HP Project and Portfolio Management Center

Software Version: 9.30

Portfolio Management User's Guide

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Contents

Chapter 1: Getting Started with HP Portfolio Management

- "Introduction to HP Portfolio Management" below

- "Related Information" on the next page

Introduction to HP Portfolio Management

HP Portfolio Management is an Project and Portfolio Management Center (PPM Center) application that provides a real-time view of your IT investments and supports your strategic, financial, functional, and technical governance requirements. HP Portfolio Management helps you align your IT proposals, current projects, and established assets with your business strategy and thereby maximize the value of both new initiatives to expand and transform your business and existing applications that run your business.

HP Portfolio Management allows business and IT stakeholders to do the following:

- Collaboratively govern IT investments with appropriate levels of review and approval

- Monitor the lifecycles of entities—proposal justification and review, project initiation, execution, deployment, and benefits realization

- Configure various portfolios as sets of proposals, projects, assets, programs, and other portfolios

- Make better investment decisions by analyzing what-if scenarios using easy-to-build scenario comparisons, including running automated scenario optimizations according to specific objectives

> **Note:** In this document, the term "lifecycle entity" is used to mean a proposal, a project, or an asset, and "lifecycle entities" are any combination of proposals, projects, and assets.
>
> Each of these types of lifecycle entities can be created from scratch, but typically a proposal automatically becomes a project upon approval of the proposal and the project automatically becomes an asset upon completion of the project, depending on the configuration of the request types.

"Getting Started with HP Portfolio Management" above (this chapter) provides an overview of HP Portfolio Management and a list of other information related to HP Portfolio Management.

With HP Portfolio Management, you can do the following:

- Create lifecycle entities. For more information, see "Creating Lifecycle Entities" on page 9.

- Build portfolios to track performance of specific collections of lifecycle entities, programs, and subportfolios. For more information, see "Creating and Viewing Hierarchical Portfolios" on page 24.

- Analyze a portfolio using various pages and portlets that slice the data several ways, and quantify benefits (values) and risks that determine lifecycle entity scores, as described in "Analyzing the Portfolio" on page 52. (Mathematical formulas for several financial metrics that HP Portfolio Management calculates are provided in "Financial Metrics" on page 120.)

- Build comparisons of multiple scenarios to perform versatile what-if analyses having various objectives, to run automated scenario optimizations, and to generate efficient frontier graphs, as described in "What-If Analysis" on page 67.

Note: To use a new installation of HP Portfolio Management, an administrator must run a script to establish an appropriate set of periods that cover a range of fiscal years for your company. For more information, see the *Generating Fiscal Periods* document.

Related Information

The following documents also include information related to HP Portfolio Management:

- *HP Portfolio Management Configuration Guide*

- *Generating Fiscal Periods*

- *Upgrade Guide*

- *HP Project Management User's Guide*

- *HP Program Management User's Guide*

- *HP Resource Management User's Guide*

- *HP Financial Management User's Guide*

- *Security Model Guide and Reference*

- *HP-Supplied Entities Guide* (includes descriptions of portlets, request types, workflows, and reports)

Other more general information of interest is available in the *Getting Started* guide.

Chapter 2: Creating Lifecycle Entities

Overview of Creating Lifecycle Entities

> **Note:** In this document, the term "lifecycle entity" is used to mean a proposal, a project, or an asset, and "lifecycle entities" are any combination of proposals, projects, and assets.
>
> Each of these types of lifecycle entities can be created from scratch, but typically a proposal automatically becomes a project upon approval of the proposal and the project automatically becomes an asset upon completion of the project, depending on the configuration of the request types.

Lifecycle entities can be included in portfolios (see "Creating and Viewing Hierarchical Portfolios" on page 24) and in scenario comparisons (see "What-If Analysis" on page 67).

This chapter explains how to do the following:

- Create lifecycle entities

- Create business objectives and staffing profiles attached to lifecycle entities

The following sections describe how to create proposals, projects, and assets from scratch, how projects are created automatically from proposals, and how assets are created automatically from projects.

Creating Proposals

A proposal consolidates all the information needed to make a decision about a proposed project. Once submitted, proposals follow a predefined business process toward resolution.

> **Note:** If proposals do not operate as described in this guide, they might have been configured differently at your company. Contact your administrator for more information if necessary.

To create a proposal:

1. Log on to PPM Center.

2. From the menu bar, select **Create > Proposal.**

    Alternatively, you can select **Open > Portfolio Management > Create Proposal** or you can select **Open > Demand Management > Create Request,** select a **Request Type** of **PFM - Proposal,** and click **Create.**

Create New PFM - Proposal

Submit　Cancel　Save Draft

Expand All | Collapse All

− Summary

Created By:
Admin User

Driving Process:
PFM - Proposal

Business Unit:
[▼]

Status:
Not Submitted

Description:
[   ]

Project Type:
[   ]

*Region:
[   ]

Proposal Dependencies:
[   ]

− Proposal Details

*Proposal Name:
[   ]

Project Class:
[▼]

Asset Class:
[▼]

Business Objective:
[   ]

Primary Beneficiary:
[▼]

Sponsor Department:
[▼]

Executive Sponsor:
[   ]

Project Sponsor:
[   ]

Business Unit Affected:
[▼]

Vendors Involved:
[   ]

*Expected Start Period
[   ]

*Expected Finish Period
[   ]

Project Manager:
[   ]

Benefits Manager:
[   ]

− Business Case Details

Staffing Profile:
[(No Staffing Profile)]　Create

Nominal Return:

Value Rating:
0

Risk Rating:
0

Custom Field Value:

Score Adjustment
[   ]

Total Score:
0

Business Case Doc:
[(No Document Attached)]　Add

Requirements Doc:
[(No Document Attached)]　Add

Financial Summary:
(No Financial Summary)

Associated Programs:
(No Associated Programs)

Portfolio:
(No Associated Portfolio)

− Value Ratings

Internal Rate of Return:
[▼]

Strategic Match:
[▼]

Competitive Advantage:
[▼]

Competitive Response:
[▼]

Productivity:
[▼]

− Risk Ratings

Organization Risk:
[▼]

Technical Risk:
[▼]

Architecture Risk:
[▼]

Definition Risk:
[▼]

Infrastructure Risk:
[▼]

+ Resources (No Resources Exist)

+ Notes

+ References

3. Complete all required fields and any optional fields.

> **Note:** Proposals can be configured to require you to specify a different set of fields than are required by default. For information on changing the fields that are required, see the *HP Demand Management Configuration Guide*.

4. Click **Submit.**

The proposal is created and begins its approval process.

> **Note:** Creating the proposal creates an associated financial summary with no data. If you have the required access grants and access rights, you can view or edit the financial summary. For more information, see the *HP Financial Management User's Guide.*

"Creating Projects from Proposals" below describes how proposals, when approved, become projects, and how some of the field names change accordingly.

Creating Projects

An active project consolidates the information for, records actions taken on, and reflects the status of an initiative currently being worked on.

> **Note:** If projects do not operate as described in this guide, they might have been configured differently at your company. Contact your administrator for more information if necessary.

A project is created automatically when a proposal is approved, carrying forward relevant information and attached entities (see "Creating Projects from Proposals" below). You can also create projects from scratch (see "Creating Projects from Scratch" on page 15).

Creating Projects from Proposals

When a proposal is approved, PPM Center takes the following actions:

- By default, a corresponding project is automatically created. A reference to the project is added to the proposal, the proposal is closed, and a reference to the proposal is added to the project.

- The project retains and continues to use the same financial summary as the proposal. For more information, see the *HP Financial Management User's Guide.*

- By default, a snapshot of the financial summary is taken automatically. This snapshot cannot be deleted, and it becomes the Plan of Record (baseline) for the lifecycle entity. The **Approved**

Proposal Snapshot field, with a link to the snapshot, is added to the proposal. For more information, see the *HP Financial Management User's Guide.*

- If a staffing profile is attached to the proposal, the staffing profile is copied and attached to the project.

> **Tip:** You can use the original proposal's staffing profile and the snapshot of the approved proposal's financial summary as baselines for future comparisons.

The proposal field values that are automatically copied into the project are described in "Table 2-1. Project fields copied from a proposal" below (some fields get renamed for the project as indicated). All the fields in "Table 2-1. Project fields copied from a proposal" below are enabled by default, but some are not displayed by default. All fields that are enabled and that have values in the proposal get copied to the project, whether or not they are displayed.

Table 2-1. Project fields copied from a proposal

Field Name	Description
Summary section	
Business Unit	Business unit that sponsors the project.
Details section, Project Details subsection	
Project Name (As a proposal, was Proposal Name)	Name of the project.
Project Class	Class of project to which the project belongs (for example, **Innovation**).
Asset Class	Class of asset to which the project belongs (for example, **Infrastructure**).
Business Objective	Business objective with which the project is aligned.
Details section, Business Case Details subsection	
Staffing Profile	(Read-only) Resource demand of the project.
Nominal Return	(Read-only) Nominal return for the project, calculated as described in "Total Nominal Return" on page 120.
Value Rating	(Read-only) Total qualitative Value calculated for the project, as described in "Determining Value and Risk Ratings" on page 60.
Risk Rating	(Read-only) Total qualitative Risk calculated for the project, as described in "Determining Value and Risk Ratings" on page 60.
Net Present Value [a]	NPV for the project, calculated as described in "Net Present Value (NPV)" on page 120.

Table 2-1. Project fields copied from a proposal, continued

Field Name	Description
Custom Field Value [a]	Custom financial metric being used to rank the project.
Score Adjustment	Amount (positive or negative) by which the calculated **Value Rating** – **Risk Rating** for the project is changed to arrive at the **Total Score.**
Total Score	(Read-only) Total score (**Value Rating** – **Risk Rating** + **Score Adjustment**) calculated for the project.
Discount Rate [a]	Discount rate being applied for the project, if any, as described in "Net Present Value (NPV)" on page 120.
Financial Summary	(Read-only) If the user is authorized to view the financial summary, name of the financial summary for the proposal and project, linked to the financial summary. The same financial summary, not a copy, is used for the proposal and the project.
Associated Programs	(Read-only) Programs that include the project. Only programs for which you have view or edit access are listed. For more information about associated programs, see the *HP Program Management User's Guide.*
Portfolio	(Read-only) Portfolio that includes the project, shown as a link to the portfolio if you have view or edit access to it. For more information about portfolios, see "Creating and Viewing Hierarchical Portfolios" on page 24.
a. By default, not displayed. However, your PPM Server could be configured to display this field.	

Tip: Based on your business needs, a workflow can be configured to create multiple projects at different workflow steps from a single proposal. For example, you can implement an approved proposal as a set of separate projects across various business units. You can create custom financial data for the various projects. For more information, see the *HP Financial Management User's Guide.*

Note: A proposal may or may not track capitalized costs (in addition to operating costs) based on the setting of the option **The proposal is for a project that tracks capital costs** on the Financial Summary Settings page of the proposal. When the proposal becomes a project, this proposal setting can conflict with the setting of the option **Allow capitalized costs on this project** on the Cost and Effort policy of the project.

If the Cost and Effort policy of the project type is *locked* (meaning that no individual project of that type can be made to override any settings of that Cost and Effort policy) *and* if that policy's setting for tracking of capitalized costs conflicts with the financial summary setting for the proposal, the setting of the Cost and Effort policy prevails. Otherwise, the setting for tracking the project's capitalized costs is consistent with the setting for the proposal.

Creating Projects from Scratch

You can create projects from scratch, bypassing the proposal process. A project you want to track might be planned or might already be underway.

To create a project from scratch:

1. Log on to PPM Center.

2. From the menu bar, select **Create > Project.**

   Alternatively, you can select **Open > Portfolio Management > Create Project.**

   Create New Project

*Project Name:	
*Project Type:	
Project Manager:	Joseph Banks
*Planned Start Period:	
*Planned End Period:	
*Region:	Enterprise

   Create

3. Complete all required fields and any optional fields.

   Note: Projects can be configured to require you to specify a different set of fields than are required by default. For information on changing the fields that are required, see the *HP Demand Management Configuration Guide.*

4. Click **Create.**

   The project is created, with the status of In Planning.

   Note: Creating the project from scratch creates an associated financial summary with no data. If you have the required access grants and access rights, you can view or edit the financial summary. For more information, see the *HP Financial Management User's Guide.*

Creating Assets

An asset consolidates the information for, records actions taken on, and reflects the current status of an entity that the company maintains and uses on an ongoing basis without further development. All active assets should be tracked at an aggregate level such as ERP, rather than at the level of every application.

> **Note:** If assets do not operate as described in this guide, they might have been configured differently at your company. Contact your administrator for more information if necessary.

By default, PPM Center automatically creates an asset when a project is completed, carrying forward relevant information and attached entities (see "Creating Assets from Projects" below). You can also create assets from scratch (see "Creating Assets from Scratch" on the next page).

Creating Assets from Projects

When a project is completed, PPM Center takes the following actions:

- By default, a corresponding asset is automatically created. A reference to the asset is added to the project, the project is closed, and a reference to the project is added to the asset.

- The asset retains and continues to use the same financial summary as the project. For information about financial summaries, see the *HP Financial Management User's Guide.*

- If a staffing profile is attached to the project, the staffing profile is *not* copied to the asset.

The project field values that are automatically copied into the asset are described in "Table 2-2. Asset fields copied from a project" below (some fields get renamed for the asset as indicated). All the fields in "Table 2-2. Asset fields copied from a project" below are enabled by default, but some are not displayed by default. All fields that are enabled and that have values in the project get copied to the asset, whether or not they are displayed.

Table 2-2. Asset fields copied from a project

Field Name	Description
Summary section	
Business Unit	Business unit that is the predominant user of the asset.
Details section, Asset Details subsection	
Asset Name (As a project, was Project Name)	Name of the asset.
Asset Health (As a project, was Project Health)	Status of the asset.
Project Class	Class of project to which the asset belongs (for example, **Innovation**).
Asset Class	Class of asset to which the asset belongs (for example, **Infrastructure**).

Table 2-2. Asset fields copied from a project, continued

Field Name	Description
Business Objective	Business objective with which the asset is aligned.
Project	Project that became the asset.
Details section, Business Case Details subsection	
Nominal Return	(Read-only) Nominal return for the asset, calculated as described in "Total Nominal Return" on page 120.
Value Rating	(Read-only) Total qualitative Value calculated for the asset, as described in "Determining Value and Risk Ratings" on page 60.
Risk Rating	(Read-only) Total qualitative Risk calculated for the asset, as described in "Determining Value and Risk Ratings" on page 60.
Net Present Value [a]	If enabled, NPV for the asset, calculated as described in "Net Present Value (NPV)" on page 120.
Custom Field Value [a]	If defined, custom financial metric being used to rank the asset.
Score Adjustment	Amount (positive or negative) by which the calculated **Value Rating** – **Risk Rating** for the asset is changed to arrive at the **Total Score.**
Total Score	(Read-only) Total score (**Value Rating** – **Risk Rating** + **Score Adjustment**) calculated for the asset.
Discount Rate	Discount rate being applied for the asset, if any, as described in "Net Present Value (NPV)" on page 120
Financial Summary	(Read-only) If the user is authorized to view the financial summary, name of the financial summary for the project and asset, linked to the financial summary. The same financial summary, not a copy, is used for the project and the asset.
Associated Programs	(Read-only) Programs that include the asset. Only programs for which you have view or edit access are listed. For more information about associated programs, see the *HP Program Management User's Guide.*
Portfolio	(Read-only) Portfolio that includes the asset, shown as a link to the portfolio if you have view or edit access to it. For more information about portfolios, see the *HP Portfolio Management User's Guide.*

a. By default, not displayed. However, your PPM Server could be configured to display this field.

Creating Assets from Scratch

You can create assets from scratch, bypassing the proposal and project processes. An asset you want might already exist.

To create an asset from scratch:

1. Log on to PPM Center.

2. From the menu bar, select **Create > Asset.**

   Alternatively, you can select **Open > Portfolio Management > Create Asset** or you can select **Open > Demand Management > Create Request,** select a **Request Type** of **PFM - Asset,** and click **Create.**

Create New PFM - Asset

Submit   Cancel   Save Draft

Expand All | Collapse All

− Summary

Created By:
Joseph Banks

Driving Process:
PFM - Asset

Business Unit: **Status:**
                                                      Not Submitted

Description:

Asset Dependencies:

Project Manager:

*Region:

Benefits Manager:

− Asset Details

*Asset Name: **Asset Health:**

Project Class: **Asset Class:**

Annual Maintenance Cost: **Business Objective:**

Project:

Vendor Name: **Under Maintenance with Vendor:**
                                                      ○ Yes ○ No

Placed in Service Date: **Expected End of Life Date:**

Location: **Supervisor:**

Dependent Applications:

− Business Case Details

Staffing Profile:
(No Staffing Profile)   Create

Nominal Return: **Value Rating:**   **Risk Rating:**
0   0   0

Score Adjustment: **Total Score:**
                             0

*Discount Rate:
10

Financial Summary:
(No Financial Summary)

Associated Programs:
(No Associated Programs)

Portfolio:
(No Associated Portfolio)

− Value Ratings

Internal Rate of Return:

Strategic Match:

Competitive Advantage:

Competitive Response:

Productivity:

− Risk Ratings

Organization Risk:

Technical Risk:

Architecture Risk:

Definition Risk:

Infrastructure Risk:

+ Notes

+ References

3. Complete all required fields and any optional fields.

> **Note:** Assets can be configured to require you to specify a different set of fields than are required by default. For information on changing the fields that are required, see the *HP Demand Management Configuration Guide.*

4. Click **Submit.**

The asset is created.

> **Note:** Creating the asset from scratch creates an associated financial summary with no data. If you have the required access grants and access rights, you can view or edit the financial summary. For more information, see the *HP Financial Management User's Guide.*

Using Staffing Profiles with Lifecycle Entities

Staffing profiles allow project managers to plan and track the anticipated demand for resources, organized by role. Each line in a staffing profile tracks a role and optionally a resource who can fulfill that role.

Staffing profiles can be linked in a one-to-one manner with lifecycle entities—proposals, projects, and assets. When a proposal is approved and becomes a project, if a staffing profile is attached to the proposal, the staffing profile is copied and attached to the project. When a project is completed and becomes an asset, the staffing profile of the project is *not* copied to or shared with the asset. If the asset requires a staffing profile, create a new staffing profile for the asset.

As described in "Analyzing the Portfolio" on page 53, staffing profiles (resources) can be presented in various ways in a bubble chart.

Creating Staffing Profiles and Linking Them to Lifecycle Entities

You can link an existing staffing profile to a lifecycle entity, or create a new staffing profile that is linked to the lifecycle entity, as follows:

- In a proposal or an asset, in the **Staffing Profile** field in the **Business Case Details** section, select an existing staffing profile or click **Create.**

- In a project, to create a staffing profile, click the **Create a Staffing Profile** button on the **Project Summary** tab of the Project Overview page.

  To link an existing staffing profile to a project, from the menu bar select **Search > Staffing Profiles,** and then search for, select, and open the desired staffing profile. In the Staffing Profile

window, click **Change Header.** In the Change Staffing Profile Header window, select **Project** in the drop-down list after the text **This is a** and select a project so that the screen text and fields read:

This is a Project Staffing profile for *<selected project>*

For detailed information on creating and working with staffing profiles, see the *HP Resource Management User's Guide.*

Calculating Financial Summary Forecast Costs from Staffing Profiles

A lifecycle entity's financial summary can be configured such that its forecast cost for labor is calculated (rolled up) from the lifecycle entity's staffing profile.

With this configuration, if an individual resource has a cost category specified, that cost category is used for the financial summary forecast. If the resource has no cost category specified, the position's category is used.

This configuration is enabled or disabled in the Financial Summary Settings page for proposals and assets, and in the **Cost and Effort** policy of the Project Settings page for projects. For more information, see the *HP Financial Management User's Guide.*

Using Business Objectives with Lifecycle Entities

Business objectives provide a way to track your business goals as discrete entities that can be prioritized and linked to lifecycle entities. The **Business Objective** field in a lifecycle entity links the lifecycle entity to that business objective. You can create, modify, and delete business objectives independent of the lifecycle entities. However, business objectives that have already been linked to lifecycle entities cannot be deleted.

As described in "Analyzing the Portfolio" on page 53, business objectives can be presented in various ways in a bubble chart.

In addition, the Portfolio By Business Obj portlet, which is one of the Portfolio By *<Category>* portlets, displays bar charts of the budget breakdown by business objective over time. See "Viewing Portfolio Data with Portfolio By <Category> Portlets" on page 63.

Finally, the **Budget By Business Objective** tab of a scenario comparison is one of several budget visualizations shown for three scenarios over time. See "Budget By Business Objective Tab" on page 80.

For more information about business objectives, see the *HP Program Management User's Guide.*

To create and update business objectives, you must have the Edit All Portfolios access grant. For more information, see the *HP Portfolio Management Configuration Guide.*

Creating Business Objectives and Linking Them to Lifecycle Entities

> **Note:** If your PPM Center instance supports multiple languages, any business objective you create is defined in the language you selected at logon (your session language). After the business objective is created, it can be modified only in its definition language. For more information, see the *Multilingual User Interface Guide.*

To create a business objective:

1. Log on to PPM Center.

2. From the menu bar, select **Open > Portfolio Management > Business Objectives > Create Business Objective.**

   The Create New Business Objective page opens.

3. Complete all required fields and any optional fields.

4. Click **Create.**

   The business objective is created.

You can link a proposal, project, or asset to an existing business objective, as follows:

- In a proposal, in the **Business Objective** field of the **Proposal Details** section, select an existing business objective.

- In a project, in the **Business Objective** field in the **PFM Project** section on the **Project Details** tab, select an existing business objective.

- In an asset, in the **Business Objective** field in the **Asset Details** section, select an existing business objective.

Updating Business Objectives

> **Note:** If your PPM Center instance supports multiple languages and the business objective is defined in a language other than your session language, you cannot modify the business objective. For more information, click **Why?** in the header at the top of the page when you open the business objective or see the *Multilingual User Interface Guide.*

To update a business objective:

1. Log on to PPM Center.

2. From the menu bar, select **Open > Portfolio Management > Business Objectives > Manage Business Objectives.**

   The list of existing business objectives is displayed.

3. Click the name of the business objective you want to revise, or click the **Delete** icon to delete the business objective.

4. Update the business objective as desired and click **Done.**

Chapter 3: Creating and Viewing Hierarchical Portfolios

Overview of Creating and Viewing Hierarchical Portfolios

> **Note:** In this document, the term "lifecycle entity" is used to mean a proposal, a project, or an asset, and "lifecycle entities" are any combination of proposals, projects, and assets.
>
> Each of these types of lifecycle entities can be created from scratch, but typically a proposal automatically becomes a project upon approval of the proposal and the project automatically becomes an asset upon completion of the project, depending on the configuration of the request types.

HP Portfolio Management allows you to create and track financial information for portfolios that are structured in a hierarchy. A hierarchical portfolio is most useful when it is built from a single point of view, such as the IT organization and the services it provides, or a business unit and its demand for those services. You can specify any set of meaningful names for the portfolios throughout the hierarchy, based, for example, on an organizational structure, a set of geographies, or functional or strategic needs.

Each hierarchical portfolio can include the following items you specify:

- **Other portfolios,** which become subportfolios when added to a portfolio. The hierarchy of all portfolios in the PPM Center instance is displayed on the View Portfolio Hierarchy page. The portfolio at the next higher level above a subportfolio in the portfolio hierarchy is known as the subportfolio's parent portfolio, and the subportfolio is sometimes also referred to as a child of the parent portfolio.

  You must be allowed to edit both the potential parent portfolio and its potential subportfolio to establish the hierarchical relationship of parent portfolio and subportfolio. Similarly, you must be allowed to edit both the parent portfolio and its subportfolio to remove the subportfolio from the parent portfolio. For more information about viewing the portfolio hierarchy, see "Viewing the Portfolio Hierarchy" on page 27.

  > **Note:** Subportfolios can be nested to any desired level (depth) of subordination.
  >
  > A portfolio (or subportfolio) can have a maximum of 40 subportfolios at the next lower level.

- **Programs,** which include collections of lifecycle entities (proposals, projects, and assets). Programs added to a portfolio are also known as the "direct" programs in the portfolio, as distinct from the programs in the portfolio's subportfolios.

  To add a program to or remove it from a portfolio, you must have the security access required to view the program (but you do not need to have an HP Program Management license). To add a program to a portfolio, in Program Settings the program must be enabled for HP Portfolio Management. For information about creating programs, see the *HP Program Management User's Guide.*

  > **Note:** A portfolio (or subportfolio) can have a maximum of 250 programs.

- **Proposals, projects, and assets,** which are also known as "direct" proposals, projects, and assets when they are added to the portfolio, as distinct from the proposals, projects, and assets in the portfolio's programs and subportfolios.

  To add a proposal, a project, or an asset to, or remove it from, a portfolio, you must be allowed to view the proposal request, view the project, or view the asset request. For information about creating proposals, projects, and assets (lifecycle entities), see "Creating Lifecycle Entities" on page 9.

> **Note:** A portfolio (or subportfolio) can have a maximum of 1000 proposals, projects, and assets combined.

A portfolio at any level in the hierarchy provides a rollup of forecast and actual costs and benefits and approved budgets on the collection of subportfolios, programs, proposals, projects, and assets that you choose for the portfolio. For more information, see "Forecast Cost, Actual Cost, and Approved Budget in the Portfolio Hierarchy" on page 29.

To prevent "double counting" of financial information among portfolios or within one portfolio, every subportfolio, program, proposal, project, or asset can be included in only one portfolio and only once in that portfolio. When you search for items to add to a portfolio, the search results automatically *exclude* particular items as follows:

- A search of subportfolios to add to a portfolio excludes all other subportfolios (that is, all portfolios that already have a parent portfolio).

- A search of programs to add to a portfolio excludes all programs that are already included in any portfolio (directly, or as part of any subportfolio).

  The search also excludes all programs that are *not* enabled for HP Portfolio Management in their Program Settings.

  > **Note:** Multiple programs can include the same lifecycle entity, and where that is the case, HP Program Management ensures that no more than one of those programs is enabled for HP Portfolio Management, that is, eligible to be included in a portfolio. If one of those programs is in fact enabled for HP Portfolio Management, *only* that program, among the programs that include the same lifecycle entity, can be added to a portfolio. For more information, see the *HP Program Management User's Guide.*

- A search of proposals, projects, or assets excludes all the ones that are already included in any portfolio (directly, or as part of any portfolio's programs or subportfolios).

> **Note:** All financial information throughout a portfolio is displayed in the system base currency.

> **Note:** Creating, viewing, and modifying portfolios requires the Portfolio Management license, as well as particular access grants and access rights as described in the *HP Program Management Configuration Guide* and "Configuring Access Rights for Hierarchical Portfolios " on page 50.
>
> If you need to perform a procedure described in this chapter, but you do not have the required access, see your administrator.

For details about creating a portfolio, see "Creating a Hierarchical Portfolio" on page 29.

Viewing the Portfolio Hierarchy

In a portfolio hierarchy, a subportfolio is a portfolio that is immediately subordinate to its parent portfolio in the hierarchy. Subportfolios can be nested to any desired level (depth). Multiple portfolios, with or without subportfolios, can exist at the "root" level—the top level in the hierarchy.

To view the portfolio hierarchy, you must have the Edit Portfolio access grant, the Edit All Portfolios access grant, or the View All Portfolios access grant.

To view the portfolio hierarchy:

1. Log on to PPM Center.

2. From the menu bar, select **Open > Portfolio Management > View Portfolio Hierarchy.**

   The View Portfolio Hierarchy page opens.

When you first view the hierarchy, none of the portfolios are expanded to show their subportfolios, if they have any. In other words, only the root portfolios are displayed. "Figure 3-1. Example expanded portfolio hierarchy" below shows an example of a fully expanded portfolio hierarchy in which the portfolios and subportfolios have been given names that describe the hierarchy. Notice that indentation is used to represent the subordination in the hierarchy.

Figure 3-1. Example expanded portfolio hierarchy

The following sections describe the hierarchy in detail.

Portfolios and Paths Shown in the Hierarchy

The set of portfolios you see in the hierarchy is based on your access grants and your designation as a portfolio manager for particular portfolios. This varies from user to user. In general, only particular users will be authorized to see particular portfolios in PPM Center.

If a portfolio name in the hierarchy is underlined, you can click that portfolio name to open the portfolio, that is to view or edit it, depending on your authorization.

When fully expanded from all roots, the portfolio hierarchy shows all the portfolios you can open. It also shows, *for each portfolio you can open:*

- The entire path of portfolios up to and including a root, whether or not you can open the portfolios in the path

- All the portfolios of immediate children (that is, the subportfolios at the next lower level), whether or not you can open them

For each portfolio you can open and for its immediate children, the hierarchy displays the portfolio's **Portfolio Managers** and financial information for the current fiscal year in the **Forecast Cost, Actual Cost,** and **Approved Budget** columns. This data is not shown for parent portfolios you cannot open.

In the example of "Figure 3-1. Example expanded portfolio hierarchy" on the previous page, assume that the user who is logged in, Ron Steele, has the View All Portfolios access grant or the Edit All Portfolios access grant. Therefore, on the View Portfolio Hierarchy page Ron sees all the portfolios in the PPM Center instance and he can open all of them, including portfolios for which he is not a portfolio manager. In this example, Ron is not a portfolio manager for any of the portfolios in the hierarchy. Ron also sees the portfolio managers and financial information for all the portfolios. (For information about access grants, see the *HP Portfolio Management Configuration Guide.* For information about adding portfolio managers to a portfolio, see "Adding Portfolio Managers to a Portfolio" on page 49.)

In the example of "Figure 3-1. Example expanded portfolio hierarchy" on the previous page, user David Jones is a portfolio manager of all the portfolios (perhaps he created them). David has the Edit Portfolio access grant and he sees the same hierarchy as Ron. (For information about default and assigned portfolio managers, see "Adding Portfolio Managers to a Portfolio" on page 49.)

In the example of "Figure 3-1. Example expanded portfolio hierarchy" on the previous page, user Barbara Tan is shown as a portfolio manager of the Grandchild 1 portfolio. She has the Edit Portfolio access grant and she sees the portfolio hierarchy shown in "Figure 3-2. Example portfolio hierarchy for portfolio manager of Grandchild 1" below.

Figure 3-2. Example portfolio hierarchy for portfolio manager of Grandchild 1

Barbara's access is as follows:

- She is a portfolio manager for Grandchild 1, so she can open it.

- She sees the portfolios in the hierarchy from Grandchild 1 up to its root, namely Child 1 and Root 1.

- Since she cannot open Child 1 or Root 1, she cannot see their portfolio managers or financial information.

- She sees the child of Grandchild 1, namely Great Grandchild, but she cannot open it because she is not one of its portfolio managers.

- She is not a portfolio manager for Child 1 or its subportfolio Grandchild 2, so she does not see Grandchild 2 in the hierarchy.

- She is not a portfolio manager for Child 2, Root 2, or any of their subportfolios, so she does not see them in the hierarchy.

Forecast Cost, Actual Cost, and Approved Budget in the Portfolio Hierarchy

Forecast Cost, Actual Cost, and **Approved Budget** data is shown for portfolios a user can open and for their immediate children, but not for parent portfolios the user cannot open.

Amounts shown for **Forecast Cost, Actual Cost,** and **Approved Budget** are totals for the current fiscal year from all of the direct items in a portfolio plus all of the items in its subportfolios, regardless of whether you can see all the subportfolios in the hierarchy. In any of these columns, if a portfolio has any direct programs, proposals, projects, or assets with specified amounts, the total amount for that portfolio is different than the sum of the amounts from its subportfolios.

For example, in "Figure 3-1. Example expanded portfolio hierarchy" on page 27 the Child 3 portfolio has a Forecast Cost of $465,000 and its parent, Root 2, has a Forecast Cost of $1,315,000. So Root 2 must have some combination of direct programs, proposals, projects, and assets that have a total Forecast Cost of the difference, namely $850,000.

Searching Portfolios by Character String in Their Names

To find all the portfolios that have a particular character string anywhere in their names and anywhere in the portfolio hierarchy, on the View Portfolio Hierarchy page specify that string in the **Search portfolios** text box and click **Search.** The search is not case-sensitive.

Only portfolios to which you have view or edit access are listed in the search results. Up to ten portfolios are listed. Adjacent to each portfolio, the entire hierarchical path from the root of the portfolio is shown (whether or not you have access to view or edit the various portfolios in the path).

In the search results (but not the adjacent hierarchical paths), when you mouse over the name of a portfolio, the name becomes a link you can click to open that portfolio.

Creating a Hierarchical Portfolio

To create a portfolio:

1. Log on to PPM Center.

2. From the menu bar, select **Create > Portfolio.**

   Alternatively, you can select **Open > Portfolio Management > Create Portfolio.**

   The Create Portfolio page opens.

   Create Portfolio

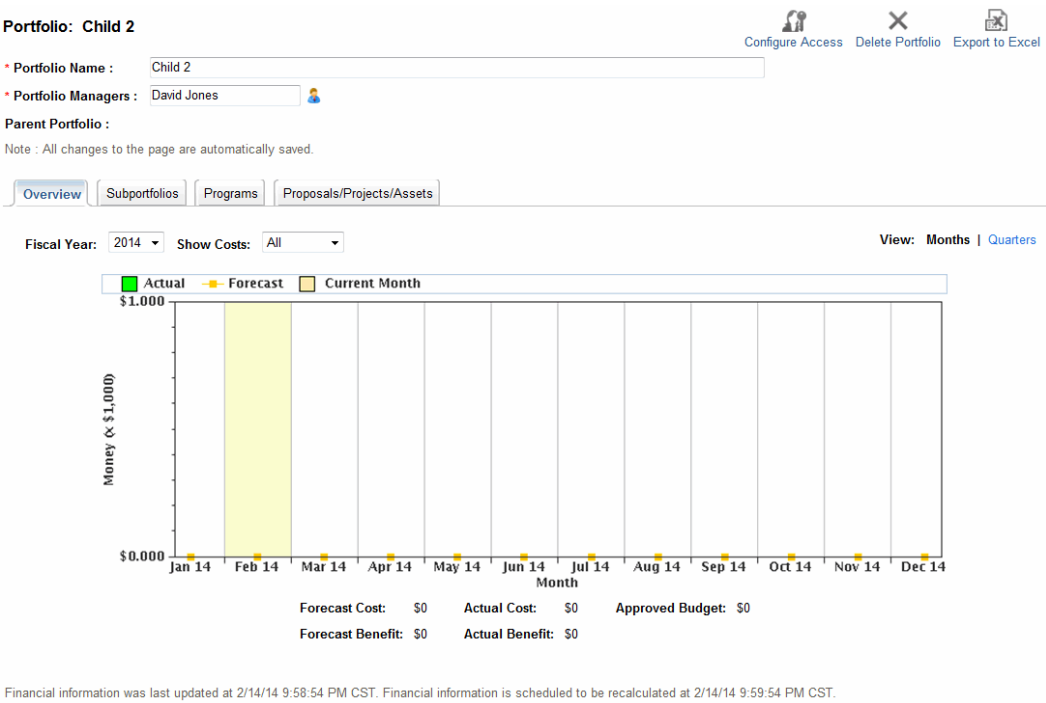 | *Portfolio Name: | |
   | *Portfolio Managers: | David Jones |

   Create Cancel

3. Complete the fields as described in the following table:

Field Name (*Required)	Description
* Portfolio Name	Name of the portfolio.
* Portfolio Managers	Users who can edit this portfolio, including adding other users as portfolio managers and configuring access rights for other users to view or edit this portfolio. The original (default) portfolio manager is the user who creates the portfolio. For information about adding portfolio managers to a portfolio, see "Adding Portfolio Managers to a Portfolio" on page 49. For information about configuring access rights for a portfolio, see "Configuring Access Rights for Hierarchical Portfolios " on page 50.

4. Click **Create.**

The portfolio is created.

The **Portfolio Name** and **Portfolio Managers** fields become part of the portfolio header, above a set of tabs. The header is displayed regardless of which tab is selected.

The tabs are as follows:

- **Overview** (displayed by default)

- **Subportfolios**

- **Programs**

- **Proposals/Projects/Assets**

For detailed information about the portfolio and its tabs, see the following sections.

Note: All changes to this page are saved automatically. The page has no buttons to save or cancel changes. To undo any changes, you must reenter the previous values.

Portfolio Header

The portfolio header includes the following:

- An **Export to Excel** link. See "Exporting the Portfolio to Microsoft Excel® " on page 49.

- A **Configure Access** button, which is available only to portfolio managers of the portfolio and allows them to provide the View Portfolio and Edit Portfolio access rights to specific users or security groups. See "Configuring Access Rights for Hierarchical Portfolios " on page 50.

- A **Delete Portfolio** button to delete empty portfolios. See "Deleting an Empty Portfolio" below.

- The **Portfolio Name** and **Portfolio Managers** fields, which you can edit if you have the required edit access.

- The read-only **Parent Portfolio** field, which is blank at the time the portfolio is created. If the new portfolio is later made a subportfolio of a parent portfolio, this field displays the name of that parent portfolio. If you are allowed to open (view or edit) the parent portfolio, its name in this field is a link to that parent.

  You cannot specify a parent portfolio directly, but you can add subportfolios to a portfolio as described in "Adding Subportfolios to a Portfolio" on page 36.

Deleting an Empty Portfolio

If a portfolio is empty (that is, it contains no subportfolios, programs, proposals, projects, or assets) and if you have the required access, you can delete the portfolio by clicking **Delete Portfolio** in the portfolio header and then clicking **Delete** on the confirmation dialog.
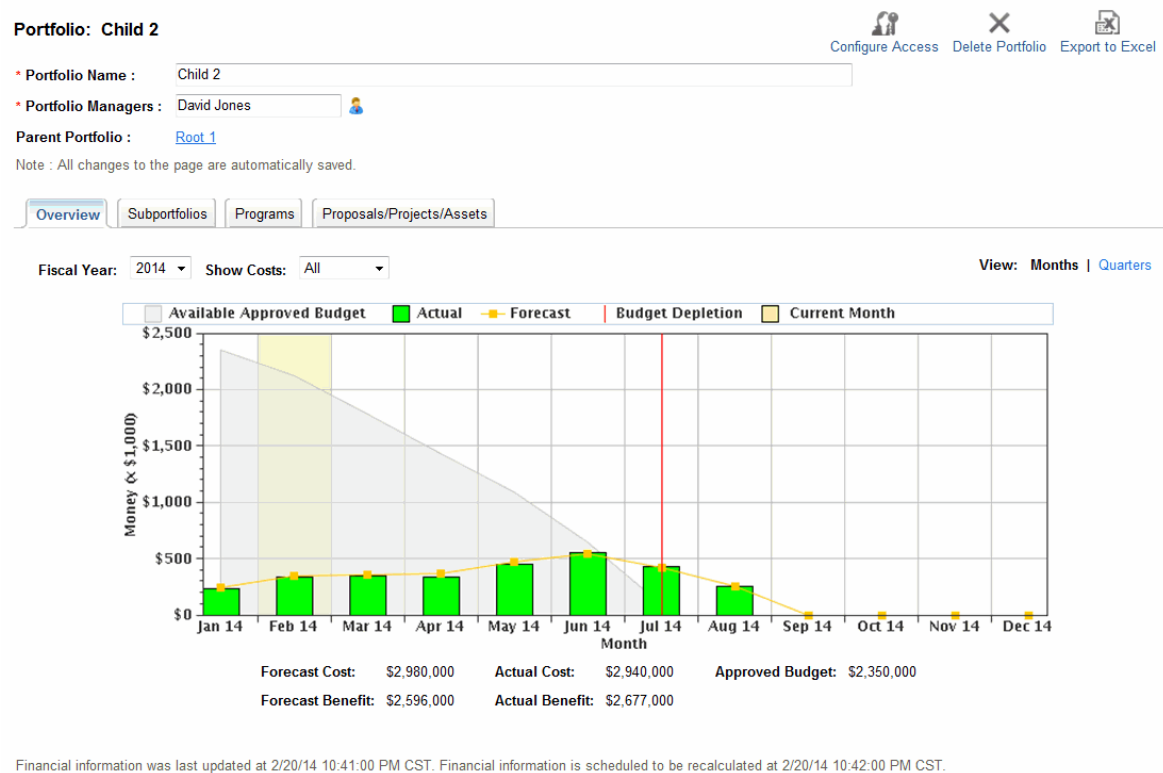
A portfolio that has any subportfolios, programs, proposals, projects, or assets cannot be deleted.

Overview Tab

As an example, "Figure 3-3. Overview tab of an example portfolio" on the next page shows the **Overview** tab of the Child 2 portfolio, seen in the portfolio hierarchy of "Figure 3-1. Example expanded portfolio hierarchy" on page 27.

Figure 3-3. Overview tab of an example portfolio

The **Overview** tab displays a graph of the forecast and actual costs and the depletion of approved budget for the summation (roll-up) of all of the items in the portfolio—its subportfolios, programs, and lifecycle entities—*for the year you select.* Like the financial summary of a particular program, proposal, project, or asset in a portfolio, the graph shows the items described in "Table 3-1. Key for the graph on the portfolio Overview tab" below for the fiscal year you select.

Table 3-1. Key for the graph on the portfolio Overview tab

Graph Item/Color	Description
Gray area	Available approved budget for the year, declining month by month by the actual costs or by forecast costs where no actual costs are specified
Green vertical bars	Actual costs
Light orange line	Forecast costs
Red vertical line	If present, the point in time at which the approved budget is completely depleted
Yellow vertical bar the full height of the graph	Current month or quarter, based on the selected **View** option

By default, the current fiscal year is shown but you can use the drop-down list in the **Fiscal Year** field to select a different fiscal year, from two fiscal years ago to five fiscal years from now. You can use the **View** field to view the data by months or quarters.

The following fields, shown below the graph, display values that are rolled up from the financial summaries of all the items in the portfolio:

- **Forecast Cost**

- **Actual Cost**

- **Approved Budget**

- **Forecast Benefit**

- **Actual Benefit**

For more information about these fields, see the *HP Financial Management User's Guide.*

> **Note:** When items are added to or removed from a portfolio or when the financial summaries of existing items in the portfolio are updated, the financial information in the portfolio is recalculated according to the schedule specified by the Financial Summary Rollup service. For more information about this service, see the *Installation and Administration Guide.* A message below the graph indicates when the financial information was last updated and when it is scheduled to be recalculated.

Subportfolios Tab

The **Subportfolios** tab of a portfolio includes a table of subportfolios, with financial information *for the year you select.*

As an example, "Figure 3-4. Subportfolios tab of an example portfolio" below shows the **Subportfolios** tab of the Child 2 portfolio from the portfolio hierarchy of "Figure 3-1. Example expanded portfolio hierarchy" on page 27. Note that the only subportfolio is Grandchild 3, consistent with the hierarchy.

Figure 3-4. Subportfolios tab of an example portfolio
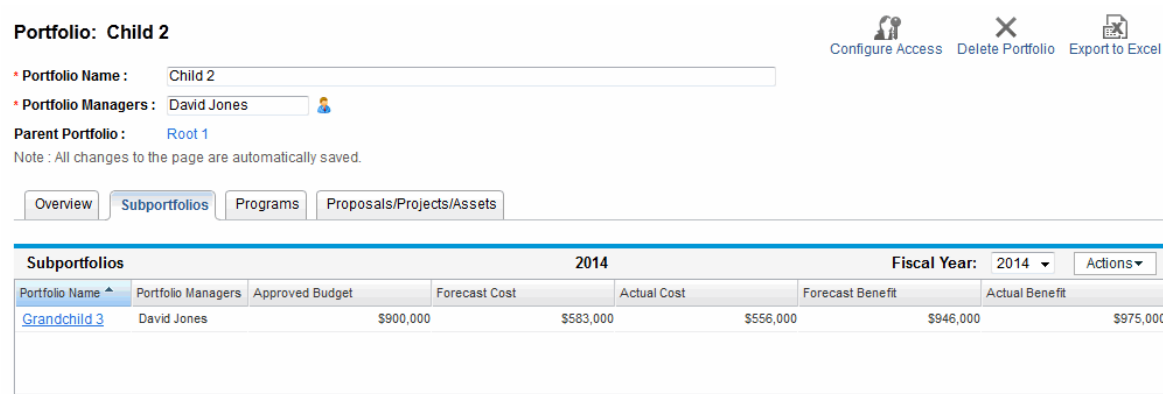
As in "Figure 3-4. Subportfolios tab of an example portfolio" above, the following fields (columns) are displayed by default:

- **Portfolio Name**

- **Portfolio Managers**

- **Forecast Cost**

- **Actual Cost**

- **Forecast Benefit**

- **Actual Benefit**

- **Approved Budget**

If the COST_CAPITALIZATION_ENABLED server.conf parameter is set to true to enable separate tracking of capital and operating costs, the following columns are also available to add to the **Subportfolios** tab of any portfolio:

- **Approved Capital Budget**

- **Approved Operating Budget**

- **Forecast Capital Cost**

- **Forecast Operating Cost**

- **Actual Capital Cost**

- **Actual Operating Cost**

The financial information presented for the subportfolios has the same meaning as for the parent portfolio, as seen on the **Overview** tab (see "Overview Tab" on page 32). For more information about the financial information fields, see the *HP Financial Management User's Guide.*

All subportfolios in the portfolio are listed. If you are allowed to view or edit a subportfolio, its name is a link you can click to open it. The subportfolios that you are not allowed to view or edit are shown without links.

Financial information is displayed for the **Fiscal Year** you select—up to five years before the current year and up to ten years after the current year, but limited to years that have periods defined in the database (with or without actual data).

For any portfolio, you can show or hide any of the columns in the table on the **Subportfolios** tab. You can change which column(s) to use for sorting, rearrange the columns, resize column widths, and "freeze" columns. Changes you make to a portfolio apply to only that portfolio, and they do not affect how the portfolio appears to other users. See "Modifying the Columns in Portfolio Tables" on page 48.

The following sections describe how to add subportfolios to and remove them from a portfolio.

Adding Subportfolios to a Portfolio

> **Note:** Subportfolios can be nested to any desired level (depth). Any portfolio or subportfolio can have a maximum of 40 subportfolios at the next lower level.

You must be allowed to edit both the intended parent portfolio and its intended subportfolio to establish the hierarchical relationship of parent portfolio and subportfolio.

To add subportfolios to a portfolio:

1. If you have not done so already, in the portfolio hierarchy, click the portfolio that will be the parent of the intended subportfolios. See "Viewing the Portfolio Hierarchy" on page 27.

   The portfolio opens.

2. Select the **Subportfolios** tab of the portfolio.

3. Click **Actions** and then click **Add Subportfolios.**

   An autocomplete dialog opens, listing all the portfolios to which you have access that are not already subportfolios of any portfolios in the system.

4. (Optional) To filter the list as desired, complete the **Subportfolio starts with** field and the **Portfolio Manager** field, and then click **Find.**

5. In the **Available** list on the left, click the portfolios that you want to become subportfolios. They move to the **Selected** list on the right. (As needed, click a portfolio in the **Selected** list on the right to move it back to the **Available** list on the left.)

6. Click **OK.**

   The selected portfolios in the list on the right are added to the **Subportfolios** tab of the portfolio you selected in step 1, and the added subportfolios are highlighted in color. (In the **Portfolio Name** column, each listed subportfolio becomes a link to that subportfolio when you mouse over it.) The portfolio hierarchy (see "Viewing the Portfolio Hierarchy" on page 27) is changed accordingly.

Removing Subportfolios from a Parent Portfolio

You must be allowed to edit both the parent portfolio and its subportfolio to remove the subportfolio from the parent portfolio.

To remove subportfolios from a parent portfolio and move them to the root level of the portfolio hierarchy:

1. If you have not done so already, click the parent portfolio of interest in the portfolio hierarchy. See "Viewing the Portfolio Hierarchy" on page 27.

   The portfolio opens.

2. Select the **Subportfolios** tab of the portfolio.

3. Select the subportfolios you want to remove from the parent portfolio, without clicking their links in the **Portfolio Name** column. You can use `Ctrl` + click or `Shift` + click to select more than one subportfolio (row). Selected subportfolios are highlighted in color.

4. Click **Actions** and then click **Remove Subportfolios.**

5. Click **Yes** on the confirmation dialog.

   The subportfolios are removed from the parent portfolio, but they are not deleted from PPM Center. They are moved to the root level of the portfolio hierarchy (see "Viewing the Portfolio Hierarchy" on page 27).

Programs Tab

The **Programs** tab includes a table of programs, which can include proposals, projects, and assets. For detailed information about programs, see the *HP Program Management User's Guide.*

As an example, "Figure 3-5. Programs tab of an example portfolio" below shows the **Programs** tab of the Child 2 portfolio from the portfolio hierarchy of "Figure 3-1. Example expanded portfolio hierarchy" on page 27.

Figure 3-5. Programs tab of an example portfolio

The following fields (columns) are always *available* to be displayed, but only the ones shown in "Figure 3-5. Programs tab of an example portfolio" above, also listed below with an asterisk (*), are displayed by default when a portfolio is created:

- *** Program Name**

- *** Managers**

- *** Status**

- *** Overall Health**

- *** Forecast Cost**

- *** Actual Cost**

- *** Forecast Benefit**

- *** Actual Benefit**

- *** Approved Budget**

- **Business Objectives**

- **POR Cost** (Plan of Record forecast cost)

- **POR Benefit** (Plan of Record forecast benefit)

- **Description**

- **NPV**

- **TNR** (Total Nominal Return)

- **Issue Health**

- **Risk Health**

- **Scope Change Health**

- **Relative Priority**

If the `COST_CAPITALIZATION_ENABLED` `server.conf` parameter is set to `true` to enable separate tracking of capital and operating costs, the following columns are also available to add to the **Programs** tab of any portfolio:

- **Approved Capital Budget**

- **Approved Operating Budget**

- **Forecast Capital Cost**

- **Forecast Operating Cost**

- **Actual Capital Cost**

- **Actual Operating Cost**

If a particular program in a portfolio does not have capitalization enabled in its financial summary settings, the program's forecast and actual costs are shown entirely as operating costs and its capital costs are shown as 0.

To the right of these columns, up to 20 custom user data fields for programs can be displayed on the **Programs** tab, one per column. The administrator can configure user data fields in the PPM Workbench, including whether or not each field is displayable in the program itself. On the **Programs** tab all the user data fields (columns) are hidden by default, but you can display the ones that are configured as displayable, as described later.

For information about program financial summaries, see the *HP Financial Management User's Guide.* If HP Financial Management is not enabled for a program, no financial information appears for that program. In addition, for programs that do have HP Financial Management enabled, table entries are 0 wherever financial information does not exist.

For more information about the fields that are not financial information, see the *HP Program Management User's Guide.*

Where a health indicator for a program is not enabled, the corresponding table entry is blank.

> **Note:** The Issue Health, Risk Health, and Scope Change Health indicators are recalculated periodically and might not be current.

All programs in the portfolio are listed. If you are allowed to view or edit a program, its name in the **Program Name** column is a link you can click to open it. The programs that you are not allowed to view or edit are shown without links.

The **Forecast Cost, Actual Cost, Forecast Benefit, Actual Benefit, Approved Budget,** and (if selected for display) the **POR Cost** and **POR Benefit** columns display data for the **Fiscal Year** you select—up to five years before the current year and up to ten years after the current year, but limited to years that have periods defined in the database (with or without actual data). You can also select **Total** in the **Fiscal Year** field to display the totals of all years. By default, the current year is displayed.

For any portfolio, you can show or hide any of the columns in the table on the **Programs** tab, including columns that were not shown when the portfolio was created. You can change which column(s) to use for sorting, rearrange the columns, resize column widths, and "freeze" columns. Changes you make to a portfolio apply to only that portfolio, and they do not affect how the portfolio appears to other users. See "Modifying the Columns in Portfolio Tables" on page 48.

The following sections describe how to add programs to and remove them from a portfolio.

Adding Programs to a Portfolio

> **Note:** A portfolio (or subportfolio) can have a maximum of 250 programs.

To add a program to a portfolio, you must have the security access required to view the program (but you do not need to have an HP Program Management license). In addition, in Program Settings the program must be enabled for HP Portfolio Management.

To add programs to a portfolio:

1. If you have not done so already, click the portfolio of interest in the portfolio hierarchy. See "Viewing the Portfolio Hierarchy" on page 27.

   The portfolio opens.

2. Select the **Programs** tab of the portfolio.

3. Click **Actions** and then click **Add Programs.**

   The Search Programs page opens.

4. Complete the fields as desired to limit the results of the search, and click **Search.**

   The programs that meet your search criteria, are not already in any portfolio, and are enabled for Portfolio Management in their Program Settings are listed in the search results in the **Select a Program to View** section added at the top of the Search Programs page.

5. Select check boxes for the programs you want to add to the portfolio (or click **Check all**), and click **Add.**

   The selected programs are added to the **Programs** tab of the portfolio, and the added programs are highlighted in color.

Removing Programs from a Portfolio

To remove a program from a portfolio, you must have the security access required to view the program (but you do not need to have an HP Program Management license).

To remove programs from a portfolio (but not delete them from PPM Center):

1. If you have not done so already, click the portfolio of interest in the portfolio hierarchy. See "Viewing the Portfolio Hierarchy" on page 27.

   The portfolio opens.

2. Select the **Programs** tab of the portfolio.

3. Select the programs you want to remove from the portfolio, without clicking their links in the **Program Name** column. You can use `Ctrl` + click or `Shift` + click to select more than one program (row). Selected programs are highlighted in color.

4. Click **Actions** and then click **Remove Programs.**

5. Click **Yes** on the confirmation dialog.

    The programs are removed from the portfolio, but they are not deleted from PPM Center.

Proposals/Projects/Assets Tab

The **Proposals/Projects/Assets** tab includes a table of proposals, projects, and assets (lifecycle entities).

As an example, "Figure 3-6. Proposals/Projects/Assets tab of an example portfolio" below shows the **Proposals/Projects/Assets** tab of the Child 2 portfolio from the portfolio hierarchy of "Figure 3-1. Example expanded portfolio hierarchy" on page 27.

Figure 3-6. Proposals/Projects/Assets tab of an example portfolio

The following fields (columns) are always *available* to be displayed, but only the ones shown in "Figure 3-6. Proposals/Projects/Assets tab of an example portfolio" above, also listed below with an asterisk (*), are displayed by default when a portfolio is created:

- *** Name.** Name of the proposal, project, or asset.

- *** Type.** Whether the lifecycle entity is a **Proposal,** a **Project,** or an **Asset.**

- **Projected Cost.** (Column is available only if data includes all years, that is, if the **Fiscal Year** field is set to **Total.**) From the financial summary of the proposal, project, or asset, the sum of the following:

  - **For past fiscal months,** actual cost wherever it has been reported (that is, where not blank or zero), otherwise forecast cost

  - **For the current fiscal month,** the *higher* of forecast costs and (if reported) actual costs

  - **For future fiscal months,** forecast costs

- **Projected Benefit.** (Column is available only if data includes all years, that is, if the **Fiscal Year**

field is set to **Total.**) From the financial summary of the proposal, project, or asset, the sum of the following:

- **For past fiscal months,** actual benefits wherever they have been reported (that is, where not blank or zero), otherwise forecast benefits

- **For the current fiscal month,** the *higher* of forecast benefits and (if reported) actual benefits

- **For future fiscal months,** forecast benefits

- **Projected Person Months.** (Column is available only if data includes all years, that is, if the **Fiscal Year** field is set to **Total.**) From the staffing profile attached to the proposal, project, or asset, the sum of the following:

  - **For past fiscal months,** actual person months wherever they has been reported (that is, where not blank or zero), otherwise forecast person months

  - **For the current fiscal month,** the *higher* of forecast person months and (if reported) actual person months

  - **For future fiscal months,** forecast person months

- **Forecast Person Months.** (Column is available only if data includes all years, that is, if the **Fiscal Year** field is set to **Total.**) From the staffing profile attached to the proposal, project, or asset, the total forecast person months over all years.

- **Actual Person Months.** (Column is available only if data includes all years, that is, if the **Fiscal Year** field is set to **Total.**) From the staffing profile attached to the proposal, project, or asset, the total actual person months thus far.

- **Forecast Cost.** From the financial summary of the proposal, project, or asset, the forecast cost for the **Fiscal Year** you select, or the total of all years if you select **Total.**

- **Actual Cost.** From the financial summary of the proposal, project, or asset, the actual cost for the **Fiscal Year** you select, or the total of all years if you select **Total.**

- **Forecast Benefit.** From the financial summary of the proposal, project, or asset, the forecast cost for the **Fiscal Year** you select, or the total of all years if you select **Total.**

- **Actual Benefit.** From the financial summary of the proposal, project, or asset, the actual benefit for the **Fiscal Year** you select, or the total of all years if you select **Total.**

- **Approved Budget.** From the financial summary of the proposal, project, or asset, the approved budget for the **Fiscal Year** you select, or the total of all years if you select **Total.**

- **POR Cost.** From the plan of record (POR) financial summary snapshot of the proposal, project, or asset, the cost for the **Fiscal Year** you select, or the total of all years if you select **Total.**

- **POR Benefit.** From the plan of record (POR) financial summary snapshot of the proposal, project,

or asset, the benefit for the **Fiscal Year** you select, or the total of all years if you select **Total.**

- *** Overall Health.** Applies to projects only. Blank for proposals and assets.

- **Cost Health.** Applies to projects only. Blank for proposals and assets.

- **Schedule Health.** Applies to projects only. Blank for proposals and assets.

- **Issue Health.** Applies to projects only. Blank for proposals and assets.

In addition to the always available and selectable 18 columns described above, you can add any subset of the columns that your administrator has made available to you on the Configure Portfolio Management page. For more information, see the *HP Portfolio Management Configuration Guide.* The maximun number of additional colomns is 20, so users can display up to 38 columns on the **Proposals/Projects/Assets** tab.

If the COST_CAPITALIZATION_ENABLED server.conf parameter is set to true to enable separate tracking of capital and operating costs, the following columns are also available to add to the **Proposals/Projects/Assets** tab of any portfolio:

- **Approved Capital Budget**

- **Approved Operating Budget**

- **Forecast Capital Cost**

- **Forecast Operating Cost**

- **Actual Capital Cost**

- **Actual Operating Cost**

If a particular proposal, project, or asset in a portfolio does not have capitalization enabled in its financial summary settings, its forecast and actual costs are shown entirely as operating costs and its capital costs are shown as 0.

If a lifecycle entity is created as a proposal, it can progress from proposal to project to asset. If a lifecycle entity is created as a project, it can progress from project to asset. You can also create an asset directly. In any case, the lifecycle entity retains the same financial summary over its life. All cost, benefit, and approved budget data presented on the **Proposals/Projects/Assets** tab is retrieved from that financial summary. Among a proposal, the project that the proposal becomes, or the asset that the project becomes, the data is never double-counted in a portfolio. For information about financial summaries and their Plan of Record snapshots, see the *HP Financial Management User's Guide.*

> **Note:** Portfolios track financial information for collections of related items that are usually being actively managed, so HP recommends including proposals in portfolios only if those proposals are close to approval.

When a proposal becomes a project, the proposal's staffing profile is *copied* to the project as a starting point. However, when a project becomes an asset, the project's staffing profile is not copied to the

asset, and you must create a new staffing profile for the asset if you need one. The resource (person-month) data presented on the **Proposals/Projects/Assets** tab is retrieved from the particular independent staffing profile attached to the proposal, project, or asset. For information about staffing profiles, see the *HP Resource Management User's Guide.*

All lifecycle entities in the portfolio are listed on the **Proposals/Projects/Assets** tab. If you are allowed to view or edit a lifecycle entity, its name is a link you can click to open it. The lifecycle entities that you are not allowed to view or edit are shown without links.

Data is displayed for the **Fiscal Year** you select—up to five years before the current year and up to ten years after the current year, but limited to years that have periods defined in the database (with or without actual data). By default, the current year is displayed. You can also select **Total** in the **Fiscal Year** field to display the totals of all years.

For any portfolio, you can show or hide any of the columns in the table on the **Proposals/ Projects/Assets** tab, including columns that were not shown when the portfolio was created. You can change which column(s) to use for sorting, rearrange the columns, resize column widths, and "freeze" columns. Changes you make to a portfolio apply to only that portfolio, and they do not affect how the portfolio appears to other users. See "Modifying the Columns in Portfolio Tables" on page 48.

> **Note:** If the administrator has enabled display of the **Net Present Value** and/or **Nominal Return** columns, you can display those columns only if the **Fiscal Year** field (described later in this section) is set to **Total.**

The following sections describe how to add proposals, projects, and assets (lifecycle entities) to and remove them from a portfolio.

Adding Proposals, Projects, and Assets to a Portfolio

> **Note:** A portfolio (or subportfolio) can have a maximum of 1000 proposals, projects, and assets combined.

> **Note:** Only *active* lifecycle entities can be in a portfolio. For example, if a proposal has become a project, only the project can be added to the portfolio, and if a proposal that is already in a portfolio becomes a project, it becomes a project in the portfolio too.

You must be allowed to view a proposal request, an asset request, or a project to add it to a portfolio.

To add portfolio lifecycle entities to a portfolio:

1. If you have not done so already, click the portfolio of interest in the portfolio hierarchy. See "Viewing the Portfolio Hierarchy" on page 27.

   The portfolio opens.

2. Select the **Proposals/Projects/Assets** tab of the portfolio.

3. Click **Actions** and then click **Add Proposals/Projects/Assets.**

   The Add New Proposals/Projects/Assets window opens.

4. To add specific proposals, projects, and/or assets by name to the portfolio:

   a. In the **Add Specific Items** section of the Add New Proposals/Projects/Assets window, use the autocompletes for the **Include Proposals, Include Projects,** and **Include Assets** fields to select the specific lifecycle entities to be added. Only lifecycle entities that are not already in any portfolio are listed in the autocompletes.

   b. Click **Add.**

   The Add New Proposals/Projects/Assets window closes. The selected entities are added to the **Proposals/Projects/Assets** tab in the same sort order as previous entities, and the added entities are highlighted in color.

   If you need to search for and add entities that meet specific filter criteria, continue to step 5.

5. To search for and add entities that meet specific filter criteria:

   a. Complete the fields in the **Search For Proposals/Projects/Assets To Add** section as needed.

   If you select one or more request types using the autocomplete for the **Request Type** field, the **Show Advanced Filters** button becomes enabled. See step b for information about using advanced filters.

   If you select one request type using the autocomplete for the **Request Type** field, the autocomplete for the **Status** field becomes enabled.

b. The set of advanced filters varies from one request type to another. If you select multiple request types and click **Show Advanced Filters,** only the fields that are *common* to all the request types are displayed as advanced filters in the **Search For Proposals/Projects/Assets To Add** section of the Add New Proposals/Projects/Assets window. Using these advanced filters allows you to add to the portfolio some or all of the requests that meet your specific filter criteria.

To use advanced filters:

    i. Specify at least one request type in the **Request Type** field.

    ii. Click **Show Advanced Filters.**

    iii. Specify the advanced filters of interest.

c. In the **Sort By** field at the bottom of the Add New Proposals/Projects/Assets window, specify the sort order to use for the lifecycle entities when they are listed, and whether they are to appear in ascending or descending order. Also specify the **Maximum Results Per Page** field.

d. In the **Search For Proposals/Projects/Assets To Add** section of the Add New Proposals/Projects/Assets window, click **Search.**

The lifecycle entities that meet your search criteria and are not already in any portfolio are listed in the search results in the **Select Proposals/Projects/Assets To Add** section added at the top of the Add New Proposals/Projects/Assets window.

e. If you used advanced filters and you want to hide them again, click **Show Simple Filters.**

f. In the list of entities in the **Select Proposals/Projects/Assets To Add** section, select the check boxes to the left of the entities to be added to the portfolio (or click **Check All**), and then click **Add.**

The Add New Proposals/Projects/Assets window closes. The selected entities are added to the **Proposals/Projects/Assets** tab in the same sort order as previous entities, and the added entities are highlighted in color.

Removing Proposals, Projects, and Assets from a Portfolio

You must be allowed to view a proposal request, an asset request, or a project to remove it from a portfolio.

To remove proposals, projects, and assets from a portfolio (but not delete them from PPM Center):

1. If you have not done so already, click the portfolio of interest in the portfolio hierarchy. See "Viewing the Portfolio Hierarchy" on page 27.

The portfolio opens.

2. Select the **Proposals/Projects/Assets** tab of the portfolio.

3. Select the entities you want to remove from the portfolio, without clicking their links in the **Name** column. You can use `Ctrl` + click or `Shift` + click to select more than one item (row). Selected entities are highlighted in color.

4. Click **Actions** and then click **Remove Proposals/Projects/Assets.**

5. Click **Yes** on the confirmation dialog.

   The entities are removed from the portfolio, but they are not deleted from PPM Center.

Searching for Proposals, Projects, and Assets in a Portfolio

You can search proposal, project, and/or asset requests to find which ones are included in a known portfolio you specify or in one of a set of portfolios you specify, as follows:

1. From the menu bar, select **Search > Requests.**

2. Use the autocomplete for the **Request Type** field to select any combination of the **PFM - Proposal, PFM - Project,** and **PFM - Asset** request types, as well as any custom request types that have one of the PFM field groups enabled.

3. Complete other fields on the **Search Requests** page as desired to filter the requests that the search will find, but do not click **Search** yet.

4. Next to the **Request Type** field, click **Advanced Search.**

5. In the **Business Case Details** section, use the autocomplete for the **Portfolio** field to select one or more portfolios.

6. Complete other fields as desired to filter the requests that the search will find.

7. For the search results, to display the names of the portfolios that include the requests, make sure that **Portfolio** is among the **Selected Columns** in the **Choose Columns** section of the Search Requests page.

8. Click **Search.**

   The requests that meet the search criteria, including being included in one of the portfolios you selected, are listed.

Modifying the Columns in Portfolio Tables

You can change the tables on the tabs in each portfolio to which you have access in the following ways, and the changes are retained after you log out and log back in to PPM Center:

- To rearrange columns, click and drag a column heading to the desired position.

- To resize a column, click and drag the dividing line between its column heading and the adjacent column heading.

> **Note:** For the following options, instead of clicking or right-clicking a column heading as described, you can click the drop-down arrow that appears at the right of any column heading when you move the mouse there.

- To hide a table column, right-click any column heading, select **Columns,** and then click (deselect) the name of the column to be hidden.

  To display a column that is not displayed, right-click any column heading, select **Columns,** and then click (select) the name of the column to be displayed.

- To base the sort order of the rows on the values in a column, click that column heading, or right-click in the column heading and click **Sort Ascending** or **Sort Descending.**

  After performing an initial sort, you can establish a multilevel sort, in which you retain the original sort order and add subordinate sorting by a second column, a third column, and so on. Use SHIFT + click in column headings to establish columns as subordinate sort columns. Small numbers appear in the column headings to indicate the sort priorities for multilevel sorts. Use SHIFT + click in the heading of any of the sorted columns to change between ascending and descending order.

  To remove sorting, right-click a column heading used for sorting and click **Clear Sort.** In a multilevel sort, sorting is removed for that column and retained as otherwise selected.

- Right-click a column heading and click **Freeze Column "<*column name*>"** to:

  - Move that column as far to the left as possible but to the right of any other previously frozen columns

  - Prevent that column from being moved by clicking and dragging its heading

  - Freeze the width of that column when horizontal scrolling is used for other columns

  Once a column is frozen, you can right-click the column heading and click **Unfreeze Column "<*column name*>",** which moves the column to the immediate right of any other frozen columns.

Exporting the Portfolio to Microsoft Excel®

> **Note:** If your browser is Microsoft Internet Explorer 7, you must configure its Internet Options as described in the *Getting Started* document to export a portfolio to Microsoft Excel.

You can create a Microsoft Excel spreadsheet of the portfolio by clicking the **Export to Excel** link at the top of the portfolio header. The spreadsheet includes the portfolio header information, and section and column headings and lists of the items corresponding to the **Subportfolios, Programs,** and **Proposals/Projects/Assets** tabs. The name of each item in the spreadsheet is a link to the item. The years shown on the **Subportfolios, Direct Programs,** and **Direct Proposals/Projects/Assets** rows in the spreadsheet are the years that were selected for display on those tabs of the portfolio.

For each tab, only the columns you have selected for display are exported, and they are exported in the same order as they are displayed, reflecting all the changes you have made. If data exists but is not displayed in particular places in the portfolio, based on field level security for example, that data is not exported to the spreadsheet. (Health indicators are exported as text **Green, Yellow,** or **Red** so that you can sort by these indicators in Microsoft Excel.)

Adding Portfolio Managers to a Portfolio

For information about the capabilities that portfolio managers have, see step 3 in Creating a Hierarchical Portfolio.

The person who creates a portfolio is its original portfolio manager.

Only users who have the Edit All Portfolios access grant or who are current portfolio managers of a particular portfolio can add new portfolio managers to that portfolio.

Only users who have the Edit Portfolio access grant or the Edit All Portfolios access grant can be added as new portfolio managers.

To add portfolio managers to a portfolio:

1. In the portfolio header, click the autocomplete for the **Portfolio Managers** field.

   Users who have the Edit Portfolio access grant or the Edit All Portfolios access grant and who are not already portfolio managers of the portfolio are listed.

2. As desired, use the **Portfolio Managers, First Name,** and **Last Name** fields and click **Find** to filter the list of available users.

3. Use the arrow buttons to select the users you want to add as portfolio managers.

4. Click **OK** in the autocomplete.

   The users you selected are added as portfolio managers for this portfolio.

Configuring Access Rights for Hierarchical Portfolios

Access to hierarchical portfolios is controlled at a system level through access *grants* set by administrators in security group definitions. Users are linked to access grants through the security groups to which they belong. For more information about access grants and security groups for hierarchical portfolios, see the *Security Model Guide and Reference* and the *HP Portfolio Management Configuration Guide.*

In addition, users who have the Edit All Portfolios access grant or who are portfolio managers of a particular portfolio can use the Configure Access page of the portfolio to specify View Portfolio and Edit Portfolio access *rights* for users or security groups who have the Edit Portfolio access grant. Then those users and security groups can view the portfolio or view and edit it.

> **Note:** Users who have the Edit All Portfolios access grant do not need and cannot be given access rights because they can already view and edit all portfolios.

For detailed information about the combinations of access grants and access rights that allow users to view or edit a portfolio, see the *HP Portfolio Management Configuration Guide.*

To configure access rights for a portfolio:

1. Open the portfolio of interest.

   If you have permission to modify access to the portfolio, the **Configure Access** button at the top of the portfolio is available.

2. Click **Configure Access.**

   The Configure Access page for the selected portfolio opens.

Configure Access to Portfolio: Child 2		
View Access		
Participant	View Portfolio	Edit Portfolio
Portfolio Managers	☑	☑
Add User		
✖ PPM All Access Grants	☑	☐
Add Security Group		
	Save Done Cancel	

   Notice that all portfolio managers for a portfolio automatically have the View Portfolio and Edit Portfolio access rights, and that those users and their access rights cannot be removed from the Configure Access page.

3. To add a user or security group, click **Add User** or **Add Security Group** and select one user or

one security group to add to the participants on the Configure Access page for this portfolio.

Users who have the Edit Portfolio access grant are listed.

The user or security group you add is automatically given the View Portfolio access right and it cannot be removed. In other words, anyone who is listed on the Configure Access page has view access to this portfolio.

4. Select the check box in the **Edit Portfolio** column if you want to allow the user or security group to edit this portfolio.

5. If you want to delete any users or security groups from the Configure Access page, click the Delete icons to the left of their names.

Chapter 4: Analyzing the Portfolio

Overview of Analyzing the Portfolio

This chapter explains how to use HP Portfolio Management visualizations to analyze various aspects of the entire set and particular subsets of proposals, projects, and assets.

> **Note:** In the context of this chapter and the functionality it describes, the portfolio is the entire set of proposals, projects, and assets on the PPM Center instance, or a subset of them you select. Unlike the hierarchical portfolios described in "Creating and Viewing Hierarchical Portfolios" on page 24, the portfolios described in this chapter cannot directly include programs and are not part of a hierarchy that can include parent portfolios or subportfolios. However, as described later in this chapter, the portfolios can include the *content* of particular hierarchical portfolios you specify.

> **Note:** In this document, the term "lifecycle entity" is used to mean a proposal, a project, or an asset, and "lifecycle entities" are any combination of proposals, projects, and assets.
>
> Each of these types of lifecycle entities can be created from scratch, but typically a proposal automatically becomes a project upon approval of the proposal and the project automatically becomes an asset upon completion of the project, depending on the configuration of the request types.

You can view a bubble chart of the portfolio or a bubble chart of a filtered subset of the portfolio, where each bubble represents one lifecycle entity. You control the parameters that are represented by the horizontal axis (**Value** by default), the vertical axis (**Risk** by default), the colors of the bubbles (**Business Objective** by default), and the sizes of the bubbles (**Projected Cost** by default).

A lifecycle entity can be assigned rankings of various qualitative criteria (which your administrator can modify) so that HP Portfolio Management can calculate an overall score for the lifecycle entity based on its benefits (**Value**), its **Risk,** and a **Score Adjustment** you can specify.

In addition, HP Portfolio Management portlets allow you to slice cost and resource data by business objective, by project class, such as **Growth** or **Efficiency,** or by asset class, such as **Infrastructure** or **Transactional.**

Viewing Particular Lifecycle Entities

To view a desired set of lifecycle entities, and then a particular lifecycle entity:

1. Log on to PPM Center.

2. From the menu bar, select **Open > Demand Management > Search Requests.**

   The Search Requests page appears.

3. Click the autocomplete button to the right of the **Request Type** field.

4. From the list of request types that appears, click the ones in the **Available** column that you want to view, and then click **OK** to add them to the text box for the **Request Type** field.

   To select the request types that HP provides by default:

   ■ For proposals, select the **PFM - Proposal** request type.

   ■ For projects, select the **PFM - Project** request type, the **Project Details** request type, or both, as appropriate for your projects.

   > **Note:** When a project is created using the **Open > Project Management** menu, the **Open > Portfolio Management** menu, or the **Create > Project** menu in the menu bar, a project type must be selected. Each project type specifies whether the Project Details request type or the PFM - Project request type is to be associated with all projects of that project type.

   ■ For assets, select the **PFM - Asset** request type.

5. Click **OK.**

6. (Optional) In the Search Requests page, complete any other filters as desired to limit the set of lifecycle entities to display.

7. Click **Search.**

8. To open a particular request associated with a proposal or asset or to open a particular project, click the request number of interest in the **Req #** column of the **Request Search Results** section.

Analyzing the Portfolio

The Analyze Current Portfolio page displays a bubble chart as a simple and powerful tool for viewing the portfolio in different ways. Depending on how you specify its filter fields, selected aspects of the

portfolio can be displayed or hidden. See the example in "Figure 4-1. Analyze Current Portfolio page" on the next page.

To view and analyze the portfolio:

1. Log on to PPM Center.

2. From the menu bar, select **Open > Portfolio Management > Analyze Current Portfolio.**

   The Analyze Current Portfolio page opens. You specify filter fields as described in "Table 4-1. Analyze Current Portfolio page filter fields" on page 56 to configure the content and appearance of the bubble chart as needed.

3. Specify the filter fields. By default, the bubble chart will display no proposals and all currently active projects and assets in the portfolio, with no restrictions, so that you can view the collection of projects and assets and assess their relative **Value** and **Risk.**

   The last four fields provide versatile sets of options to control the fundamental purpose and appearance of the bubble chart. The other fields control which lifecycle entities are included in the bubble chart, one for each bubble. For example, by filtering on a **Business Unit,** you can view the portfolio of a particular business unit using all your other criteria.

4. Click **Apply** to apply the filters you selected.

   If you select more lifecycle entities than are allowed, a message appears to add more filter criteria.

   The bubble chart is displayed, and the choices you made for some of the filter criteria, such as **Size of bubble indicates** and **Color of bubble indicates,** are listed above the chart.

Figure 4-1. Analyze Current Portfolio page
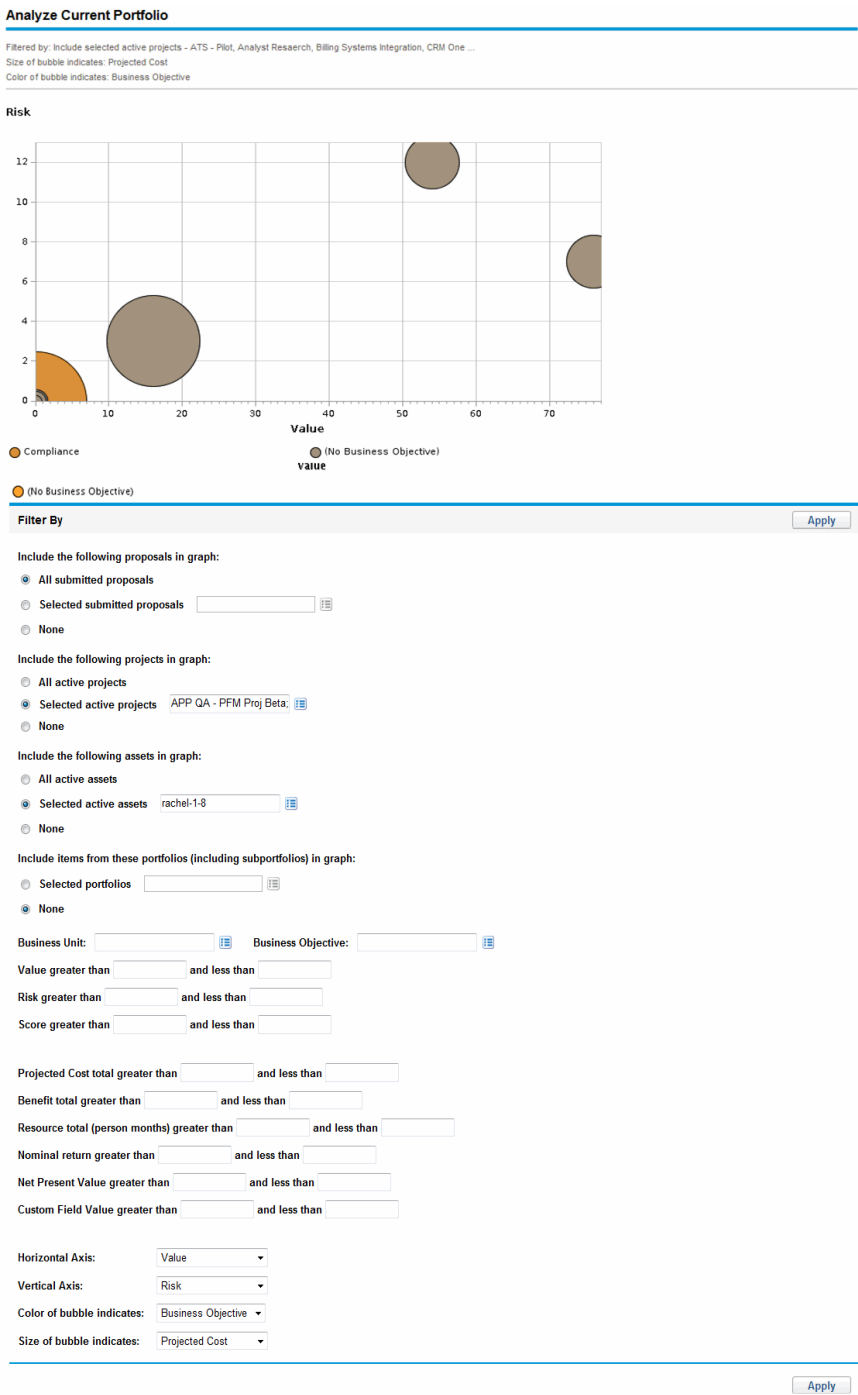
Table 4-1. Analyze Current Portfolio page filter fields

Field Name	Description
Include the following proposals in graph	Selects proposals to display in the bubble chart—all proposals, particular proposals you select, or no proposals.
Include the following projects in graph	Selects projects to display in the bubble chart—all projects, particular projects you select, or no projects.
Include the following assets in graph	Selects projects to display in the bubble chart—all assets, particular assets you select, or no assets.
Include items from these portfolios (including subportfolios) in graph	Selects hierarchical portfolios to display all their lifecycle entities in the bubble chart, or selects no portfolios. For information about hierarchical portfolios, see "Creating and Viewing Hierarchical Portfolios" on page 24. To assist you in selecting particular hierarchical portfolios, the auto-complete displays their names, the names of their parent portfolios where applicable, and their portfolio managers. The bubble chart displays a bubble for each of the individual lifecycle entities in each hierarchical portfolio you select, including the lifecycle entities in all of the hierarchical portfolios' subportfolios and programs. If you select a particular lifecycle entity (by using one of the three preceding fields) and you select a hierarchical portfolio that includes it, the lifecycle entity is displayed only once in the bubble chart.
Business Unit	Filters the lifecycle entities by one or more particular business units.
Business Objective	Filters the lifecycle entities by one or more particular business objectives.
Project Class	Filters the lifecycle entities by one or more particular project classes.
Asset Class	Filters the lifecycle entities by one or more particular asset classes.
Value greater than $<X>$ and less than $<Y>$	Filters the lifecycle entities by a range of Value Ratings you specify, as described in "Determining Value and Risk Ratings" on page 60.
Risk greater than $<X>$ and less than $<Y>$	Filters the lifecycle entities by a range of Risk Ratings you specify, as described in "Determining Value and Risk Ratings" on page 60.

Table 4-1. Analyze Current Portfolio page filter fields, continued

Field Name	Description
Score greater than *<X>* and less than *<Y>*	Filters the lifecycle entities by a range of Total Scores you specify, as described in "Determining Value and Risk Ratings" on page 60.
Projected Cost total greater than *<X>* and less than *<Y>*	Filters the lifecycle entities by a range of total projected cost you specify, calculated as the sum of the following: ■ *For each previous month,* actual costs where reported (that is, where not blank or zero), otherwise forecast costs ■ *For the current month,* the higher of forecast cost and, if reported, actual cost ■ *For future months,* the forecast costs
Benefit total greater than *<X>* and less than *<Y>*	Filters the lifecycle entities by a range of financial benefits you specify, calculated as the sum of the following: ■ *For each previous month,* actual benefits where reported (that is, where not blank or zero), otherwise forecast benefits ■ *For the current month,* the higher of forecast benefit and, if reported, actual benefit ■ *For future months,* the forecast benefits
Resource total (person months) greater than *<X>* and less than *<Y>*	Filters the lifecycle entities by a range of their staffing profiles' resource totals you specify (in person months).
Nominal return greater than *<X>* and less than *<Y>*	If this field is displayed, filters the lifecycle entities by a range of nominal returns you specify. Nominal Return is calculated as described in "Total Nominal Return" on page 120.
Net Present Value greater than *<X>* and less than *<Y>*	If this field is displayed, filters the lifecycle entities by a range of NPV you specify. NPV is calculated as described in "Net Present Value (NPV)" on page 120.
Custom Field Value greater than *<X>* and less than *<Y>*	If this field is displayed, filters the lifecycle entities by a range of Custom Field Value you specify. Custom Field Value is configured for your specific PPM Center installation. For more information, see the *HP Portfolio Management Configuration Guide.*

Table 4-1. Analyze Current Portfolio page filter fields, continued

Field Name	Description
Horizontal Axis	Specifies the parameter used for the bubble chart's horizontal axis. Options are as follows: ■ **Value.** Value Rating of the lifecycle entity, as described in "Determining Value and Risk Ratings" on page 60. This is the default option. ■ **Risk.** Risk Rating of the lifecycle entity, as described in "Determining Value and Risk Ratings" on page 60. ■ **Score.** Total Score of the lifecycle entity, as described in "Determining Value and Risk Ratings" on page 60. ■ **Projected Cost.** Projected cost of the lifecycle entity. ■ **Benefit.** Financial benefit of the lifecycle entity. ■ **Resource.** Staffing profile of the lifecycle entity. ■ **Nominal Return.** If enabled, nominal return for the lifecycle entity, calculated as described in "Total Nominal Return" on page 120. ■ **Net Present Value.** If enabled, net present value (NPV) for the lifecycle entity, calculated as described in "Net Present Value (NPV)" on page 120. ■ **Custom Field Value.** If enabled, Custom Field Value of the lifecycle entity, as described in the *HP Portfolio Management Configuration Guide.*

Table 4-1. Analyze Current Portfolio page filter fields, continued

Field Name	Description
Vertical Axis	Specifies the parameter used for the bubble chart's vertical axis. Options are as follows: ■ **Risk.** Risk Rating of the lifecycle entity, as described in "Determining Value and Risk Ratings" on the next page. This is the default option. ■ **Value.** Value Rating of the lifecycle entity, as described in "Determining Value and Risk Ratings" on the next page. ■ **Score.** Total Score of the lifecycle entity, as described in "Determining Value and Risk Ratings" on the next page. ■ **Projected Cost.** Projected cost of the lifecycle entity. ■ **Benefit.** Financial benefit of the lifecycle entity. ■ **Resource.** Staffing profile of the lifecycle entity. ■ **Nominal Return.** If enabled, nominal return for the lifecycle entity, calculated as described in "Total Nominal Return" on page 120. ■ **Net Present Value.** If enabled, net present value (NPV) for the lifecycle entity, calculated as described in "Net Present Value (NPV)" on page 120. ■ **Custom Field Value.** If enabled, Custom Field Value of the lifecycle entity, as described in the *HP Portfolio Management Configuration Guide.*
Color of bubble indicates	Specifies what the various colors of the bubbles (lifecycle entities) represent, as indicated in the legend below the bubble chart. Options are as follows: ■ **Business Objective.** This is the default option. ■ **Asset Class.** ■ **Business Unit.** ■ **Health.** ■ **Project Class.** ■ **Type.** Color indicates **Proposal, Project,** or **Asset.**

Table 4-1. Analyze Current Portfolio page filter fields, continued

Field Name	Description
Size of bubble indicates	Specifies what the various sizes of the bubbles (lifecycle entities) represent. Options are as follows: ■ **Projected Cost.** Projected cost of the lifecycle entity. This is the default option. ■ **Benefit.** Financial benefit of the lifecycle entity. ■ **Resource.** Staffing profile of the lifecycle entity. ■ **Value.** Value Rating of the lifecycle entity, as described in "Determining Value and Risk Ratings" below. ■ **Risk.** Risk Rating of the lifecycle entity, as described in "Determining Value and Risk Ratings" below. ■ **Score.** Total Score of the lifecycle entity, as described in "Determining Value and Risk Ratings" below. ■ **Nominal Return.** If enabled, nominal return for the lifecycle entity, calculated as described in "Total Nominal Return" on page 120. ■ **Net Present Value.** If enabled, net present value (NPV) for the lifecycle entity, calculated as described in "Net Present Value (NPV)" on page 120. ■ **Custom Field Value.** If enabled, Custom Field Value of the lifecycle entity, as described in the *HP Portfolio Management Configuration Guide.*

Determining Value and Risk Ratings

Lifecycle entities can be evaluated using qualitative criteria that cannot be calculated purely numerically. These rankings are tracked using a set of fields in the **Value Ratings** and **Risk Ratings** sections that you optionally specify when you create each lifecycle entity, as shown in the example for a proposal in "Figure 4-2. Qualitative value and risk ratings and Score Adjustment" on the next page. These fields appear in the **Details** section for the lifecycle entity (which, for projects, is on the **Project Details** tab).

Figure 4-2. Qualitative value and risk ratings and Score Adjustment

When you complete these qualitative fields, PPM Center dynamically calculates and displays corresponding **Value Rating, Risk Rating,** and **Total Score** fields for the lifecycle entity by performing the following calculations in the order listed:

- Applying predefined weighting factors for each field.

- Adding the weighted entries in the **Value Ratings** section (the result is displayed in the **Value Rating** field in the **Business Case Details** section).

- Adding the weighted entries in the **Risk Ratings** section (the result is displayed in the **Risk Rating** field in the **Business Case Details** section).

- Subtracting the **Risk Rating** from the **Value Rating** to obtain a score.

- Adjusting the resulting score by the amount specified in the **Score Adjustment** field in the **Business Case Details** section. For example, a confident project sponsor might enter 10 in the **Score Adjustment** field, raising the score by 10 points, whereas someone who thinks the project is somewhat riskier than the calculations indicate might enter –5, lowering the score by 5 points.

- Displaying the result in the **Total Score** field in the **Business Case Details** section.

In summary, **Total Score = Value Rating** – **Risk Rating** + **Score Adjustment.**

For information about changing or adding scoring criteria and their values, see the *HP Portfolio Management Configuration Guide.*

Using HP Portfolio Management Portlets

Note: In the context of this section and the portlets it describes, the portfolio is the entire set of proposals, projects, and assets on the PPM Center instance (from which you can select a subset). Unlike the hierarchical portfolios described in "Creating and Viewing Hierarchical Portfolios" on page 24, the portfolio described in this chapter cannot include programs and is not part of a hierarchy that can include subportfolios.

As described in the following sections, several portlets are provided that allow you to view key aspects of the portfolio in real time. You can personalize these portlets to show the information you find most useful.

For information about other HP Portfolio Management portlets, see "Using Scenario Comparison Portlets" on page 117 and the *HP-Supplied Entities Guide.*

Viewing the Portfolio with the Analyze Current Portfolio Portlet

The Analyze Current Portfolio portlet provides the same bubble chart as the Analyze Current Portfolio page, but unlike the page, the filter fields are saved for the portlet. See "Figure 4-3. Analyze Current Portfolio portlet" on the next page.

Figure 4-3. Analyze Current Portfolio portlet
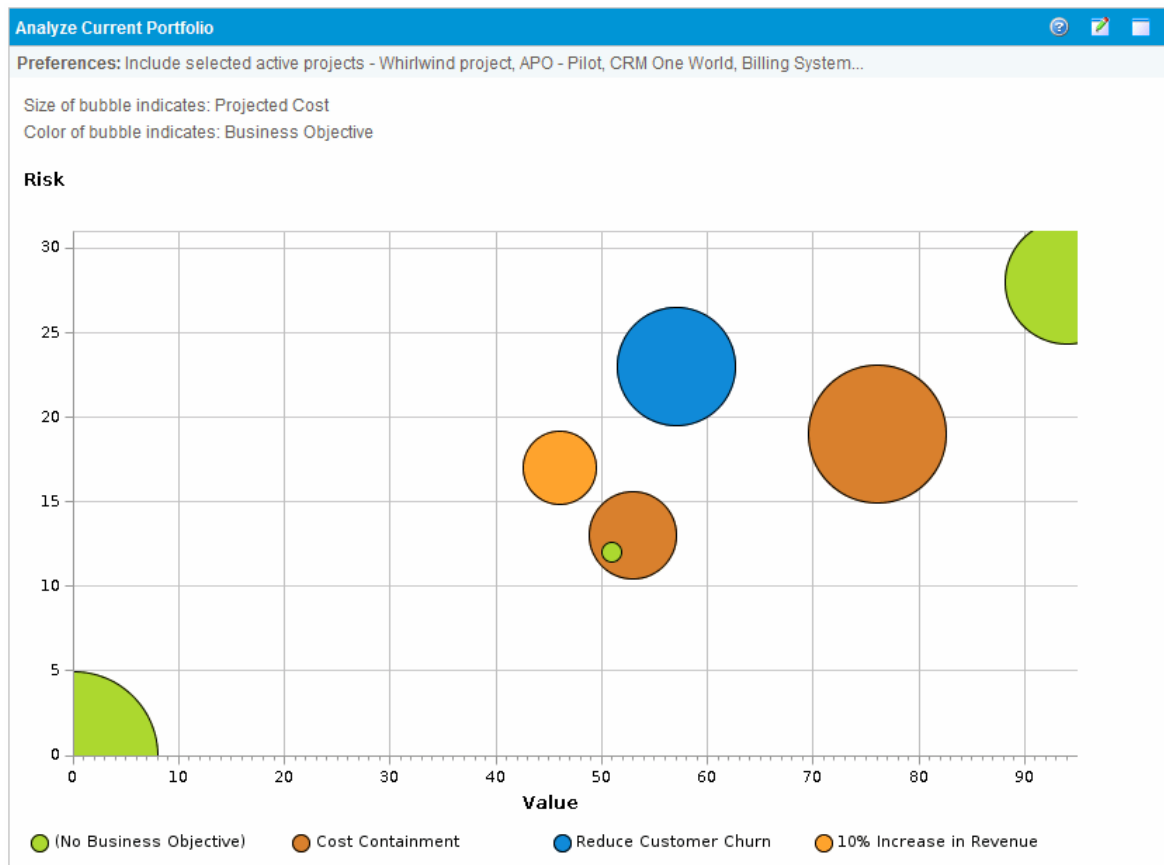
The preferences you can edit for this portlet are the same as the filter fields for the Analyze Current Portfolio page. See "Analyzing the Portfolio" on page 53.

You can place multiple instances of this portlet with different filter field settings on a single PPM Dashboard page to obtain simultaneous views of different aspects of the current portfolio.

Viewing Portfolio Data with Portfolio By *<Category>* Portlets

You can use Portfolio By *<Category>* portlets to analyze and aggregate financially significant metrics for the portfolio's contents, including costs, financial benefits, NPV, and nominal return.

The specific Portfolio by *<Category>* portlets are as follows:

- (For business objectives) Portfolio By Business Obj

- Portfolio By Project Class

- Portfolio By Asset Class

The portlet displays a comparison of the selected category period by period. For example, the Portfolio By Business Obj portlet is shown in "Figure 4-4. Portfolio by Business Obj portlet" on the next page.

Figure 4-4. Portfolio by Business Obj portlet
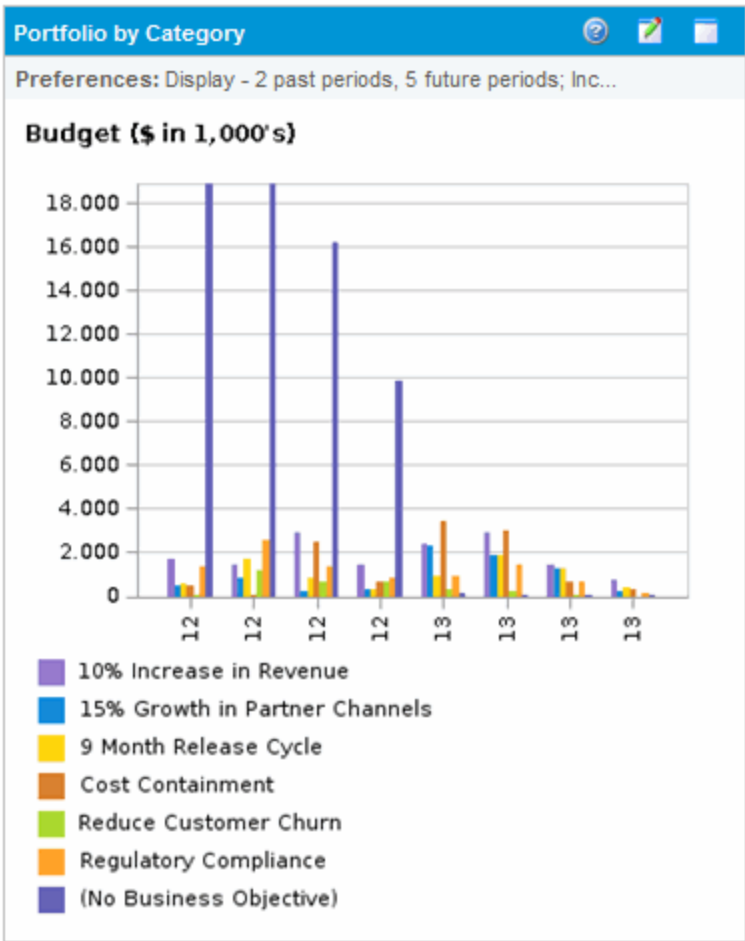
Clicking a bar in the chart opens a drill-down page detailing the budget by period for each lifecycle entity that makes up the bar. See the example in "Figure 4-5. Portfolio by Category Business Objective drill-down page" on the next page.

Figure 4-5. Portfolio by Category Business Objective drill-down page

Portfolio by Category Business Objective: 10% Increase in Revenue

[Done]

Budget Details by Period

Total Budget: $11,898,957

Proposals	Q3 12	Q4 12	Q1 13	Q2 13	Q3 13	Q4 13	Q1 14	Q2 14	Total
ACME Project StreamPath	$1,140,778	$151,479	$0	$0	$0	$0	$0	$0	$1,292,257
Corporate Intranet	$220,996	$221,141	$0	$0	$0	$0	$0	$0	$442,137
Customer Connect	$36,000	$36,000	$0	$0	$0	$0	$0	$0	$72,000
Customer Dynamics	$0	$0	$175,775	$409,400	$64,920	$0	$0	$0	$650,095
Electronic Authorization	$30,000	$30,000	$0	$0	$0	$0	$0	$0	$60,000
Idea Sharing	$0	$0	$100,000	$358,400	$219,640	$0	$0	$0	$678,040
Inventory Rollout	$63,000	$63,000	$0	$0	$0	$0	$0	$0	$126,000
Margin Analysis									$0
PMC-Upgrade	$69,000	$69,000	$0	$0	$0	$0	$0	$0	$138,000
Predictive Analytics	$0	$0	$712,728	$729,280	$0	$0	$0	$0	$1,442,008
Single Sign On	$0	$0	$385,800	$397,560	$128,600	$0	$0	$0	$911,960
Total	**$1,559,773**	**$570,620**	**$1,374,304**	**$1,894,640**	**$413,160**	**$0**	**$0**	**$0**	

Projects	Q3 12	Q4 12	Q1 13	Q2 13	Q3 13	Q4 13	Q1 14	Q2 14	Total
APO - Pilot	$0	$0	$0	$0	$0	$0	$0	$0	$0
Data Mining Expansion	$0	$81,700	$202,600	$317,440	$312,480	$153,980	$47,120	$0	$1,115,320
Location intelligence	$0	$85,880	$256,200	$257,460	$81,320	$0	$0	$0	$680,860
Marketing WebPortal V2	$524,480	$0	$0	$0	$0	$0	$0	$0	$524,480
Web for One World	$217,849	$140,000	$0	$0	$0	$0	$0	$0	$357,849
Total	**$742,329**	**$307,580**	**$458,800**	**$574,900**	**$393,800**	**$153,980**	**$47,120**	**$0**	

Assets	Q3 12	Q4 12	Q1 13	Q2 13	Q3 13	Q4 13	Q1 14	Q2 14	Total
Business Availability Monitoring	$0	$0	$0	$0	$0	$0	$0	$0	$0
Corporate Finance System (APAC)	$0	$0	$0	$0	$0	$0	$0	$0	$0
Legacy Data Warehouse	$309,102	$311,377	$114,174	$116,026	$114,080	$117,481	$112,358	$115,832	$1,310,430
Service Configuration System	$27,000	$27,000	$0	$0	$0	$0	$0	$0	$54,000
Sparta System	$180,000	$180,000	$0	$0	$0	$0	$0	$0	$360,000
Travel Connect Mobile	$0	$0	$416,040	$327,680	$466,200	$473,600	$0	$0	$1,683,520
Total	**$516,102**	**$518,377**	**$530,214**	**$443,706**	**$580,280**	**$591,081**	**$112,358**	**$115,832**	

[Done]

Chapter 5: What-If Analysis

Overview of What-If Analysis

This chapter explains how to use scenario comparisons to perform what-if analysis. What-if analysis is a way to determine the consequences of investment-related decisions, without having to actually make purchases and initiate projects.

To perform what-if analysis, HP Portfolio Management allows you to rapidly assemble multiple scenarios for comparison of alternatives in a variety of visualizations. An HP Portfolio Management scenario comparison contains the following:

- A group of proposals, projects, and assets you specify

- Three scenarios, each based on your selection of a different subset of those proposals, projects, and assets

> **Note:** In this document, the term "lifecycle entity" is used to mean a proposal, a project, or an asset, and "lifecycle entities" are any combination of proposals, projects, and assets.
>
> Each of these types of lifecycle entities can be created from scratch, but typically a proposal automatically becomes a project upon approval of the proposal and the project automatically becomes an asset upon completion of the project, depending on the configuration of the request types.

You can use the scenario comparison interface to run an optimization program (an optimizer), with constraints and optimization parameters you specify, to identify optimal scenarios.

> **Note:** Creating, viewing, and modifying scenario comparisons requires the Portfolio Management license, as well as particular access grants and access rights as described in the *HP Portfolio Management Configuration Guide and* "Configuring Access Rights for Scenario Comparisons " on page 114.

If you need to perform a procedure described in this chapter, but you do not have the required access, see your administrator.

Creating a Scenario Comparison

To create a scenario comparison:

1. Log on to PPM Center.

2. From the menu bar, select **Create > Scenario Comparison.**

   The Create Scenario Comparison page opens.

   Create Scenario Comparison

   Comparison Information

   *Comparison Name: [   ]

   Enter Time Range

   *Start Period: April 2014

   *Finish Period: March 2015

   Enter Scenario Names

   Please enter the names of the three scenarios in this scenario comparison.
   You will be able to change these names later.

   *Scenario 1:   Scenario 1
   *Scenario 2:   Scenario 2
   *Scenario 3:   Scenario 3

   Specify Content

   If you know which proposals, projects or assets to include in this scenario comparison, specify them here.

   Include Proposals: [   ]   ☐ All submitted proposals
   Include Projects: [   ]   ☐ All active projects
   Include Assets: [   ]   ☐ All active assets

   For advanced search capabilities, proceed to create the scenario comparison. You will be able to search for, add and remove investment items at any time after the scenario is created.

   [Create]   [Cancel]

3. Enter a **Comparison Name.**

4. Enter a time range to be used for all the visualizations to be presented for the scenario comparison. This time range does *not* affect which lifecycle entities will be included in the scenario comparison, which you will specify in step 6. You can change the **Start Period** and **Finish Period** at any time.

5. Enter names for each of the three scenarios in the scenario comparison.

6. Specify the content, that is, select the set of lifecycle entities, to be included in the scenario comparison. Later, you will specify which of these lifecycle entities to include and which to exclude in each individual scenario. At a minimum, include in the scenario comparison all the lifecycle entities you think you will want to include in any of its scenarios. You can later add lifecycle entities to and delete them from the entire scenario comparison, and add lifecycle entities

to and delete them from the individual scenarios.

As a starting point for the scenario comparison, you can include all submitted proposals, all active projects, and all active assets. Instead, you can use the autocompletes to select particular proposals, projects, and/or assets to include in the scenario comparison.

Using advanced filters on a request type that is configured to show the **Portfolio** field, you can find all the requests of that type that are part of a *hierarchical portfolio* as defined in "Creating and Viewing Hierarchical Portfolios" on page 24.

7. Click **Create** to create the scenario comparison.

> **Note:** You can create a scenario comparison for which a lifecycle entity in the scenario comparison list depends on a lifecycle entity that is not in the list. You might want to make sure that your final scenario comparison list meets all the dependencies specified in the lifecycle entities, or at least note the inconsistencies.

A scenario comparison is created and the Scenario Comparison page opens, as shown in the example in "Deleting a Scenario Comparison" on page 96 and described in "Overview of the Scenario Comparison Page" on the next page.

Figure 5-1. Scenario Comparison page

The following sections describe the information presented in the scenario comparison in detail. For information about changing the scenario comparison and its individual scenarios in a variety of ways,

including adding and deleting lifecycle entities, see "Viewing and Changing Scenario Comparisons" on page 87.

Overview of the Scenario Comparison Page

The Scenario Comparison page has the following major sections:

- Basic information fields for the scenario comparison are near the top of the page. To revise these fields, see "Changing a Scenario Comparison's Basic Information" on page 90. In particular, you can specify for the scenario comparison a supply budget and a set of resource pools, which you can compare against the sum of the costs and resources associated with the lifecycle entities in each individual scenario, in the **Overview** tab on the page.

- A set of tabs shows the results of the scenario comparison, with the **Overview** tab displayed by default. For information about these tabs, see "Reviewing Results (Tabs) of a Scenario Comparison" on page 75.

> **Note:** To calculate costs and benefits in all of its graphs and tables, the scenario comparison uses the following values from the set of proposals, projects, and assets selected for each scenario:
>
> - For previous periods, actual costs and benefits where specified (that is, where not blank and not zero), otherwise forecast (planned) costs and benefits
>
> - For the current period, the *higher* of forecast or actual costs, and the *higher* of forecast or actual benefits
>
> - For future periods, forecast costs and benefits
>
> The cost determinations are independent of any approved budgets associated with the selected proposals, projects, and assets.
>
> Also, to calculate **Total Resources (person months),** the scenario comparison uses the following values:
>
> - For previous periods, actual effort where specified, otherwise planned effort
>
> - For the current period, the *higher* of planned or actual effort
>
> - For future periods, planned effort

- An **Export to Excel** link is at the upper left of the **Scenario Content** section. Clicking this link exports to Microsoft Excel the basic information fields (at the top of the scenario comparison) and the displayed columns of the **Scenario Content** table (including indication of any dependency violations).

Only displayed columns are exported to Excel, in the order they are displayed. In other words, the Microsoft Excel file reflects any changes you have made to the columns selected for display and to their order.

- The **Scenario Names** field provides links to the Scenario Details pages for each scenario in the scenario comparison. This is the same set of links that appears in the **Scenario Details** field near the top of the scenario comparison.

- The **Scenario Content** section lists the lifecycle entities that meet the criteria you specified when you created the scenario comparison. The heading includes the number of items in the scenario comparison, an **Add Content** button, a **Remove Content** button, if any row is selected, and an **Update Scenarios** button.

> **Note:** Clicking **Update Scenario** saves all the changes you have made to the selection of items and accordingly updates the graphs on all the tabs above the **Scenario Content** section. Clicking it does not save any change you have made to the basic information fields above the graphs, such as **Comparison Name** and **Description**.

You can change the scenarios by adding and removing lifecycle entities from the entire scenario comparison, and by including and excluding particular lifecycle entities from the three individual scenarios to differentiate them. See "Viewing and Changing Scenario Comparisons" on page 87.

The columns of the **Scenario Content** section provide information for each lifecycle entity, as described in the following table:

Column	Description
Name	Name of the lifecycle entity, displayed as a link that allows you to open the lifecycle entity.
Phase	Phase of the lifecycle entity — **Proposal, Project,** or **Asset.**
Business Unit	Business unit specified for the lifecycle entity, if any.
Projected Cost	Total cost for the lifecycle entity, calculated as the sum of the following: ■ *For each previous month,* actual costs where reported (that is, where not blank or zero), otherwise forecast costs ■ *For the current month,* the higher of forecast cost and, if reported, actual cost ■ *For future months,* the forecast costs

Column	Description
Projected Benefit	Total financial benefit for the lifecycle entity, calculated as the sum of the following: ■ *For each previous month,* actual benefits where reported (that is, where not blank or zero), otherwise forecast benefits ■ *For the current month,* the higher of forecast benefit and, if reported, actual benefit ■ *For future months,* the forecast benefits
Total Resources (person months)	Total number of person months required by the lifecycle entity, as specified in its attached staffing profile.
Nominal Return	Nominal return for the lifecycle entity, calculated as described in "Total Nominal Return" on page 120. This column is displayed only if the corresponding parameter has been enabled by an administrator, as is the case in the example in "Figure 5-1. Scenario Comparison page" on page 70.
Net Present Value	Net present value for the lifecycle entity, calculated as described in "Net Present Value (NPV)" on page 120. This column is displayed only if the corresponding parameter has been enabled by an administrator, as is the case in the example in "Figure 5-1. Scenario Comparison page" on page 70.
Custom Field Value	Custom financial metric specified by an administrator for the purpose of ranking the lifecycle entity. This column is displayed only if the corresponding parameter has been enabled by an administrator, as is the case in the example in "Figure 5-1. Scenario Comparison page" on page 70.
Score	**Total Score** calculated for the lifecycle entity. See "Determining Value and Risk Ratings" on page 60.
Scenario 1, 2, and 3	List of check boxes that indicate which lifecycle entities (rows) are included in or excluded from each of the three scenarios for comparison purposes. Initially, all lifecycle entities are selected for all three scenarios. To differentiate the scenarios to be compared, deselect the check boxes as desired, as in the example in "Figure 5-1. Scenario Comparison page" on page 70. **Note:** By default, scenarios in a scenario comparison are identical if they have the same set of lifecycle entities selected. However, you can change the start date for any lifecycle entity in a scenario (see "Adjusting Start Dates for Lifecycle Entities in a Scenario" on page 99), which makes that scenario different from other scenarios with the same entities. The difference is not identified on the Scenario Comparison page.

- At the bottom of the Scenario Comparison page, the **Notes** section allows you to add notes to the scenario comparison. See "Adding Notes to a Scenario Comparison" on page 96.

Optional Columns Available in Scenario Content Table

As described in "Ways to Change Appearance of Scenario Content in Scenario Comparisons" below, you can add particular columns to the scenario content table in any particular scenario comparison. Some of the new columns are available only if the `COST_CAPITALIZATION_ENABLED server.conf` parameter is set to `true` to enable separate tracking of capital and operating costs, as indicated in the following list of the columns:

- **Approved Budget**

- **Approved Capital Budget** (if cost capitalization is enabled)

- **Approved Operating Budget** (if cost capitalization is enabled)

- **Forecast Cost**

- **Forecast Capital Cost** (if cost capitalization is enabled)

- **Forecast Operating Cost** (if cost capitalization is enabled)

- **Actual Cost**

- **Actual Capital Cost** (if cost capitalization is enabled)

- **Actual Operating Cost** (if cost capitalization is enabled)

- **Forecast Benefit**

- **Actual Benefit**

Ways to Change Appearance of Scenario Content in Scenario Comparisons

You can change the **Scenario Content** table in scenario comparisons in the following ways, and the changes are retained after you log out and log back in to PPM Center:

- To rearrange columns, click and drag a column heading to the desired position.

- To resize a column, click and drag the dividing line between its column heading and the adjacent column heading.

> **Note:** For the following options, instead of clicking or right-clicking a column heading as described, you can click the drop-down arrow that appears at the right of any column heading when you move the mouse there.

- To hide a table column, right-click any column heading, select **Columns,** and then click (deselect) the name of the column to be hidden.

  To display a column that is not displayed, right-click any column heading, select **Columns,** and then click (select) the name of the column to be displayed.

- To base the sort order of the rows on the values in a column, click that column heading, or right-click in the column heading and click **Sort Ascending** or **Sort Descending.**

- Right-click a column heading and click **Freeze Column "<*column name*>"** to:

  - Move that column as far to the left as possible but to the right of any other previously frozen columns

  - Prevent that column from being moved by clicking and dragging its heading

  - Freeze the width of that column when horizontal scrolling is used for other columns

  Once a column is frozen, you can right-click the column heading and click **Unfreeze Column "<*column name*>",** which moves the column to the immediate right of any other frozen columns.

Reviewing Results (Tabs) of a Scenario Comparison

The results of a scenario comparison are presented in the Scenario Comparison page in a set of tabs, each of which is described in the following sections. In these examples, different sets of entities have been selected for each scenario in the scenario comparison. For information about how the total cost, benefit, and resources are calculated, see "Overview of the Scenario Comparison Page" on page 71.

Overview Tab

The **Overview** tab in the Scenario Comparison page provides an overview of the three scenarios in the scenario comparison. See "Figure 5-2. Scenario Comparison page, Overview tab" on the next page.

Figure 5-2. Scenario Comparison page, Overview tab
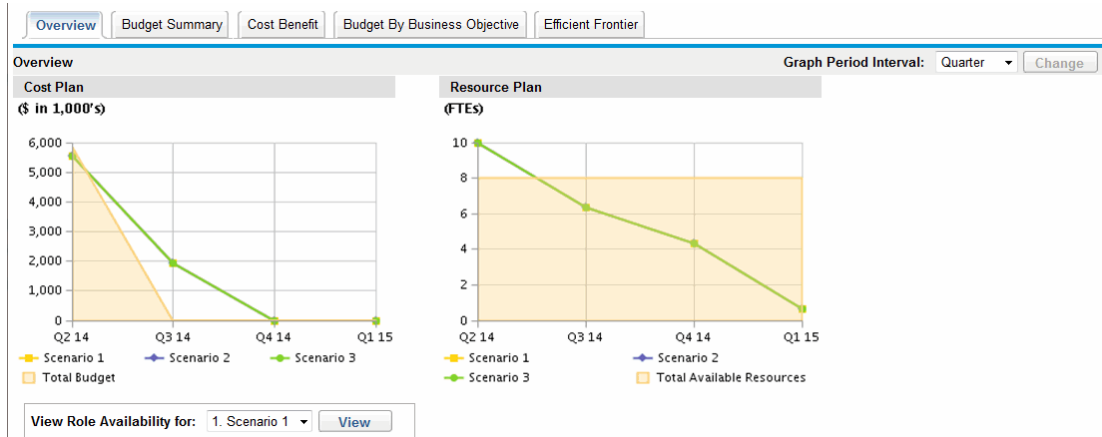
Unlike most of the other tabs, the **Overview** tab integrates all three scenarios into each of its two visualizations—the **Cost Plan** and **Resource Plan** graphs, as follows:

- **Cost Plan.** Each scenario line in the Cost Plan graph shows, for each period, the sum of the costs attached to all the lifecycle entities selected for that scenario. For information about the cost calculations, see "Overview of the Scenario Comparison Page" on page 71.

  If a supply budget has been specified in the basic information section above the tabs, the graph includes the supply budget as the Total Budget line, with solid color underneath. For information about specifying the supply budget, see "Changing a Scenario Comparison's Basic Information" on page 90.

- **Resource Plan.** Each scenario line in the Resource Plan graph shows, for each period, the resources required for that scenario, based on the sum of the total resource requirements from all the staffing profiles attached to all the lifecycle entities selected for that scenario.

  If the **Calculate Total Available Resources for comparison from the following Resource Pools** field has been specified in the basic information section above the tabs, the graph includes the sum of the resources in those resource pools as the Total Available Resources line, with solid color underneath. To specify this field, see "Changing a Scenario Comparison's Basic Information" on page 90. The resource supply you specify for the scenario comparison need not be related to the resource demand represented by the set of staffing profiles attached to the lifecycle entities in a scenario.

  You can also view the role availability for a particular scenario and determine at a glance where and when particular roles are needed. For more detailed information, see "Viewing Role Availability and Requirements for a Scenario" on page 102.

> **Note:** In any period, a scenario's required budget or resource can exceed the supply budget or resource specified for the scenario comparison. You can run a scenario optimization program with various options for objectives and constraints, and the program ensures that the optimized scenario does not exceed the supply budget or resource you specify. See "Running Scenario Optimizations" on page 103.

The graphs on all the tabs (except the **Efficient Frontier** tab) use the same time interval for their horizontal axes. To change the time interval, on any of these tabs select a new value in the **Graph Period Interval** field and click **Change.** See "Figure 5-3. Graph Period Interval field" below.

Figure 5-3. Graph Period Interval field

Budget Summary Tab

The **Budget Summary** tab in the Scenario Comparison page provides a graph of the cost information for each scenario. See "Figure 5-4. Scenario Comparison page, Budget Summary tab" below.

Figure 5-4. Scenario Comparison page, Budget Summary tab
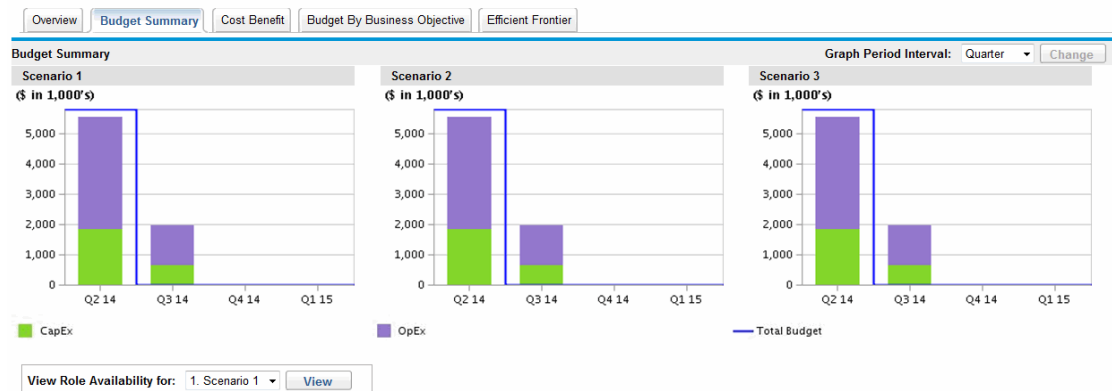
Each graph displays capital expense and operating expense in a stacked bar chart. For information about the cost (budget) calculations, see "Overview of the Scenario Comparison Page" on page 71.

If a supply budget is specified for the scenario comparison, the supply budget is displayed as the capacity line. For details on how to specify the supply budget for a scenario comparison, see "Changing a Scenario Comparison's Basic Information" on page 90.

> **Note:** In any period, a scenario's required budget can exceed the supply budget specified for the scenario comparison. You can run a scenario optimization program with various options for objectives and constraints, and the program ensures that the optimized scenario does not exceed the supply budget you specify. See "Running Scenario Optimizations" on page 103.

> **Note:** Display of negative values for expenses is not supported.

To change the time interval used for the horizontal axes in the graphs on all the tabs except the **Efficient Frontier** tab, select a new value in the **Graph Period Interval** field and click **Change** (see "Budget Summary Tab" on the previous page).

Cost Benefit Tab

The **Cost Benefit** tab in the Scenario Comparison page provides a graph illustrating the cost/benefit analysis for each scenario. See "Figure 5-5. Scenario Comparison page, Cost Benefit tab" below.

Figure 5-5. Scenario Comparison page, Cost Benefit tab
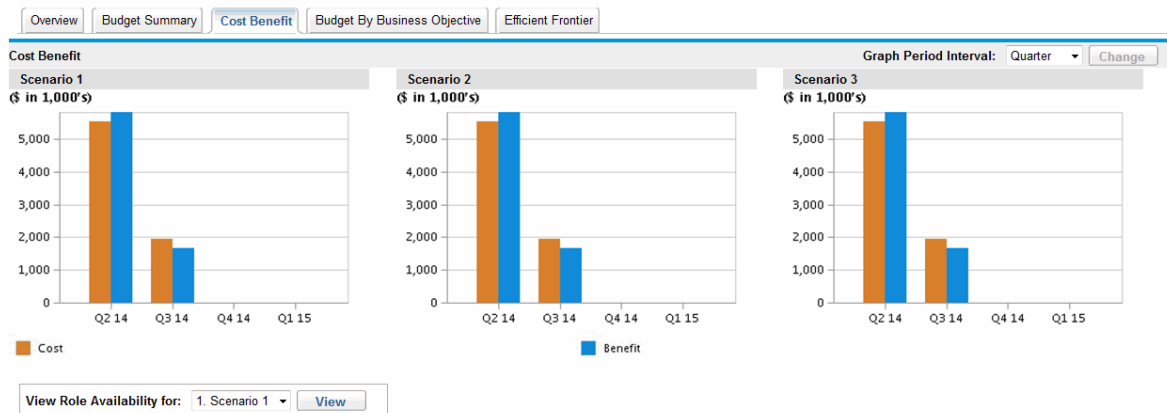
The graph for each scenario is a bar chart depicting the expected cost and expected benefit per period. This graph serves the following functions:

- The cost and benefit bars in each graph give information regarding the net benefit by period for each scenario.

- Since the graph is displayed by period, it also portrays the cost and benefit trends for each scenario.

For information about the cost and benefit calculations, see "Overview of the Scenario Comparison Page" on page 71.

To change the time interval used for the horizontal axes in the graphs on all the tabs except the **Efficient Frontier** tab, select a new value in the **Graph Period Interval** field and click **Change** (see "Figure 5-3. Graph Period Interval field" on the previous page).

Budget By Asset Class Tab

The **Budget By Asset Class** tab in the Scenario Comparison page provides a graph comparing the budget per period for each scenario by asset class. See "Figure 5-6. Scenario Comparison page, Budget By Asset Class tab" on the next page.

Figure 5-6. Scenario Comparison page, Budget By Asset Class tab
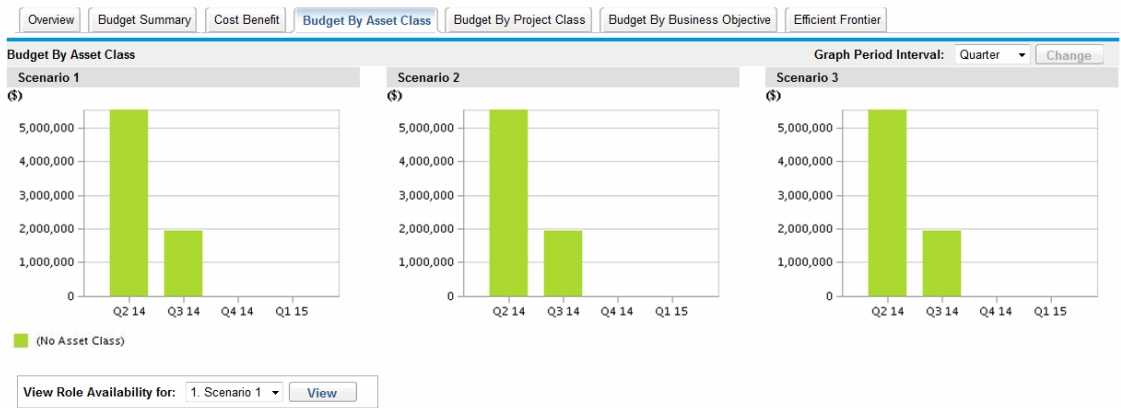
The graph for each scenario consists of a bar chart with adjacent bars (one for each asset class) in each period. The bars allow you, for each scenario, to compare the budget distribution among the various asset classes—Informational, Infrastructure, and Transactional.

For information about the cost (budget) calculations, see "Overview of the Scenario Comparison Page" on page 71.

To change the time interval used for the horizontal axes in the graphs on all the tabs except the **Efficient Frontier** tab, select a new value in the **Graph Period Interval** field and click **Change** (see "Figure 5-3. Graph Period Interval field" on page 77).

Budget By Project Class Tab

The **Budget By Project Class** tab in the Scenario Comparison page provides a graph comparing the budget per period for each scenario by project class. See "Figure 5-7. Scenario Comparison page, Budget By Project Class tab" on the next page.

Figure 5-7. Scenario Comparison page, Budget By Project Class tab
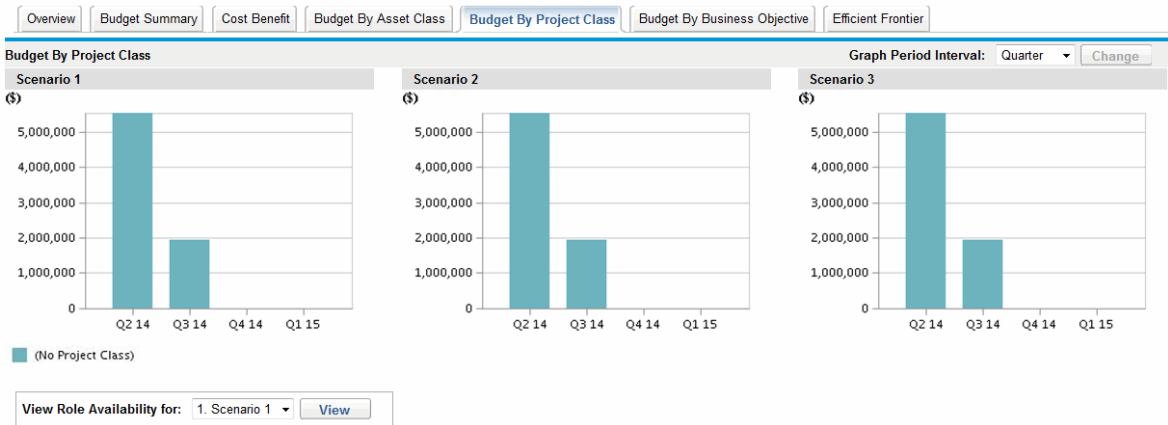
The graph for each scenario consists of a bar chart with adjacent bars (one for each project class) in each period. The bars allow you, for each scenario, to compare the budget distribution among the various project classes—Core (Keep the Lights On), Efficiency, Growth, and Innovation.

For information about the cost (budget) calculations, see "Overview of the Scenario Comparison Page" on page 71.

To change the time interval used for the horizontal axes in the graphs on all the tabs except the **Efficient Frontier** tab, select a new value in the **Graph Period Interval** field and click **Change** (see "Figure 5-3. Graph Period Interval field" on page 77).

Budget By Business Objective Tab

The **Budget By Business Objective** tab in the Scenario Comparison page provides a graph comparing the budget per period for each scenario by business objective. See "Figure 5-8. Scenario Comparison page, Budget By Business Objective tab" on the next page.

Figure 5-8. Scenario Comparison page, Budget By Business Objective tab
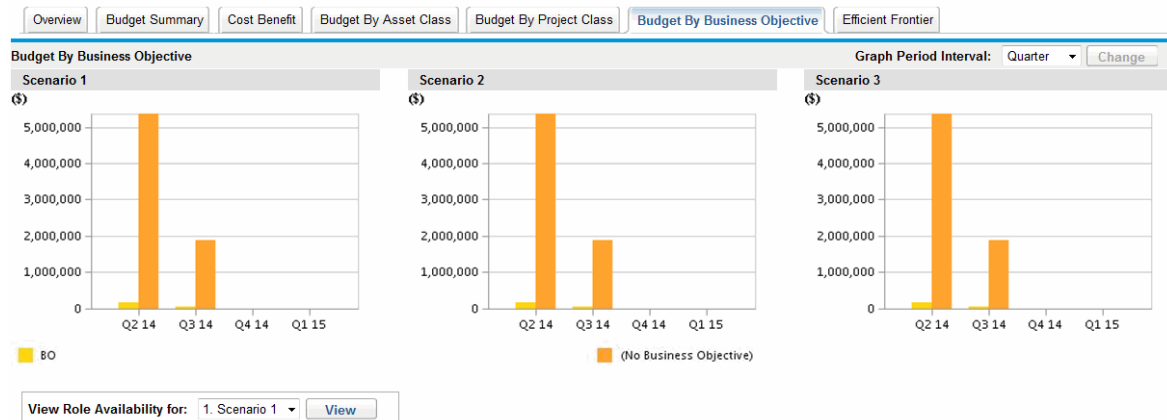
The graph for each scenario consists of a bar chart with adjacent bars (one for each business objective) in each period. The bars allow you, for each scenario, to compare the budget distribution among the various business objectives.

For information about the cost (budget) calculations, see "Overview of the Scenario Comparison Page" on page 71.

To change the time interval used for the horizontal axes in the graphs on all the tabs except the **Efficient Frontier** tab, select a new value in the **Graph Period Interval** field and click **Change** (see "Figure 5-3. Graph Period Interval field" on page 77).

Efficient Frontier Tab

The **Efficient Frontier** tab in the Scenario Comparison page can display the efficient frontier graph discussed in this section. When you click **Generate Efficient Frontier** on the **Efficient Frontier** tab and specify the constraints and performance objective (for example, maximized NPV) you want to apply,   HP Portfolio Management invokes an optimization program (optimizer). By performing extensive calculations that reflect using various subsets of all the lifecycle entities in the scenario comparison, the optimizer generates the efficient frontier curve.

For a detailed description of the efficient frontier graph, see "Understanding the Efficient Frontier Graph" below. For information about specifying the desired parameters and generating the graph, see "Generating the Efficient Frontier Graph" on page 83.

Understanding the Efficient Frontier Graph

As shown in the example in "Figure 5-9. Scenario Comparison page, Efficient Frontier tab" on the next page, the efficient frontier graph's horizontal axis is the budget and its vertical axis is one of the following performance objectives you chose to maximize:

- **NPV.** NPV is the collective net present value for the lifecycle entities that the optimizer selects. For a definition of NPV, see "Net Present Value (NPV)" on page 120.

- **Total Score.** Total Score is the collective Total Score for the lifecycle entities that the optimizer selects. For information about how the Total Score for a lifecycle entity is calculated, see "Determining Value and Risk Ratings" on page 60.

- **Value.** Value is the collective Value Rating for the lifecycle entities that the optimizer selects. For information about how the Value Rating for a lifecycle entity is calculated, see "Determining Value and Risk Ratings" on page 60.

Figure 5-9. Scenario Comparison page, Efficient Frontier tab
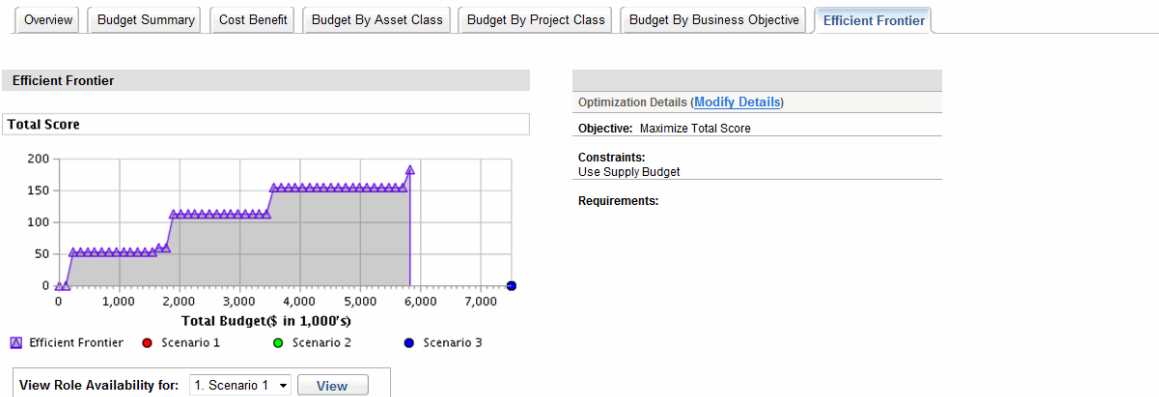
The curve, calculated by the optimizer, is the efficient frontier—the best performance that can be achieved for your chosen objective when the optimal combinations (subsets) of all the lifecycle entities in this scenario comparison are used at various budget levels, within a set of constraints and requirements you specify (described later). The fewer such constraints and requirements, the higher the curve (that is, the better the performance) can be.

> **Note:** To generate the efficient frontier, the scenario comparison must have a supply budget specified in the basic information (top section) of the scenario comparison.

The three scenarios of the scenario comparison being viewed provide three specific data points on the graph. The budget level (position on the horizontal axis) for a scenario data point is the sum of the costs for all the lifecycle entities in that scenario.

It is common for these scenario data points to fall below the efficient frontier curve. If you place no constraints on the optimizer's generation of the efficient frontier, the actual performance of any scenario, which specifies some particular combination of the lifecycle entities in this scenario comparison, will fall on or below the curve.

A scenario's data point can be above the curve, for either of the following reasons:

- The constraints you specified in the efficient frontier parameters (as described in the procedure in "Generating the Efficient Frontier Graph" on the next page) are stricter than those of the scenario, so those constraints made the efficient frontier less successful than the scenario in meeting your objective at that supply budget level.

- The efficient frontier curve has not been regenerated since the scenario was changed in such a way that the scenario's performance improved.

> **Note:** You can invoke the optimizer for any of the scenarios in a scenario comparison, to determine the best subset of all the lifecycle entities in the scenario comparison to use for your performance objective. See "Running Scenario Optimizations" on page 103. (Running a scenario optimization does not generate the efficient frontier curve.) If you use the same set of constraints to both optimize a scenario and generate the efficient frontier, that scenario's data point will fall on the efficient frontier curve.

The right side of the **Efficient Frontier** tab displays the objective, the budget and resource constraints, and any other requirements that were specified in the first Efficient Frontier window when the curve was last generated (see "Generating the Efficient Frontier Graph" below).

Generating the Efficient Frontier Graph

To specify constraints for and generate an efficient frontier graph:

1. Open the scenario comparison for which you want to generate the efficient frontier graph. See "Listing and Viewing Scenario Comparisons" on page 87.

2. Click the **Efficient Frontier** tab.

3. Specify the desired supply budget for the scenario comparison by clicking **Add Supply Budget** if no supply budget has been previously specified, or **Edit Supply Budget** if a supply budget has been previously specified.

4. If the efficient frontier graph has never been generated for this scenario comparison, click **Generate Efficient Frontier** on the **Efficient Frontier** tab.

    If the efficient frontier graph has been previously generated, click the **Modify Details** link on the **Efficient Frontier** tab.

The first Efficient Frontier window (of two) appears.

a. Specify which option you want to maximize as the performance objective—NPV, Total Score, or Value. See "Understanding the Efficient Frontier Graph" on page 81.

b. Specify the option to use the indicated resource pools (if any) as part of the constraints.

c. (Optional) To specify the highest average **Risk Rating** to allow for the lifecycle entities the optimizer will choose, select the check box and specify a value in the stated range for the **Average Risk must stay below** field. (For a definition of **Risk Rating,** see "Determining Value and Risk Ratings" on page 60.)

d. (Optional) To specify the lowest average **Value Rating** to allow for the lifecycle entities the optimizer will choose, select the check box and specify a value in the stated range for the **Average Value must stay above** field. (For a definition of **Value Rating,** see "Determining Value and Risk Ratings" on page 60.)

e. (Optional) To specify the highest average **Custom Field** value to allow for the lifecycle entities the optimizer will choose, select the **Custom Field Value** check box, select the **Average Custom Field must stay below** option, and specify a value in the stated range.

To specify the lowest average **Custom Field** value to allow for the lifecycle entities the optimizer will choose, select the **Custom Field Value** check box, select the **Average Custom Field must stay above** option, and specify a value in the stated range.

f. (Optional) To specify the minimum percentage of budget to be allocated to various business objectives:

    i. Select the **Business Objective Mix** check box.

    ii. Select a business objective from the **Business Objective** list that appears, and specify its minimum budget percentage in the **% Mix** field. To specify percentages for other business objectives in the list, if any, click **Add a Business Objective** and repeat this step.

    You need not specify minimum percentages for all of the business objectives—regardless of whether you specify a percentage for a particular business objective, the optimizer can select lifecycle entities that use the business objective if the lifecycle entities meet all your other constraints.

    The total of the percentages for the business objectives you specify must be 95% or less.

g. (Optional) To specify the minimum percentage of budget to be allocated to various project classes:

    i. Select the **Project Class Mix** check box.

    ii. Select a project class from the **Project Class** list that appears, and specify its minimum budget percentage in the **% Mix** field. To specify percentages for other project classes in the list, if any, click **Add a Project Class** and repeat this step.

    You need not specify minimum percentages for all of the project classes—regardless of whether you specify a percentage for a particular project class, the optimizer can select lifecycle entities that use the project class if the lifecycle entities meet all your other constraints.

    The total of the percentages for the project classes you specify must be 95% or less.

h. (Optional) To specify the minimum percentage of budget to be allocated to various asset classes:

    i. Select the **Asset Class Mix** check box.

    ii. Select an asset class from the **Asset Class** list that appears, and specify its minimum budget percentage in the **% Mix** field. To specify percentages for other asset classes in the list, if any, click **Add an Asset Class** and repeat this step.

    You need not specify minimum percentages for all of the asset classes—regardless of whether you specify a percentage for a particular asset class, the optimizer can select lifecycle entities that use the asset class if the lifecycle entities meet all your other constraints.

    The total of the percentages for the asset classes you specify must be 95% or less.

i. Click **Next.**

The second Efficient Frontier window (of two) appears, listing all the lifecycle entities for this scenario comparison.

j. Use the check boxes in the **Required?** column to specify which lifecycle entities you insist must be included in the efficient frontier, regardless of the effect of including them on maximizing the performance objective.

> **Note:** Regardless of your selections for the **Required?** column, if any of the scenario comparison's listed lifecycle entities specify any dependencies on any other listed lifecycle entities, the selections of the optimizer will adhere to those dependencies. In other words, the optimizer will prevent any dependency violations among the lifecycle entities in the list. However, the optimizer does not consider dependencies of lifecycle entities in the scenario comparison list upon lifecycle entities that are not in the list at all.

k. Use the check boxes in the **Allow new start date?** column to specify which of the proposals and projects that have not been started you will allow the optimizer to delay starting if doing so improves performance for the objective you chose. The optimizer always considers delays in increments of one month, up to six months.

If the planned start date for a proposal or project is in the past, that proposal or project does not have the option to allow you to delay its start date. Assets do not have the option.

The results of the efficient frontier generation do not indicate which of the lifecycle entities that you allow to have delayed start dates would actually be delayed, or by how much they would be delayed.

l. Click **Done.**

The optimizer calculates the efficient frontier curve, based on the constraints you specified.

This program can take a considerable amount of time to run, depending on the amount of data it must evaluate. A progress bar is displayed.

m. When the calculations are completed, the **View Scenario Comparison** button appears.

> **Note:** If no combination of lifecycle entities can meet the set of constraints you specified, the optimizer cannot find a feasible solution. In this case, specify constraints that are less restrictive and run the optimization again.

n. Click **View Scenario Comparison.**

The scenario comparison appears again.

o. Click the **Efficient Frontier** tab to view the efficient frontier graph.

Viewing and Changing Scenario Comparisons

You can view and change scenario comparisons and individual scenarios by doing any of the following:

- Listing and viewing scenario comparisons, filtered by criteria you specify.

- Changing the scenario comparison's basic information.

- Changing the scenario comparison's content.

- Deleting a scenario comparison.

- Copying a scenario comparison.

- Changing individual scenarios.

- Running scenario optimizations.

- Configuring scenario comparison security.

Listing and Viewing Scenario Comparisons

> **Note:** For information about access to view and edit scenario comparisons, see "Configuring Access Rights for Scenario Comparisons " on page 114.

To view the last scenario comparison you previously viewed, without having to display a list of scenario comparisons and select one:

1. Log on to PPM Center.

2. From the menu bar, select **Open > Portfolio Management > Scenario Comparisons > View Last Scenario Comparison.**

   The Scenario Comparison page appears, as shown in the example in "Figure 5-10. Scenario Comparison page" on the next page.

To list the scenario comparisons you can access, and view a particular one:

1. Log on to PPM Center.

2. From the menu bar, select **Search > Scenario Comparisons.**

   The Scenario Comparison List page appears.

Scenario Comparison List

Showing 1 - 3 of 3

	Comparison Name	Description	Created By △	Created On	Last Updated By	Last Updated On
✕	Coporate Planning Scenarios		Admin User	February 19, 2014	Admin User	February 19, 2014
✕	rachel		Admin User	January 20, 2014	Admin User	January 20, 2014
✕	WFCorp: Planning 2014		David Jones	February 19, 2014	David Jones	February 19, 2014

Showing 1 - 3 of 3

Filter By

Created By: [   ] 👤

Show Only Comparisons Updated In The Last: [1 Month ▾]

Show Only Active Comparisons: ⦿ Yes ◯ No

[Apply]

3. (Optional) Filter the scenario comparison list using the parameters in the **Filter By** section, as described in the following table:

Field Name	Description
Created By	Displays only scenario comparisons created by a particular user
Show Only Comparisons Updated in The Last	Displays only scenario comparisons updated within the period selected from the list
Show Only Active Comparisons	If **Yes,** displays only active scenario comparisons If **No,** displays all scenario comparisons

4. To reload the Scenario Comparison List page with the filters applied, click **Apply.**

5. To view a particular scenario comparison in the list, click its name in the **Comparison Name** column.

The Scenario Comparison page appears, as shown in the example in "Figure 5-10. Scenario Comparison page" below.

The columns **Nominal Return** (defined in "Total Nominal Return" on page 120), **Net Present Value** (defined in "Net Present Value (NPV)" on page 120), and **Custom Field Value** (a custom financial metric used to rank each lifecycle entity) appear in the **Scenario Content** section only if corresponding parameters have been enabled for display by the administrator. In the example, **Nominal Return** has not been enabled and **Net Present Value** and **Custom Field Value** have been enabled.

Figure 5-10. Scenario Comparison page
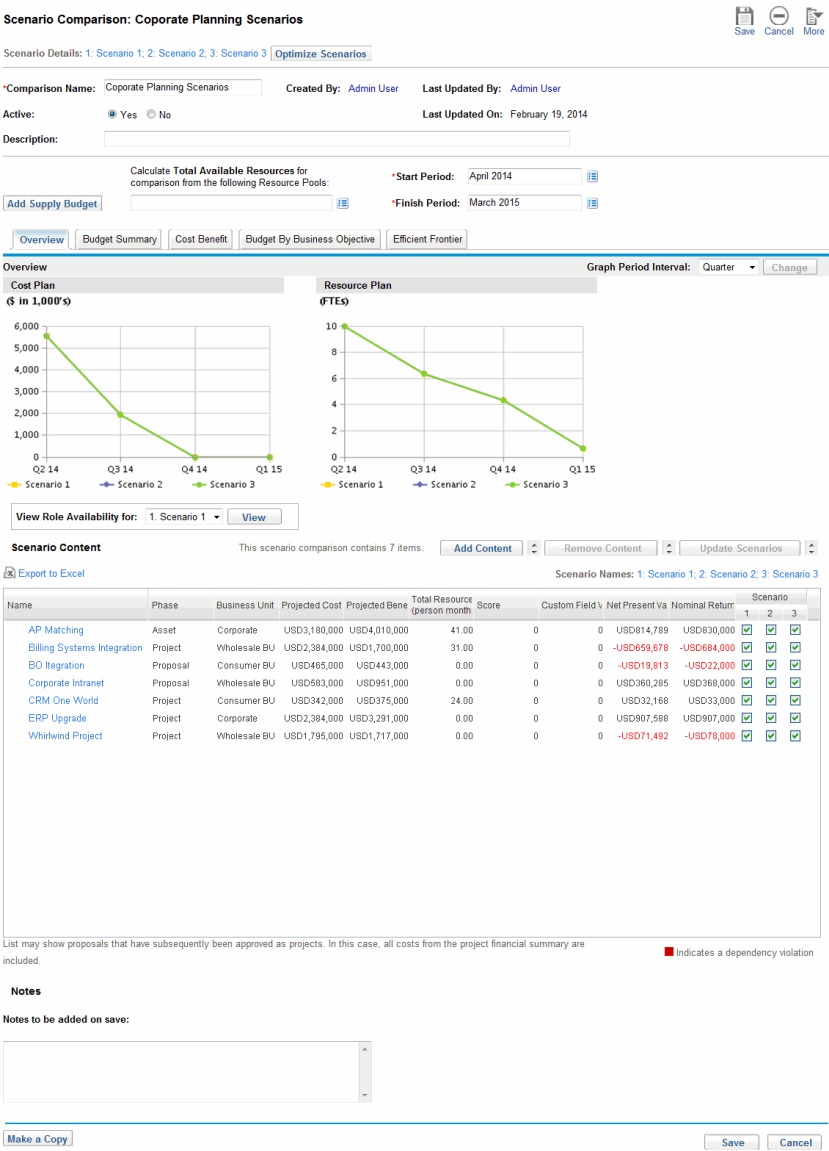
Changing a Scenario Comparison's Basic Information

The basic information (top section) of the Scenario Comparison page contains fields that describe or specify parameters related to the scenario comparison as a whole. Some of the fields were not available when the scenario comparison was first created. See "Figure 5-10. Scenario Comparison page" on the previous page.

To change these fields:

1. Open the scenario comparison that has the basic information fields you want to change. See

2. Using the following table, change these fields as desired.

Field Name (*Required)	Description
Scenario Details	Set of links that open the Scenario Details pages for each scenario in the scenario comparison.
*Comparison Name	Name of the scenario comparison.
Created By	(Read-only) User who created the scenario comparison.
Last Updated By	(Read-only) User who last updated the scenario comparison.
Active	Option to specify whether the scenario comparison is active. If you make a scenario comparison inactive, its information is retained but it is displayed in the Scenario Comparison List only if the **Show Only Active Comparisons** field in the **Filter By** section on the Scenario Comparison List page is set to **No.**
Last Updated On	(Read-only) Date the scenario comparison was last updated.
Description	Description for the scenario comparison.
Add Supply Budget button, or after a supply budget has been added, Edit Supply Budget button	Click to specify the supply budget to use for the scenario comparison. The Supply Budget window opens. In the **Jump To** field, you can select a year from the range of years the scenario comparison covers. **Tip:** You can copy the data in a cell to an adjacent range of cells in the same row, by clicking the cell with the data to copy, clicking the cell at the other end of the range, and then pressing SHIFT + **click.** The supply budget will be displayed as the Total Budget line in the Cost Plan graph of the scenario comparison's **Overview** tab.
Calculate Total Available Resources for comparison from the following Resource Pools	Set of resource pools for which total resources will be summed and displayed as the Total Available Resources line in the Resource Plan graph of the scenario comparison's **Overview** tab. These resource pools need not be related to the resource demand represented by the set of staffing profiles attached to the lifecycle entities in a scenario.
*Start Period	Start period for the scenario comparison.
*Finish Period	End period for the scenario comparison.

3. Click **Save.**

Changing Scenario Content in a Scenario Comparison

The **Scenario Content** section of the Scenario Comparison page lists and controls the contents of the scenario *comparison* and each *individual scenario.* You can change these contents as described in the following sections.

Selecting Which Lifecycle Entities in a Scenario Comparison Are Used in a Scenario

The **Scenario Content** section of the Scenario Comparison page lists all of the lifecycle entities (proposals, projects, and assets) currently in the scenario comparison. The contents of each individual scenario in the scenario comparison are controlled by the check boxes under the scenario numbers **1, 2,** or **3.** See "Figure 5-10. Scenario Comparison page" on page 89.

> **Note:** By default, scenarios in a scenario comparison are identical if they have the same set of lifecycle entities selected. However, you can change the start date for any lifecycle entity in a scenario (see "Adjusting Start Dates for Lifecycle Entities in a Scenario" on page 99), which makes that scenario different from other scenarios with the same entities. This difference is not identified on the Scenario Comparison page.

To change the contents of a particular scenario, using lifecycle entities that are already in the scenario comparison:

1. Open the scenario comparison that has the scenarios you want to change. See "Listing and Viewing Scenario Comparisons" on page 87.

2. Scroll down to the **Scenario Content** section.

3. In the column for scenario 1, 2, or 3, select or deselect the check boxes for the lifecycle entities that you want to be included in or excluded from the scenario.

> **Note:** If lifecycle entities A and B are in the **Scenario Content** list, if lifecycle entity B was defined to depend on lifecycle entity A, and if you deselect the check box for lifecycle entity A without deselecting the check box for lifecycle entity B (in other words, if you create a dependency violation within this scenario), the check boxes for both lifecycle entities become highlighted in red.

4. Do one of the following:

   ■ Click **Save** to save all your changes to the scenario comparison, including any changes you may have made to the basic information fields above the graphs, such as **Comparison Name** and **Description.**

   ■ Click **Update Scenarios** at the top of the **Scenario Content** section to save only the changes

you made to content selections in scenarios. This does *not* save any changes you may have made to the basic information fields above the graphs.

The graphs on all the tabs above the **Scenario Content** section are updated according to the changes you made to the content selections for each scenario.

Adding Lifecycle Entities to a Scenario Comparison and to its Scenarios

The **Scenario Content** section of the Scenario Comparison page lists all of the lifecycle entities currently in the scenario comparison. To add other lifecycle entities to the **Scenario Content** section:

1. Open the scenario comparison you want to change. See "Listing and Viewing Scenario Comparisons" on page 87.

2. At the top right of the **Scenario Content** section, click **Add Content.**

   The Add New Scenario Content window opens, with the following two sections:

   - **Add Specific Items** section to add particular proposals, projects, and/or assets to the scenario comparison, using autocompletes as described in step 3

   - **Search For Scenario Content To Add** section with filters for finding entities to potentially

add to the scenario comparison, as described in step 4

3. To add specific proposals, projects, and/or assets by name to the scenario comparison:

   a. In the **Add Specific Items** section of the scenario comparison, use the autocompletes for the **Include Proposals, Include Projects,** and **Include Assets** fields to select the specific lifecycle entities to be added.

   b. Click **Add.**

      The selected entities that are not already in the scenario comparison are added to the **Scenario Content** section of the scenario comparison.

   c. Click **Save** to save your changes to the scenario comparison.

      If you need to search for entities that meet specific filter criteria, continue to step 4. Otherwise, skip to step 5.

4. To search for entities that meet specific filter criteria:

   a. Complete the fields in the **Search For Scenario Content To Add** section of the scenario comparison as needed.

If you select one or more request types using the autocomplete for the **Request Type** field, the **Show Advanced Filters** button becomes enabled. See step b for information about using advanced filters.

If you select one request type using the autocomplete for the **Request Type** field, the autocomplete for the **Status** field becomes enabled.

See "Determining Value and Risk Ratings" on page 60 for definitions of the Value (**Value Rating**), Risk (**Risk Rating**), and Score (**Total Score**). You can specify a lower limit, an upper limit, or both.

Any upper or lower limits you specify for the budget, benefit, or resource "totals" are applied to the totals for each lifecycle entity across all of its time periods. The budget and the resource totals are calculated as described in "Overview of the Scenario Comparison Page" on page 71. The time range of the scenario comparison does not affect these filters.

The fields for specifying limits on Nominal Return, Net Present Value, and Custom Field Value are available only if the administrator has enabled their use in HP Portfolio Management.

b. The set of advanced filters varies from one request type to another. If you select multiple request types and click **Show Advanced Filters,** only the fields that are *common* to all the request types are displayed as advanced filters in the **Search For Scenario Content To Add** section of the Add New Scenario Content window.

To use advanced filters:

    i. Specify at least one request type in the **Request Type** field.

    ii. Click **Show Advanced Filters.**

    iii. Specify the advanced filters of interest.

c. In the **Sort By** field at the bottom of the Add New Scenario Content window, specify the sort order to use for the lifecycle entities when they are listed, and whether they are to appear in ascending or descending order. Also specify the **Maximum Results Per Page** field.

d. In the **Search for Scenario Content to Add** section of the Add New Scenario Content window, click **Search.**

The lifecycle entities that meet your criteria and that are not yet in the scenario comparison are added to the **Select Scenario Content To Add** section in the Add New Scenario Content window.

e. If you used advanced filters and you want to hide them again, click **Show Simple Filters.**

f. In the list of entities in the **Select Scenario Content To Add** section, select the check boxes to the left of the entities to be added to the scenario comparison (or click **Check All**), and then click **Add.**

The Add New Scenario Content window closes and the lifecycle entities you selected are added to the **Scenario Content** section of the scenario comparison.

g. Click **Save** to save your scenario comparison changes.

5. To differentiate the scenarios to be compared in regard to the added lifecycle entities, deselect the check boxes in the scenario columns as desired.

6. When the scenario comparison is specified as you want, click **Save.**

Removing Lifecycle Entities from a Scenario Comparison

To remove lifecycle entities from a scenario comparison and all of its scenarios:

1. Open the scenario comparison that has lifecycle entities you want to remove. See "Listing and Viewing Scenario Comparisons" on page 87.

   The **Scenario Content** section of the Scenario Comparison page lists all of the lifecycle entities currently available in the scenario comparison.

2. Select the lifecycle entities you want to remove from the scenario comparison, without clicking their links in the **Name** column. You can use Ctrl + click or Shift + click to select more than one lifecycle entity (row). Selected lifecycle entities are highlighted in color.

3. At the top of the **Scenario Content** section, click **Remove Content.**

Note: No indication is provided for any dependency violation you create between any lifecycle entity that is in the **Scenario Content** list and any lifecycle entity that you remove from the list.

Adding Notes to a Scenario Comparison

To add notes to a scenario comparison in the **Notes** section at the bottom of the Scenario Comparison page:

1. Open the scenario comparison to which you want to add notes. See "Listing and Viewing Scenario Comparisons" on page 87.

2. Scroll down to the **Notes** section.

3. Enter the desired text.

4. Click **Save.**

Deleting a Scenario Comparison

To delete a scenario comparison:

1. Log on to PPM Center.

2. From the menu bar, select **Open > Portfolio Management > Scenario Comparisons > List Scenario Comparisons.**

3. Click the **Delete** icon to the left of the scenario comparison to be deleted.

   A question dialog box opens.

4. Click **OK.**

Copying a Scenario Comparison

To copy a scenario comparison:

1. Open the scenario comparison you want to copy. See .

2. At the top of the Scenario Comparison page, click **More > Make a Copy.**

   A copy of the scenario comparison is created and named "Copy(1) Of <*Scenario Comparison Name*>," and the Scenario Comparison page of the copy opens, so that you can rename and revise the copy.

   If a scenario optimization was run against a scenario in the original comparison, the default set of lifecycle entities that is selected for the copy of that scenario, indicated by check boxes in that scenario's column, is the set the optimizer chose. However, in the copy, you can select and deselect that scenario's lifecycle entities as desired.

Changing Individual Scenarios

From the Scenario Comparison page, you can view details of an individual scenario on its Scenario Details page and do the following:

- Add lifecycle entities to or delete them from the scenario

- Change the name of the scenario

- Adjust the planned start dates of lifecycle entities as specified for a particular scenario, if no actual start date has been specified

- View the details of a particular lifecycle entity

- View role availability and requirements for the scenario

Adding or Deleting Lifecycle Entities in a Scenario Comparison to or from a Scenario

See "Selecting Which Lifecycle Entities in a Scenario Comparison Are Used in a Scenario" on page 92 for information about adding a lifecycle entity to or deleting it from a particular scenario when that lifecycle entity is already in the scenario comparison.

Changing the Name of a Scenario

To change the name of a scenario in a scenario comparison:

1. Open a scenario comparison that includes the scenario whose name you want to change. See "Listing and Viewing Scenario Comparisons" on page 87.

2. In the **Scenario Details** field near the top of the Scenario Comparison page (or the **Scenario Names** field near the top of the **Scenario Content** table), click the link that identifies the desired scenario.

   That scenario's Scenario Details page opens, with the **Timeline** tab selected.

   To change the order of the lifecycle entities in the **Timeline** tab, select a different option from the **Order By** field and click **Apply.** To view a subset of the information on the **Timeline** tab, such as only proposals, select a different option from the **View** field and click **Apply.**

3. In the **Scenario Name** field, enter the new scenario name.

4. Click **Save.**

   The scenario's data is saved and the Scenario Comparison page reloads.

5. Click **Done.**

Adjusting Start Dates for Lifecycle Entities in a Scenario

The **Timeline** tab of the Scenario Details page allows you to change a lifecycle entity's planned start date as specified for this particular scenario, if no actual start date has been specified.

> **Note:** If you change the planned start date for a lifecycle entity using the **Timeline** tab, the change gets reflected in the scenario, but you must open the lifecycle entity itself and change its date to make the change permanent.

For example, suppose the portfolio manager changes the start date for the Expand to Europe proposal on the **Timeline** tab to accommodate some scheduling conflicts. The manager likes the way the proposal fits, opens it, and changes its **Expected Start Date** to match the scenario.

When the date for a lifecycle entity (a proposal, project, or asset) is changed in the lifecycle entity itself, the dates for the lifecycle entity's associated forecast costs, financial benefits, and staffing profile are automatically updated accordingly.

To change the dates for a lifecycle entity in a particular scenario:

1. Open a scenario comparison that includes the scenario you want to change. See "Listing and Viewing Scenario Comparisons" on page 87.

2. In the **Scenario Details** field near the top of the Scenario Comparison page (or the **Scenario Names** field near the top of the **Scenario Content** table), click the link that identifies the desired scenario.

   That scenario's Scenario Details page opens, with the **Timeline** tab selected.

3. If you let your mouse hover over a lifecycle entity (horizontal bar) in the **Timeline** tab, a popup appears with the lifecycle entity's name, total budget, total benefit, and total resource. Click the lifecycle entity you want to change.

A window opens with the **<*Lifecycle Entity*> Start Date** read-only field, the **Scenario Start Date** field, and the **Remove <*Lifecycle Entity*>** and **View <*Lifecycle Entity*> Details** buttons, where **<*Lifecycle Entity*>** is **Proposal** or **Project** or **Asset**.

4. Enter the new **Scenario Start Date** for the lifecycle entity. This is the start date for this lifecycle entity *in this scenario*. In other scenarios, you can specify different start dates for this lifecycle entity.

5. Click **Change.**

   The lifecycle entity's start date is updated for the scenario. If you want to make the change permanent, you must open the lifecycle entity and change the date in the lifecycle entity itself.

6. Repeat step 3 through step 5 for other lifecycle entities as desired.

7. Click **Done.**

Viewing the Details of a Lifecycle Entity

To view the details of a lifecycle entity from a particular scenario:

1. Open a scenario comparison that includes the scenario you want to change. See "Listing and Viewing Scenario Comparisons" on page 87.

2. In the **Scenario Details** field near the top of the Scenario Comparison page (or the **Scenario Names** field near the top of the **Scenario Content** table), click the link that identifies the desired scenario.

That scenario's Scenario Details page opens, with the **Timeline** tab selected.

3. If you let your mouse hover over a lifecycle entity (horizontal bar) in the **Timeline** tab, a popup appears with the lifecycle entity's name, total budget, total benefit, and total resource. Click the lifecycle entity whose details you want to view.

A window opens with the *<Lifecycle Entity>* **Start Date** read-only field, the **Scenario Start Date** field, and the **Remove *<Lifecycle Entity>*** and **View *<Lifecycle Entity>* Details** buttons, where *<Lifecycle Entity>* is **Proposal** or **Project** or **Asset**.

4. Click the **View *<Lifecycle Entity>* Details** button.

The lifecycle entity's details are displayed.

Viewing Role Availability and Requirements for a Scenario

The **Role Availability** tab of the Scenario Details page displays a list of all the roles required for a particular scenario, along with how many resources are available across its periods. See "Figure 5-11. Scenario Details page, Role Availability tab" below.

To view the role availability information for a scenario, on the Scenario Comparison page (see "Listing and Viewing Scenario Comparisons" on page 87), do one of the following:

- In the scenario comparison, select a scenario from the **View Role Availability for** list and click **View.**

- Open a particular scenario and click the **Role Availability** tab.

Any resource shortfalls are indicated in parentheses and red.

Figure 5-11. Scenario Details page, Role Availability tab

If you click the link of any of the role names, a drill-down page for that role appears, showing where the requirement for that particular role exists, categorized by proposals, projects, and assets. See "Figure 5-12. Role requirement drill-down page" on the next page.

Figure 5-12. Role requirement drill-down page

HP Project and Portfolio Management Center

Tech Leader Requirement for Scenario: Scenario 3

Tech Leader Capacity is specified by Resource Pools: Global, ALF - General RP

Projects	Apr 14	May 14	Jun 14	Jul 14	Aug 14	Sep 14	Oct 14	Nov 14	Dec 14	Jan 15	Feb 15	Mar 15
ERP Upgrade	2	2	3	0	0	0	0	0	0	0	0	0
Billing Systems Integration	1	1	1	1	1	1	1	1	1	0	0	0
Project Totals	3	3	4	1	1	1	1	1	1	0	0	0

Assets	Apr 14	May 14	Jun 14	Jul 14	Aug 14	Sep 14	Oct 14	Nov 14	Dec 14	Jan 15	Feb 15	Mar 15
AP Matching	1	1	1	1	1	1	1	1	1	1	0	0
Asset Totals	1	1	1	1	1	1	1	1	1	1	0	0

	Apr 14	May 14	Jun 14	Jul 14	Aug 14	Sep 14	Oct 14	Nov 14	Dec 14	Jan 15	Feb 15	Mar 15
Total FTE Required	4	4	5	2	2	2	2	2	2	1	0	0
Total FTE Available	0	0	0	0	0	0	0	0	0	0	0	0
Resource Difference	-4	-4	-5	-2	-2	-2	-2	-2	-2	-1	0	0

Done

The following three data at the bottom of the above two figures are calculated as follows:

- **Total FTE Required** comes from all the staffing profiles attached to the lifecycle entities included in the scenario comparison.

  Total FTE Required does not reflect the real-time data. Instead, it is aggregated by the Staffing Profile Period Sum Update Service configured on the Schedule Services page.

- **Total FTE Availability** come from the resource pool defined in the **Calculate Total Available Resources for comparison form the following Resource Polls** field on the Scenario Comparison page.

- **Resource Difference** is calculated as Total FTE Available - Total FTE Required.

Running Scenario Optimizations

You can run an optimization program (optimizer) that determines the best set of lifecycle entities (proposals, projects, and assets) to include and exclude from all the lifecycle entities in an existing scenario comparison, in order to maximize one of the following as an objective:

- **NPV.** NPV is collective net present value for the lifecycle entities that the optimizer selects. For a definition of NPV, see "Net Present Value (NPV)" on page 120.

- **Total Score.** Total Score is the collective Total Score for the lifecycle entities that the optimizer selects. For information about how the Total Score for a lifecycle entity is calculated, see "Determining Value and Risk Ratings" on page 60.

- **Value.** Value is the collective Value Rating for the lifecycle entities that the optimizer selects. For

information about how the Value Rating for a lifecycle entity is calculated, see "Determining Value and Risk Ratings" on page 60.

Optimization uses the scenario comparison interface, and you can specify separate optimization criteria for one, two, or all three scenarios in a scenario comparison. Any scenario has only one optimization result for a given set of optimization criteria you specify, as described in the following section. Within one scenario comparison, you might want to optimize different scenarios for different performance objectives or different optimization criteria.

Running a New Scenario Optimization

Note: When an optimization is run for any particular scenario, the results overwrite any previous manual specification (using check boxes) as to which lifecycle entities in the scenario comparison are to be included and excluded in that scenario. If you want to preserve the original scenario you plan to optimize, copy the scenario comparison and rename that scenario. See "Copying a Scenario Comparison" on page 97 and "Changing the Name of a Scenario" on page 98.

To run a new scenario optimization:

1. Open the scenario comparison that includes the set of lifecycle entities you want to make available for the optimization. See "Listing and Viewing Scenario Comparisons" on page 87.

2. Near the top of the Scenario Comparison page, click **Optimize Scenarios.**

   The Optimize Your Scenarios window opens.

3. To configure the optimization parameters for one or more scenarios:

a. Click **New Optimization** for the scenario that you want to optimize.

The first Optimize Scenario window (of two) appears.

b. Specify which option you want to maximize as the objective of the optimization—NPV, Total Score, or Value.

c. Specify the option to use the supply budget (if any), which might have been previously specified for this scenario comparison.

d. Specify the option to use the indicated resource pools (if any), which were previously specified for this scenario comparison as part of the optimization constraints.

e. (Optional) To specify the highest average **Risk Rating** to allow for the lifecycle entities the optimizer will choose, select the check box and specify a value in the stated range for the **Average Risk must stay below** field. (For a definition of **Risk Rating,** see "Determining Value and Risk Ratings" on page 60.)

f. (Optional) To specify the lowest average **Value Rating** to allow for the lifecycle entities the optimizer will choose, select the check box and specify a value in the stated range for the **Average Value must stay above** field. (For a definition of **Value Rating,** see "Determining Value and Risk Ratings" on page 60.)

g. (Optional) To specify the highest average **Custom Field** value to allow for the lifecycle entities the optimizer will choose, select the **Custom Field Value** check box, select the **Average Custom Field must stay below** option, and specify a value in the stated range.

To specify the lowest average **Custom Field** value to allow for the lifecycle entities the optimizer will choose, select the **Custom Field Value** check box, select the **Average Custom Field must stay above** option, and specify a value in the stated range.

h. (Optional) To specify the minimum percentage of budget to be allocated to various business objectives:

    i. Select the **Business Objective Mix** check box.

    ii. Select a business objective from the **Business Objective** list that appears, and specify its minimum budget percentage in the **% Mix** field. To specify percentages for other business objectives in the list, if any, click **Add a Business Objective** and repeat this step.

    You need not specify minimum percentages for all of the business objectives—regardless of whether you specify a percentage for a particular business objective, the optimizer can select lifecycle entities that use the business objective if the lifecycle entities meet all your other constraints.

    The total of the percentages for the business objectives you specify must be 95% or less.

i. (Optional) To specify the minimum percentage of budget to be allocated to various project classes:

    i. Select the **Project Class Mix** check box.

    ii. Select a project class from the **Project Class** list that appears, and specify its minimum budget percentage in the **% Mix** field. To specify percentages for other project classes in the list, if any, click **Add a Project Class** and repeat this step.

    You need not specify minimum percentages for all of the project classes—regardless of whether you specify a percentage for a particular project class, the optimizer can select lifecycle entities that use the project class if the lifecycle entities meet all your other constraints.

    The total of the percentages for the project classes you specify must be 95% or less.

j. (Optional) To specify the minimum percentage of budget to be allocated to various asset classes:

    i. Select the **Asset Class Mix** check box.

    ii. Select an asset class from the **Asset Class** list that appears, and specify its minimum budget percentage in the **% Mix** field. To specify percentages for other asset classes in the list, if any, click **Add an Asset Class** and repeat this step.

You need not specify minimum percentages for all of the asset classes—regardless of whether you specify a percentage for a particular asset class, the optimizer can select lifecycle entities that use the asset class if the lifecycle entities meet all your other constraints.

The total of the percentages for the asset classes you specify must be 95% or less.

k. Click **Next**.

The second Optimize Scenario window (of two) appears, listing all the lifecycle entities in the scenario comparison.

l. Use the check boxes in the **Required?** column to specify which lifecycle entities you insist must be included in the scenario optimization, regardless of the effect of including them on maximizing the performance objective.

> **Note:** Regardless of your selections for the **Required?** column, if any of the scenario comparison's listed lifecycle entities specify any dependencies on any other listed lifecycle entities, the selections of the optimizer will adhere to those dependencies. In other words, the optimizer will prevent any dependency violations. However, the optimizer does not consider dependencies of lifecycle entities in the scenario comparison list upon lifecycle entities that are not in the list at all.

m. Use the check boxes in the **Allow new start date?** column to specify which of the proposals and projects that have not been started you will allow the optimizer to delay starting if doing so improves performance for the objective you chose. The optimizer always considers delays in

increments of one month, up to six months.

If the planned start date for a proposal or project is in the past, that proposal or project does not have the option to allow you to delay its start date. Assets do not have the option.

> **Note:** If the optimization delays the planned start dates for any lifecycle entities, the scenario reflects those delays, which are indicated by orange outlines around those lifecycle entities in the scenario's **Timeline** tab on the Scenario Details page. However, if you want to make the changes permanent, you must open the lifecycle entities themselves and change their start dates.

n. Click **Done** to close the second Optimize Scenario window and save the optimization settings.

> **Note:** The optimization does *not* run yet.

The Optimize Your Scenarios window reappears with new options.

o. In this window, do one of the following:

○ For the scenario whose optimization parameters you specified, click **Set to Manual** to return the scenario to manual control with no optimization parameter settings after all.

○ For the scenario whose optimization parameters you specified, click the **Modify Details**

link to change the optimization parameters.

- For a scenario that is Manual (a scenario that is not optimized and says **Currently this scenario is Manual**), a list of the optimized scenarios is available. Select one scenario from the list and click **Optimize With Copy** to copy that scenario's optimization parameters. Then you can revise the parameters to obtain a different optimization.

- For a scenario that is Manual, click **New Optimization** to specify a new set of optimization parameters for that scenario.

- Click **Done** to close the Optimize Your Scenarios window and refresh the browser for the Scenario Comparison page. You can view your optimization criteria on the **Optimization Details** tab that is added to the Scenario Details page for individual scenarios (described in detail later in this section).

  The optimizations have still not been run. You can click the scenario name to open a window that allows you to run the scenario's optimization.

- Click **Run All Optimizations** to run the optimizer against all the scenarios for which you specified optimization parameters. This is the only way to run the scenario optimization. Continue with step 4.

> **Note:** If you specify optimization parameters for a particular scenario but you do not actually run the optimization, the **Scenario Content** section of the Scenario Comparison page appears similar to "Figure 5-13. Scenario Content for an optimized scenario" on the next page, but the scenario's link indicates that the scenario is "Optimized - Not Run" and the selection of read-only check marks reflects previous manual selections.

4. The optimizer can take a considerable amount of time to run, depending on the amount of data it must process. A progress bar is displayed for each scenario that is being optimized.

   When the calculations are completed, the **View Scenario Comparison** button appears.

   > **Note:** If no combination of lifecycle entities can meet the set of constraints you specified, the optimizer cannot find a feasible solution. In this case, specify constraints that are less restrictive and run the optimization again.

5. Click **View Scenario Comparison.**

   The scenario comparison appears again, with optimization results available.

You can review the following optimization results:

- In the **Scenario Content** section of the Scenario Comparison page, all the check boxes for all the lifecycle entities of the optimized scenarios are replaced by read-only check marks or blank areas. These indicate, respectively, the optimizer's inclusion or exclusion of each lifecycle entity in the optimized scenarios, in keeping with the optimization criteria (including required lifecycle entities)

you specified in step 3 and any previously specified dependencies among the lifecycle entities in the scenario comparison. The order of the lifecycle entities (rows) is not changed. See "Figure 5-13. Scenario Content for an optimized scenario" below.

Figure 5-13. Scenario Content for an optimized scenario

- The data for the optimized scenarios are changed in the graphs on all the tabs of the Scenario Comparison page to reflect the lifecycle entities chosen by the optimizer according to your criteria.

  In particular, if you have previously generated the efficient frontier graph on the **Efficient Frontier** tab (see "Efficient Frontier Tab" on page 81), the graph shows data points for all three scenarios of the scenario comparison, regardless of whether you optimized all the scenarios. (The graph also shows the criteria you specified to generate the efficient frontier.)

  If the criteria for generating the efficient frontier and the optimized scenario were the same, the optimized scenario's data point should be on the efficient frontier curve. For more information about the positions of the scenario data points relative to the efficient frontier curve, see "Efficient Frontier Tab" on page 81.

- For each optimized scenario, wherever you allowed the optimizer to delay lifecycle entity start dates, the **Timeline** tab of the Scenario Details page is changed to reflect any such delays, as indicated by orange outlines around those lifecycle entities. (As with any scenario comparison, the start dates in the lifecycle entities themselves must be updated manually.)

- Lifecycle entities that the optimization excludes from the scenario are shown in the **Timeline** tab in the same manner as lifecycle entities excluded in manually specified scenario comparisons.

- Data on the **Role Availability** tab of the Scenario Details page for each optimized scenario changes to reflect the optimization results.

- On the **Optimization Details** tab of the Scenario Details page, the list of lifecycle entities is changed to include only the lifecycle entities identified by the optimization. The entities are sorted

from highest to lowest value of the optimization objective, such as NPV, indicating their relative leverage in the optimization toward maximizing your objective. The list also shows which lifecycle entities you specified as being required in the optimization. See "Figure 5-14. Optimization Details tab after scenario optimization" below.

The **Optimization Details** tab displays the criteria you specified in step b through step j. It also displays the optimizer's "actual" (calculated) percentages for all the defined types of business objectives, project classes, and asset classes. These percentages adhere to any minimum values you specified in step h through step j.

Figure 5-14. Optimization Details tab after scenario optimization

You can change the optimization criteria for this scenario (see "Changing an Existing Optimization" on the next page).

Changing an Existing Optimization

> **Note:** If you want to preserve an existing optimization and its criteria rather than changing them, first copy the optimization and then revise the copy as described in "Copying an Existing Optimization" below.

To modify and run an existing optimization:

1. Open the scenario comparison that has the optimized scenario you want to change. See "Listing and Viewing Scenario Comparisons" on page 87.

2. Near the top of the Scenario Comparison page, click **Optimize Scenarios.**

   The Optimize Your Scenarios window opens.

3. Click the **Modify Details** link for the optimized scenario you want to modify.

4. Revise the criteria on the two Optimize Scenario windows as desired. Start at step b in Runing a New Scenario Optimization.

Copying an Existing Optimization

While preserving the criteria used to generate an existing optimization, you might want to copy and revise the criteria and rerun the optimization to determine the effect of the different criteria. Perform this procedure to replace one of the scenarios that has not been optimized in the scenario comparison.

To copy and revise an existing optimization:

1. Open the scenario comparison that includes an optimized scenario and the scenario you want to optimize. See "Listing and Viewing Scenario Comparisons" on page 87.

2. Near the top of the Scenario Comparison page, click **Optimize Scenarios.**

The Optimize Your Scenarios window opens.

The scenarios in the scenario comparison that have not been optimized (the scenarios that say **Currently this scenario is Manual**) include a list of the scenarios that have been optimized and an **Optimize With Copy** button.

3. In one of the scenarios that has not been optimized (one you are willing to replace), select a previously optimized scenario from the drop-down list as the one to copy, and click **Optimize With Copy.**

The previous optimization criteria are copied and the copy is available to revise for the scenario to be optimized.

4. Revise the criteria on the two Optimize Scenario windows as desired. Start at step b in Running a New Scenario Optimization.

Changing the Content of an Optimized Scenario

You cannot directly edit an optimized scenario. However, to address new considerations, you can make the optimized scenario editable by clicking **Set to Manual** for that scenario on the Optimize Your Scenarios page. The lifecycle entity selections the optimizer made for this scenario become the defaults and serve as the basis for editing.

The **Optimization Details** tab for the scenario is no longer applicable and is removed.

Configuring Access Rights for Scenario Comparisons

Access to scenario comparisons and optimization is controlled at a system level through access *grants* set by administrators in security group definitions. Users are linked to access grants through the security groups to which they belong. For more information about access grants and security groups for scenario comparisons, see the *Security Model Guide and Reference* and the *HP Portfolio Management Configuration Guide.*

In addition, you can specify access *rights* for a list of users who can view a scenario comparison you created, edit its basic information, edit its contents, edit its security, or delete it, if the users have the appropriate system-level access grants.

The following sections describe how to provide users with view and edit access rights, using the scenario comparison's Configure Access page.

Configuring View Access for Users

To configure a list of users who can view a scenario comparison:

1. Open the scenario comparison of interest. See .

   If you have permission to modify access to the scenario comparison, the **More > Configure Access** button at the top of the Scenario Comparison page is enabled.

2. Click **More > Configure Access.**

   The Configure Access page for the selected scenario comparison opens. Users who are on the list in the **View Access** section on the left side of the window can view this scenario comparison.

3. To add a user or group of users to the list:

   a. Select a user or group of users from the **Give Access to Username** list. Use the icon to the right of the text box, and in the window that opens, click the names of the desired users in the **Available** column to move those names to the **Selected** column.

   b. Click **Add.**

      The users you added to the Configure Access page can view the scenario comparison.

4. To remove a user or group of users from the list so the user(s) no longer have view access to the scenario comparison:

   a. Select the check boxes to the left of their names (or click **Check All**).

   b. Click **Remove.**

5. On the Configure Access page, click **Save.**

To configure the editing capabilities of users on the list, see "Configuring Edit Access for Existing Users" below.

Configuring Edit Access for Existing Users

To configure which users have which editing capabilities for a scenario comparison:

1. Open the scenario comparison whose access you want to revise. See "Listing and Viewing Scenario Comparisons" on page 87.

   If you have permission to modify access to the scenario comparison, the **More > Configure Access** button at the top of the Scenario Comparison page is enabled.

2. Click **More > Configure Access.**

The Configure Access page for the selected scenario comparison opens. Users who are on the list in the **View Access** section on the left side of the window can view this scenario comparison.

The following table lists the editing fields you can specify for each user in the **Additional Editing Access** section on the right side of the Configure Access page.

| Field Name	Description
Edit Basic Information	Allows the user to edit the basic information fields in the top section of the **Scenario Comparison** page. Does *not* give access to edit the **Scenario Content** section. See "Changing a Scenario Comparison's Basic Information" on page 90.
Edit Contents	Allows the user to edit the **Scenario Content** section of the **Scenario Comparison** page. Does *not* give access to edit the basic information fields in the top section.
Edit Security	Allows the user to use the Configure Access page to edit viewing or security for the scenario comparison.
Delete this Comparison	Allows the user to delete the scenario comparison.

3. Configure each user's editing options for this scenario comparison by selecting and deselecting the options (check boxes) as needed.

4. Click **Save.**

Using Scenario Comparison Portlets

HP Portfolio Management provides portlets that are based on scenario comparisons. You can add these portlets to your PPM Dashboard. Among other filter criteria, you select one scenario comparison, and in most cases one of its scenarios, for use in the portlet.You can create adjacent portlets that use different filter criteria for the same scenario, or that use different scenarios you select from the same or different scenario comparisons.

For example, "Figure 5-15. Budget by Asset Class portlets comparing different scenarios" on the next page shows two Budget by Asset Class portlets comparing two scenarios from the same scenario comparison. (The portlet titles were manually edited to distinguish the scenarios as First Plan and Second Plan.)

Figure 5-15. Budget by Asset Class portlets comparing different scenarios
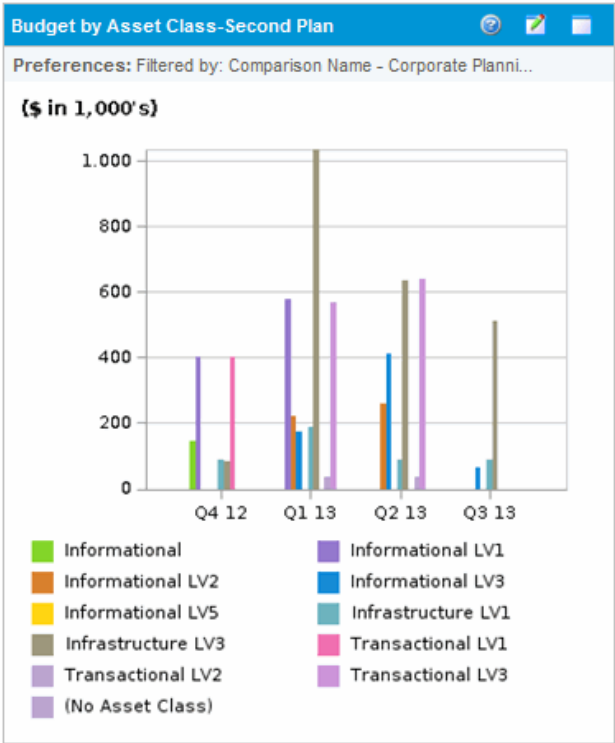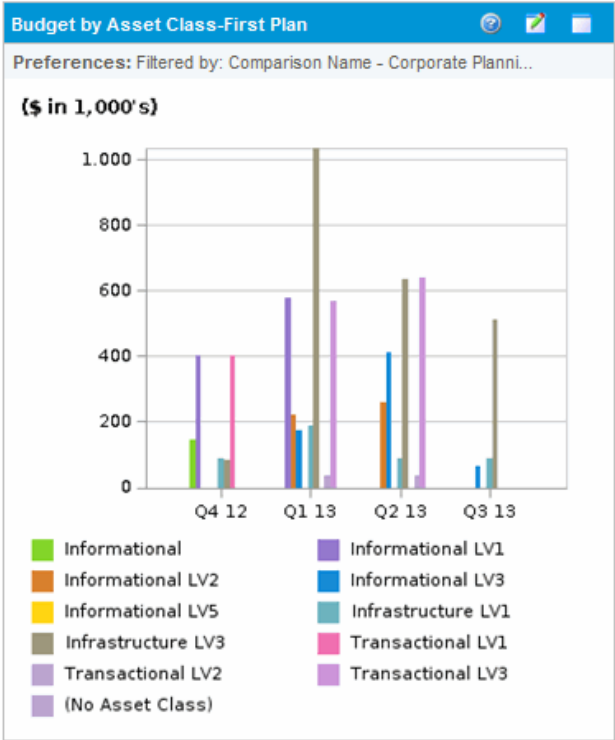
"Table 5-1. Scenario comparison portlets" on the next page describes the available scenario comparison portlets.

Table 5-1. Scenario comparison portlets

Portlet	Description
Budget by Asset Class	Similar to the graph in the Scenario Comparison page's **Budget by Asset Class** tab, but for only one scenario you select from a scenario comparison. See "Budget By Asset Class Tab" on page 78. Displays a bar chart with adjacent bars (one for each asset class) representing the budget for each period.
Budget by Business Objective	Similar to the graph in the Scenario Comparison page's **Budget by Business Objective** tab, but for only one scenario you select from a scenario comparison. See "Budget By Business Objective Tab" on page 80. Displays a bar chart with adjacent bars (one for each business objective) representing the budget for each period.
Budget by Project Class	Similar to the graph in the Scenario Comparison page's **Budget by Project Class** tab, but for only one scenario you select from a scenario comparison. See "Budget By Project Class Tab" on page 79. Displays a bar chart with adjacent bars (one for each project class) representing the budget for each period.
Budget Summary	Similar to the graph in the Scenario Comparison page's **Budget Summary** tab, but for only one scenario you select from a scenario comparison. See "Budget Summary Tab" on page 77. Displays capital expense and operating expense in a stacked bar chart.
Cost Benefit Analysis	Similar to the graph in the Scenario Comparison page's **Cost Benefit** tab, but for only one scenario you select from a scenario comparison. See "Cost Benefit Tab" on page 78. Displays a bar chart depicting the expected cost and the expected benefit per period.
Analyze Current Portfolio	See "Viewing the Portfolio with the Analyze Current Portfolio Portlet" on page 62.
Portfolio by *<Category>*	See "Viewing Portfolio Data with Portfolio By <Category> Portlets" on page 63.
Total Budget	Similar to the Cost Plan graph in the Scenario Comparison page's **Overview** tab. See "Overview Tab" on page 75. Shows the total budget each scenario will consume per period, along with the supply budget (if specified).
Total Resource	Similar to the Resource Plan graph in the Scenario Comparison page's **Overview** tab. See "Overview Tab" on page 75. Shows the total resource demand of each scenario per period, along with the total available resources (if specified).

For information about other portlets in the Portfolio Management, Financial Management, and other categories, see the *HP-Supplied Entities Guide.*

Appendix A: Financial Metrics

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Total Nominal Return

Monthly planned and actual nominal return are based on monthly planned and actual costs and benefits. The nominal return for any particular month is the difference between the benefit total for that month and the cost total for that month:

Nominal Return = Benefit – Cost

The **Nominal Return** and **Total Nominal Return** fields used in financial summaries and scenario comparisons are calculated from planned and actual costs and benefits over all the months that have any data. To determine *total* costs and *total* benefits over the entire time range, monthly contributions are based on values for each individual month, as follows:

- **For each previous month,** actual cost is used wherever it has been reported, that is, wherever the value is not blank or zero, otherwise forecast cost is used. Similarly, actual benefit is used wherever it has been reported, otherwise forecast benefit is used.

- **For the current month,** the *higher* of forecast and actual costs is used. Similarly, the *higher* of forecast and actual benefits is used.

- **For each future month,** forecast costs and forecast benefits are used.

These monthly amounts are summed to determine total benefits and total costs, and total nominal return is the difference:

Total Nominal Return = Total Benefits – Total Costs

Net Present Value (NPV)

Net present value (NPV) is total nominal return, discounted to its current value, based on a specified discount rate and the time allowed for the nominal return to be realized.

NPV is based on the financial summary. NPV is calculated using actual and forecast costs and benefits from all the months of the financial summary as described in .

For any *particular future* month:

$$NPV = (\text{Nominal Return}) / (1 + i/12)^n$$

where

n	represents the number of periods (months) from the current month.
Nominal Return	is calculated for month n as described in "Total Nominal Return" on the previous page.
i	represents the annual discount rate. For example, if the **Discount Rate** field (which by default is disabled) is specified as 6 to represent a 6% annual rate, the formula uses 0.06 for the value of i, then divides that by 12 to reflect the 12 months in a year.

PPM Center computes and reports *total* NPV, which is the sum of these values for all months—previous, current, and future—using each month's particular Nominal Return.

NPV for past and current months is meaningful for projects that are underway.

Only future months are discounted. Previous and current months use their Nominal Return values in calculating the sum.

Example of a Future Project

For example, consider a four-month future project that has forecast benefits and costs as shown in "Example of a Future Project" above and an annual discount rate of 6%, equivalent to a monthly rate of 0.5% or .005.

Table A-1. Example of NPV calculation

Month	Forecast Benefit	Forecast Cost	Forecast Benefit – Forecast Cost (Forecast Nominal Return)
May 2012	$100,000	$90,000	$10,000
June 2012	$120,000	$90,000	$30,000
July 2012	$140,000	$40,000	$100,000
August 2012	$140,000	$5,000	$135,000

As of March 2012, two months before the project starts, the total NPV is the sum of the following amounts (rounding off to the nearest dollar):

- $\$10,000 / (1.005)^2 = \$9,901$ for May

- $\$30,000 / (1.005)^3 = \$29,554$ for June

- $\$100,000 / (1.005)^4 = \$98,025$ for July

- $\$135,000 / (1.005)^5 = \$131,675$ for August

For this example, the total NPV is $269,155.

The total forecast nominal return for the four project months is $275,000.

Example of a Project That Is Underway

Now consider the same example when the current month (month 0) is June and the project is underway. Assume that the actual value for Benefit – Cost was as forecast for May and that, thus far in June, actual costs and actual benefits are lower than forecast costs and forecast benefits, so that the forecast data is used for June. Then, as of June, the total NPV is the sum of the following amounts (rounding off to the nearest dollar):

- $10,000 for May

- $30,000 for June

- $100,000 / (1.005)^1 = $99,502 for July

- $135,000 / (1.005)^2 = $133,660 for August

For this example, the total NPV is $273,162.

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If you have comments about this document, you can contact the documentation team by email. If an email client is configured on this system, click the link above and an email window opens with the following information in the subject line:

Feedback on Portfolio Management User's Guide (Project and Portfolio Management Center 9.30)

Just add your feedback to the email and click send.

If no email client is available, copy the information above to a new message in a web mail client, and send your feedback to HPSW-BTO-PPM-SHIE@hp.com.

We appreciate your feedback!