change as Part of a Project story.



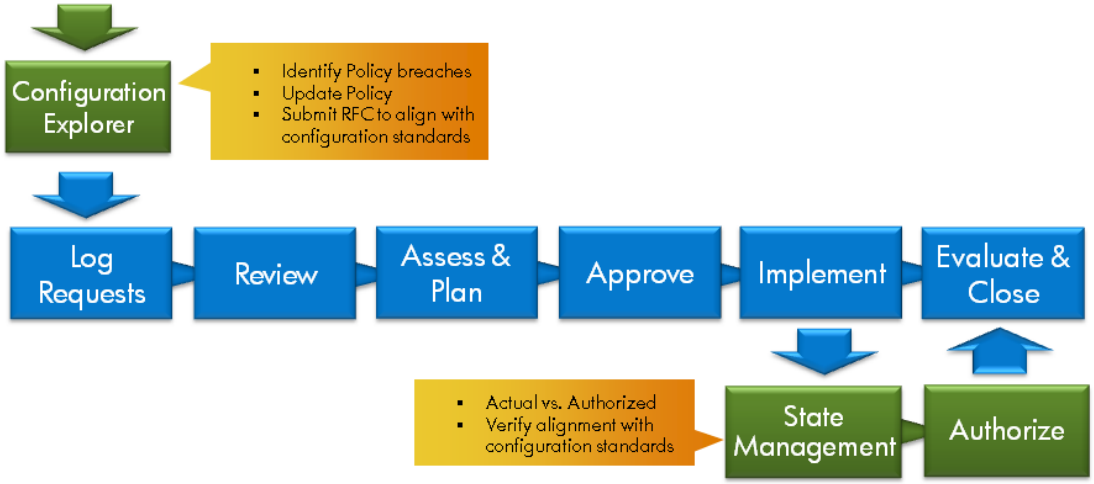
Change as Part of a Project

1. A project is created in PPM.
2. The Project Manager defines the necessary steps for completing the project in the form of Project Tasks. The Project Tasks are attached to the corresponding Business Service CIs coming from UCMDB.
3. In case the task requires a change implementation, an RFC is submitted from the PPM project task to SM.
   - As the task was associated with a Service CI, the RFC in SM is now opened in the context of that same Service CI.
   - The PPM user can launch the SM Change ticket from the PPM user interface.
4. The RFC goes through the Change life cycle described in the CCRM Core Story.
5. Once the Change request has been closed, the Project Task is automatically marked as completed. The Project ends when all Project Tasks have been completed.

CCRM Extension Story – Configuration Management

CCRM Extension Story – Configuration Management enables users to manage change by configuration standards, validate planned changes, and authorize or rollback unplanned changes.

Initiate RFC from CM Diagram

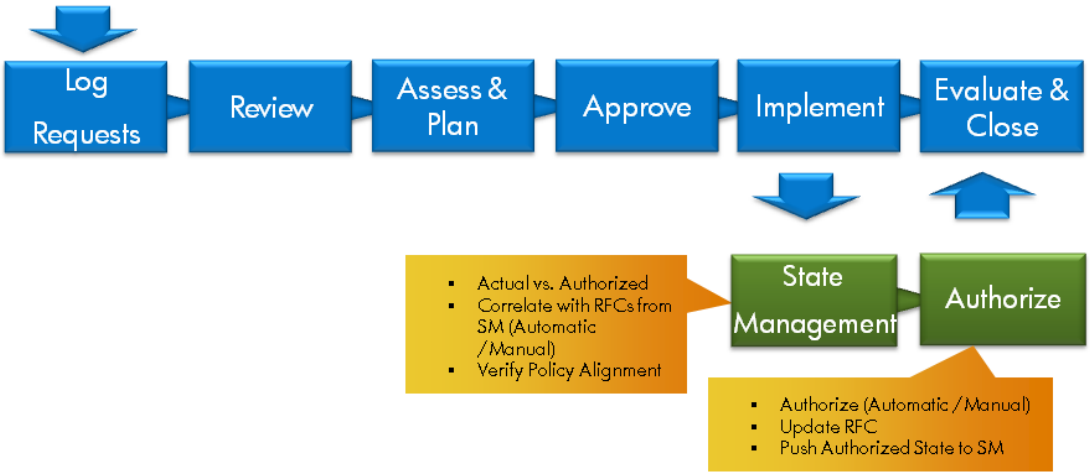


Updating Configuration Policy

1. Configuration Manager updates a configuration policy in CM.
2. Some CIs are not aligned with this new policy.
3. In order to align those CIs, he submits an RFC from the CM user interface.
4. RFC goes through the change life cycle in SM.
5. The change is implemented and Discovery updates the CI actual state.
6. Configuration Manager verifies that the CIs are now aligned to the new policy.

7. CM updates the RFC with the verification.
8. RFC is reviewed and closed.

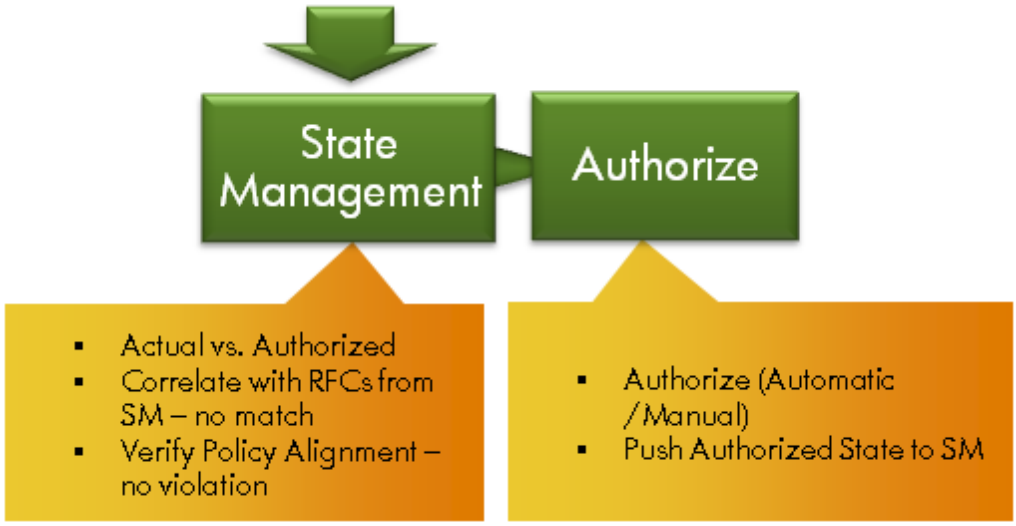
Authorize and Log a Planned Change Diagram



Authorize and Log a Planned Change

1. RFC is opened in SM and goes through the change life cycle until implementation.
2. Discovery runs and updates the CI actual state.
3. Configuration Manager reviews the CI actual state in CM.
4. He checks whether there is an RFC on that CI that can be related to the identified CI change.
5. He verifies whether the new configuration is aligned with relevant policies.
6. As a relevant RFC is found and there is no policy beach, he authorizes the new configuration.
7. The new authorized state is pushed to SM.
8. The RFC is updated with the configuration verification.
9. The RFC is reviewed post implementation and closed.

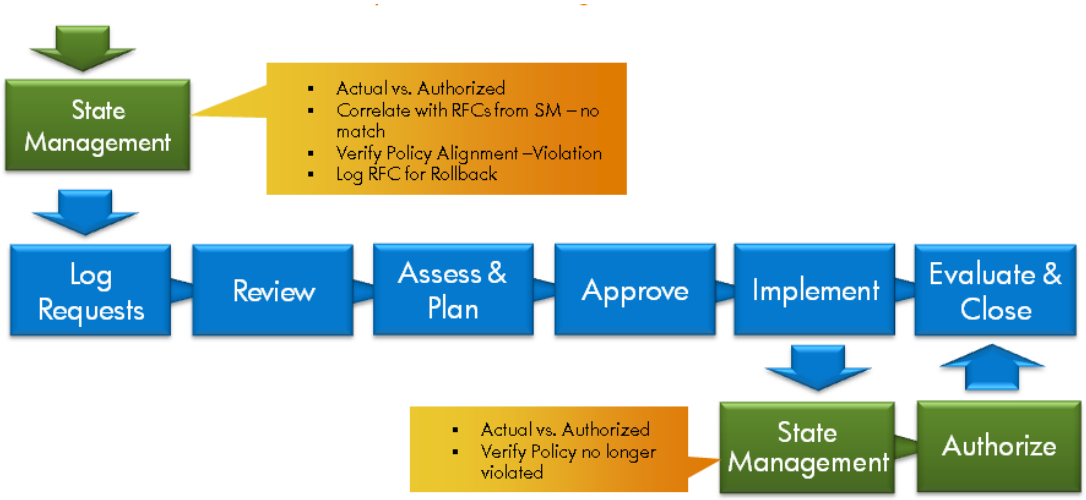
Desired Unplanned Change Diagram



Desired Unplanned Change

1. Discovery runs and updates a CI actual state.
2. Configuration Manager reviews the CI actual state in CM.
3. He checks whether there is an RFC on that CI that can be related to the identified CI change.
4. He verifies whether the new configuration is aligned with relevant policies.
5. Although no relevant RFC was found, there is no policy breach and the new configuration can be (or should be) kept. The Configuration Manager authorizes the new configuration.
6. The new authorized state is pushed to SM.

Undesired Unplanned Change Diagram



Undesired Unplanned Change

1. Discovery runs and updates a CI actual state.
2. Configuration Manager reviews the CI actual state in CM.
3. He checks whether there is an RFC on that CI that can be related to the identified CI change.
4. He verifies whether the new configuration is aligned with relevant policies.
5. Since there is no related RFC found and the new configuration causes a policy breach (or should not be kept for other reasons), the Configuration Manager does not authorize the configuration change.
6. In addition, he submits an RFC to SM in order to roll back to the original configuration.
7. Submitting the change to SM is done from the CM user interface.
8. The rollback RFC goes through the change life cycle.
9. Discovery runs and updates the CI actual state (which has returned to the original).
10. The detected change is verified in CM. The CI is promoted to the actual state and the RFC is updated.
11. The new authorized state is pushed to SM.

Appendix

Appendix A: HP Universal Data Model

This appendix includes:

Overview

The Change Configuration and Release Management (CCRM) solution uses the HP Universal Configuration Management Database (UCMDB) as the central repository for CIs and relationships, which are shared between the different solution components. The UCMDB data model is based on HP Universal Data Model (UDM), which enables the inter-application data synchronization processes and ensures that all CIs are kept with the same Universally Unique Identifier (UUID) throughout the Change lifecycle. Specifically,the UDM is used in the following cases:

- HP Universal CMDB – HP Service Manager (SM) integration: Pushing CIs and relationships from UCMDB to SM, which enables using UCMDB-originated CIs when creating a Request For Change (RFC) in SM.
- HP Configuration Manager (CM) – HP Service Manager integration: Directly submitting an RFC from CM to SM while using the UCMDB-CM CI as an RFC-affected CI in SM.