

HP Project and Portfolio Management Center

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HP Portfolio Management User's Guide

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This manual's title page contains the following identifying information:

- Software version number, which indicates the software version
- Document release date, which changes each time the document is updated
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HP Software Support

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1 Getting Started with HP Portfolio Management

In This Chapter:

- *Introduction to HP Portfolio Management*
 - *Related Information*
-

Introduction to HP Portfolio Management

HP Portfolio Management is an HP Project and Portfolio Management Center (PPM Center) application that provides a real-time view of your organization that supports your strategic, financial, functional, and technical governance requirements. HP Portfolio Management helps you align your IT portfolio—the collection of IT proposals, current projects, and established assets—with your business strategy and thereby maximize the portfolio’s value, for 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 collaboratively govern your portfolio with appropriate levels of review and approval. It monitors the entire portfolio life cycle—proposal justification and review, project initiation, execution, deployment, and benefits realization. It enables stakeholders to make better portfolio decisions by analyzing what-if scenarios using easy-to-build scenario comparisons, including running automated portfolio optimizations according to objectives you specify.

[Chapter 1, *Getting Started with HP Portfolio Management*, on page 11](#) (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 build a portfolio of proposals, projects, and assets, and create associated budgets, financial benefits, business objectives, and staffing profiles, as described in [Chapter 2, *Building Your Portfolio*, on page 15](#).
- You can analyze your current portfolio using various pages and portlets that slice the data several ways, and you can quantify benefits (values) and risks that determine portfolio scores, as described in [Chapter 3, *Viewing and Analyzing Your Portfolio*, on page 33](#). (Mathematical formulas for several financial metrics that HP Portfolio Management calculates are provided in [Appendix A, *Financial Metrics*, on page 101](#).)
- You can build comparisons of multiple scenarios and perform versatile what-if analyses having various objectives, and you can run automated scenario optimizations and generate efficient frontier graphs, as described in [Chapter 4, *What-If Analysis*, on page 45](#).

Related Information

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

- *HP Portfolio Management Configuration 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 all HP Portfolio Management portlets, request types, and workflows)

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

2 Building Your Portfolio

In This Chapter:

- *Overview of Building Your Portfolio*
 - *Creating Proposals*
 - *Creating Projects*
 - *Creating Projects from Proposals*
 - *Creating Projects from Scratch*
 - *Creating Assets*
 - *Creating Assets from Projects*
 - *Creating Assets from Scratch*
 - *Creating Budgets and Linking Them to Entities*
 - *Creating Financial Benefits and Linking Them to Entities*
 - *Creating and Updating Business Objectives and Linking Them to Entities*
 - *Creating Business Objectives and Linking Them to Entities*
 - *Updating Business Objectives*
 - *Creating Staffing Profiles and Linking Them to Entities*
-

Overview of Building Your Portfolio

This chapter explains how to use HP Portfolio Management to create proposals, projects, assets, budgets, financial benefits, business objectives, and staffing profiles.



In this document, for brevity, often the term “entity” is used to mean a proposal, a project, or an asset, and “entities” are any combination of proposals, projects, and assets.

A portfolio is automatically created when the first entity is created. All subsequent entities become part of the current portfolio.

Projects can be created from proposals or from scratch. Assets can be created from projects or from scratch.

Creating Proposals

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



If proposals do not operate as described in this guide, HP Portfolio Management 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 **Portfolio Management > Create a Proposal**.

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

Create New PFM - Proposal

Expand All Collapse All Submit

Header
Summary

Created By: David Jones

Driving Process: FFM - Proposal

Business Unit: Status: Not Submitted

Description:

Project Type: Region:

Proposal Dependencies:

Details
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:

Business Case Details

Budget:	(No Budget) <input type="text"/> Create	Expected Benefit:	(No Financial Benefit) <input type="text"/> Create	Staffing Profile:	(No Staffing Profile) <input type="text"/> Create
Return on Investment:	<input type="text"/>	Value Rating:	0	Risk Rating:	0
Score Adjustment:	<input type="text"/>	Total Score:	0		

Business Case Doc: (no document attached) Add

Requirements Doc: (no document attached) Add

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

Notes to be added on save:

References

Submit Cancel

3. Complete all required fields and any optional fields.

HP Portfolio Management can be configured such that you are required to create any combination of a budget, a staffing profile, and an expected financial benefit to attach to the proposal. See *Creating Budgets and Linking Them to Entities* on page 25, *Creating Financial Benefits and Linking Them to Entities* on page 27, and *Creating Staffing Profiles and Linking Them to Entities* on page 32 for information on creating these entities.

4. Click **Submit**.

The proposal begins its approval process.

Creating Projects from Proposals on page 18 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. All active projects count as part of the portfolio.

A project is created automatically when a proposal is approved, carrying over relevant information and entities (see *Creating Projects from Proposals* on page 18). You can also create projects from scratch (see *Creating Projects from Scratch* on page 20).

Creating Projects from Proposals

When a proposal is approved, by default a corresponding project is automatically created. The original budget, staffing profile, and financial benefit attached to the proposal are copied, and the copies are attached to the new project.



You can use the original proposal's budget, staffing profile, and financial benefit as a baseline to be compared with the project's budget, staffing profile, and financial benefit.

The proposal field values that are automatically copied into the project are described in [Table 2-1](#) (some fields get renamed for the project as indicated). All the fields in this table 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 they are displayed or not.

Table 2-1. Project fields copied from a proposal (page 1 of 2)

Field Name	Description
Summary section	
Business Unit	The business unit from which this project originated.
Details section, Project Details subsection	
Project Name (As a proposal, was Proposal Name)	The name of the project.
Project Class	The class of project to which this project belongs (for example, Innovation).
Asset Class	The class of asset to which this project belongs (for example, Infrastructure).
Business Objective	The business objective with which the project is aligned.
Project Manager	The manager of the project.
Details section, Business Case Details subsection	
Budget	The budget for the project.
Financial Benefit (As a proposal, was Expected Benefit)	The monetary benefit the project provides.
Staffing Profile	The resource demand of the project.
Return on Investment	The ROI for the project. (For a definition, see Return on Investment (ROI) on page 102.)
Value Rating	The total qualitative Value calculated for the project. (For a definition, see Determining Portfolio Scores on page 41.)
Risk Rating	The total qualitative Risk calculated for the project. (For a definition, see Determining Portfolio Scores on page 41.)
Net Present Value ^a	The NPV for the project. (For a definition, see Net Present Value (NPV) on page 102.)
Custom Field Value ^a	The custom financial metric being used to rank the project.

Table 2-1. Project fields copied from a proposal (page 2 of 2)

Field Name	Description
Score Adjustment	The 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	The total score (Value Rating – Risk Rating + Score Adjustment) calculated for the project.
Discount Rate ^a	The discount rate being applied for this project, if any. (For a definition, see <i>Net Present Value (NPV)</i> on page 102.)

a. By default, not displayed.

Creating Projects from Scratch

You can create projects from scratch, bypassing the proposal process. A project might have been underway before HP Portfolio Management was introduced in your environment.

To create a project from scratch:

1. Log on to PPM Center.
2. From the menu bar, select **Portfolio Management > Create a Project**.

Alternatively, if HP Project Management is installed, you can select **Project Management > Projects & Tasks > Create a Project**.

Create New Project

*Project Name:

*Project Type:

Project Manager: Admin User

*Planned Start Period:

*Planned End Period:

*Region: MercuryUS

Create

3. Complete all required fields and any optional fields.

HP Portfolio Management can be configured such that you are required to create any combination of a budget, a staffing profile, and a financial benefit to attach to the project. See *Creating Budgets and Linking Them to Entities* on page 25, *Creating Financial Benefits and Linking Them to Entities* on page 27, and *Creating Staffing Profiles and Linking Them to Entities* on page 32 for information on creating these entities.

4. Click **Create**.

The project is created. Its status is In Planning.

Creating Assets

An asset in HP Portfolio Management 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 count as part of the portfolio, and they should be tracked at an aggregate level such as ERP, rather than at the level of every application.

By default, HP Portfolio Management automatically creates an asset when a project is completed, carrying over relevant information and entities (see [Creating Assets from Projects on page 21](#)). You can also create assets from scratch (see [Creating Assets from Scratch on page 23](#)).

Creating Assets from Projects

When a project is completed, a corresponding asset is automatically created. The financial benefit attached to the project is copied, and the copy is attached to the new asset.



You can use the original project's budget, staffing profile, and financial benefit as a baseline to be compared with the asset's budget, staffing profile, and financial benefit.

The project field values that are automatically copied into the asset are described in [Table 2-2](#) (some fields get renamed for the asset as indicated). All the fields in this table 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 they are displayed or not.

Table 2-2. Asset fields copied from a project (page 1 of 2)

Field Name	Description
Summary section	
Business Unit	The business unit in charge of the portfolio that includes this asset.
Details section, Asset Details subsection	
Asset Name (As a project, was Project Name)	The name of the asset.
Asset Health (As a project, was Project Health)	The status of the asset.
Project Class	The class of project to which this asset belongs (for example, Innovation).

Table 2-2. Asset fields copied from a project (page 2 of 2)

Field Name	Description
Asset Class	The class of asset to which this asset belongs (for example, Infrastructure).
Business Objective	The business objective with which the asset is aligned.
Project	The project in HP Project Management that is associated with the asset.
Details section, Business Case Details subsection	
Budget	The budget for the asset.
Financial Benefit	The monetary benefit the asset provides.
Staffing Profile	The resource demand of the asset.
Return on Investment	The ROI for the asset. (For a definition, see Return on Investment (ROI) on page 102.)
Value Rating	The total qualitative Value calculated for the asset. (For a definition, see Determining Portfolio Scores on page 41.)
Risk Rating	The total qualitative Risk calculated for the asset. (For a definition, see Determining Portfolio Scores on page 41.)
Net Present Value ^a	If enabled, the NPV for the asset. (For a definition, see Net Present Value (NPV) on page 102.)
Custom Field Value ^a	If defined, the custom financial metric being used to rank the asset.
Score Adjustment	The 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	The total score (Value Rating – Risk Rating + Score Adjustment) calculated for the asset.
Discount Rate ^a	The discount rate being applied for this asset, if any. (For a definition, see Net Present Value (NPV) on page 102.)
^a . By default, not displayed.	

Creating Assets from Scratch

You can create assets from scratch, bypassing the proposal and project processes. An asset might have existed before HP Portfolio Management was introduced in your environment.

To create an asset from scratch:

1. Log on to PPM Center.
2. From the menu bar, select **Portfolio Management > Create an Asset**.

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

Create New PFM - Asset

[Expand All](#) [Collapse All](#) [Submit](#)

- Header
- Summary

Created By: David Jones

Driving Process: PFM - Asset

Business Unit: Status: Not Submitted

Description:

Asset Dependencies:

- Details
- 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

Budget: (No Budget) [Create](#) Financial Benefit: (No Financial Benefit) [Create](#) Staffing Profile: (No Staffing Profile) [Create](#)

Return on Investment: 0 Value Rating: 0 Risk Rating: 0

Score Adjustment: Total Score: 0

- 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

Notes to be added on save:

- References

[Submit](#) [Cancel](#)

3. Complete all required fields and any optional fields.

HP Portfolio Management can be configured such that you are required to create any combination of a budget, a staffing profile, and a financial benefit to attach to the asset. See *Creating Budgets and Linking Them to Entities* on page 25, *Creating Financial Benefits and Linking Them to Entities* on page 27, and *Creating Staffing Profiles and Linking Them to Entities* on page 32 for information on creating these entities.

4. Click **Submit**.

The asset becomes active.

Creating Budgets and Linking Them to Entities

A budget indicates an allocation of money between specific start and finish dates. Between these dates, the budget specifies the money available for each time period (usually a calendar month).

Budgets have many key aspects that can be configured:

- A budget can be associated with a proposal, project, or asset (an entity) in a one-to-one manner.
- A budget has lines that can be modified individually.
- Budget actuals can be set to roll up from:
 - The tasks in a project's work plan, if one exists
 - Time sheets, if HP Time Management and HP Project Management are installed and are integrated for the project
- A staffing profile can be synchronized with a particular budget so that the staffing profile governs the budget allowed for labor.
- A budget can have specific users allowed to access it.
- Budgets have statuses (New, Proposed, Under Review, and so forth) that can be updated.

By default, budget amounts are always entered in thousands. Budgets can also be entered in whole dollars by changing the `server.conf` parameter `BUDGET_IN_WHOLE_DOLLARS` to `True`. Usually, only PPM Center administrators have access to the `server.conf` file. Contact your system administrator with any questions about enabling use of whole dollars in budgets.



You can link an existing budget to a proposal, a project, or an asset, or create a budget that is linked to the entity, as follows:

- In a proposal, in the **Budget** field of the **Business Case Details** section, select an existing budget or click **Create**.
- In an asset, in the **Budget** field of the **Business Case Details** section, select an existing budget or click **Create**.

For a budget associated with an asset, you specify whether labor cost actuals are to be entered manually or are to be automatically rolled up from time logged on time sheets against that asset.

- To create a budget for a project, click **Create a Budget** on the **Project Summary** tab.

To link an existing unassigned budget to a project, from the menu bar select **Financial Management > Budgets > Modify Budgets**, then search for, select, and open the desired budget. In the **Budget Information** section of the Modify Budget window, click **Change**. In the Change Properties for Budget window, select the project to which this budget is to be assigned.

As described in *Analyzing Your Portfolio* on page 36, budgets can be used in various ways to control the bubble chart that represents your portfolio.

For detailed information on creating and working with budgets, see the *HP Financial Management User's Guide*.

Creating Financial Benefits and Linking Them to Entities

A financial benefit is used to track the monetary benefit (such as savings and revenue) that a proposal, project, or asset provides. It can also be used in a manner similar to budgets for analyzing the benefit of the current portfolio, as well as making decisions when building scenarios for what-if analyses.

Financial benefits provide a way to enter planned benefit values by period, while tracking actual (or realized) benefits alongside. Financial benefits support categorization by allowing multiple benefit lines to comprise a single benefit. Each line can be specified as either Savings or Revenue.

You can create financial benefits at any time and then link them to an HP Portfolio Management entity through the **Financial Benefit** field, or you can create them directly from the entity by clicking the icon next to the **Financial Benefit** field.

As described in [Analyzing Your Portfolio on page 36](#), financial benefits can be used in various ways to control the bubble chart that represents your portfolio.

To create a financial benefit:

1. Log on to PPM Center.
2. From the menu bar, select **Financial Management > Financial Benefits > Create a Financial Benefit**.

The Create New Financial Benefit page opens.

Create New Financial Benefit

*Financial Benefit Name:

*Region:

Time Range

*Start Period:

*Finish Period:

3. Complete all required fields and any optional fields.
4. Click **Continue**.

The Create New Financial Benefit: Enter Details page opens.

Create New Financial Benefit: Enter Details

Configure Access Create Cancel

Financial Benefit Information

Status: Active: Yes No

*Benefit Name:

Created On: August 7, 2006 Created By: David Jones

Description:

This Financial Benefit is for:

*Select Region:

Start Period: January 2007 Finish Period: March 2007

Financial Benefit Breakdown

Financial Benefit Status: New Show: Plan Only Plan and Actuals Enter Lines In: Months Quarters

Total Planned Benefit: \$0

Add Benefit Lines

Type	Category	Jan	Feb	Mar
Please use the Add button to add lines to this Financial Benefit.				
<input type="button" value="Remove Lines"/>				
Month Total		\$0	\$0	\$0
Quarter Total		\$0		

Breakdown from January 2007 to March 2007 (Numbers in Table in 000s)

Q1 2007			
Jan	Feb	Mar	

Notes

Notes to be added on save:

Configure Access Create Cancel

5. (Optional) Enter any desired information in the **Financial Benefit Information** section.
6. Add lines to the financial benefit:
 - a. Scroll down to the **Financial Benefit Breakdown** section.
 - b. Click **Add Benefit Lines**.

The Add Lines to Financial Benefit page opens.

Add Lines to Financial Benefit: CRM Realization

Name: CRM Realization Status: New

Financial Benefit Information

*Type: Category:

- c. Specify a **Type** and **Category** for the financial benefit line.
- d. Click **Add Another** if you want to add more lines.

When you have finished adding lines, click **Add**.

The Create a New Financial Benefit: Enter Details page opens again, with the new financial benefit lines added.

- 7. If you want to track actual amounts for your financial benefit alongside the planned amounts, in the **Show** field select the **Plan and Actuals** option and click **Apply**.

The Create a New Financial Benefit: Enter Details page reloads with separate **Plan** and **Act** columns for each month in the breakdown table, enabling you to specify actual values next to the planned amounts.

Create New Financial Benefit: Enter Details

[Configure Access](#) [Create](#) [Cancel](#)

Financial Benefit Information

Status: Active: Yes No

*Benefit Name:

Created On: August 7, 2006 Created By: David Jones

Description:

This Financial Benefit is for:

[View](#)

*Select Region: [View](#)

Start Period: January 2007 Finish Period: March 2007 [Change Periods](#)

Financial Benefit Breakdown

Financial Benefit Status: New Show: Plan Only Plan and Actuals Quarters Enter Lines In: Months Quarters [Apply](#)

Total Planned Benefit: \$0
Total Actual Benefit: \$0

[Add Benefit Lines](#)

Type	Category
<input type="checkbox"/> Savings	Maintenance
<input type="checkbox"/> Revenue	Service

[Remove Lines](#)

Breakdown from January 2007 to March 2007 (Numbers in Table in 000s)

Q1 2007					
Jan		Feb		Mar	
Plan	Act	Plan	Act	Plan	Act
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Month Total					
\$0	\$0	\$0	\$0	\$0	\$0
Quarter Total					
Plan: \$0 Actual: \$0					

Notes

Notes to be added on save:

[Configure Access](#) [Create](#) [Cancel](#)

8. Click **Create**.

You can link an existing financial benefit to a proposal, a project, or an asset, or create a financial benefit that is linked to the entity, as follows:

- In a proposal or an asset, in the **Financial Benefit** field of the **Business Case Details** section, select an existing financial benefit or click **Create**.
- In a project, in the **Financial Benefit** field in the **PFM Project** section on the **Project Details** tab, select an existing financial benefit or click **Create**.

Creating and Updating Business Objectives and Linking Them to Entities

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

As described in *Analyzing Your Portfolio on page 36*, business objectives can be used in various ways to control the bubble chart that represents your portfolio.

In addition, the Portfolio By Business Obj portlet, one of the Portfolio By *<Category>* portlets, displays bar charts of the budget breakdown by business objective over time; see *Viewing Portfolio Financial Data with Portfolio By <Category> Portlets on page 43*.

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 59*.

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

Creating Business Objectives and Linking Them to Entities

To create a business objective:

1. Log on to PPM Center.
2. From the menu bar, select **Portfolio Management > Business Objectives > Create a Business Objective**.

The Create New Business Objective page opens.

Create New Business Objective

Name:

State:

Owner:

Priority:

Description:

3. Complete all required fields and any optional fields.
4. Click **Create**.

The business objective is created.

In a proposal, project, or asset, you can link 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

To update a business objective:

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

Creating Staffing Profiles and Linking Them to 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 proposals, projects, and assets.

A staffing profile can be synchronized with a particular budget so that the staffing profile governs the budget allowed for labor.

As described in *Analyzing Your Portfolio* on page 36, staffing profiles (resources) can be used in various ways to control the bubble chart that represents your portfolio.

You can link an existing staffing profile to a proposal, a project, or an asset, or create a staffing profile that is linked to the 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**.
- To create a staffing profile from within a project, 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 **Project Management > Staffing Profiles > Search Staffing Profiles**, 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*.

3 Viewing and Analyzing Your Portfolio

In This Chapter:

- *Overview of Viewing and Analyzing Your Portfolio*
 - *Viewing Particular Entities in Your Portfolio*
 - *Analyzing Your Portfolio*
 - *Determining Portfolio Scores*
 - *Using Portfolio Management Portlets*
 - *Viewing the Portfolio with the Current Portfolio Map Portlet*
 - *Viewing Portfolio Financial Data with Portfolio By <Category> Portlets*
-

Overview of Viewing and Analyzing Your Portfolio

This chapter explains how to use HP Portfolio Management visualizations to view and analyze various aspects of your portfolio and particular proposals, projects, and assets.



In this document, for brevity, the term “entity” is often used to mean a proposal, a project, or an asset, and “entities” are any combination of proposals, projects, and assets.

You can view a bubble chart of your current portfolio or a filtered subset of it, where each bubble represents one 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 their size (**Budget** by default).

You can assign to an entity rankings of various qualitative criteria (which your administrator can modify) so that HP Portfolio Management can calculate an overall score for the 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 budget 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 Entities in Your Portfolio

To view a desired set of entities in your portfolio, and then a particular one:

1. Log on to PPM Center.
2. From the menu bar, select **Demand Management > Search Requests**.

The Search Requests page appears.

3. Click the auto-complete 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. For the request types that HP provides by default:

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

When a project is created using either the **Project Management** menu or the **Portfolio Management** menu in the menu bar, a project type must be selected. Each project type specifies which request type is to be associated with all projects of that project type.

- For assets, select the **PFM - Asset** request type.
5. (Optional) In the Search Requests page, complete any other filters as desired to limit the set of entities to display.
 6. Click **Search**.
 7. 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 Your Portfolio

The Analyze Current Portfolio page provides a simple and powerful tool for viewing your portfolio in different ways. Depending on how you configure its filter fields, selected aspects of the portfolio can be highlighted or hidden.

To view and analyze your current portfolio:

1. Log on to PPM Center.
2. From the menu bar, select **Portfolio Management > Analyze Current Portfolio**.

The Analyze Current Portfolio page opens, as shown in *Figure 3-1*. By default, the bubble chart on the Analyze Current Portfolio page displays no proposals and all currently active projects and assets in the portfolio with no restrictions, so that you can view them and assess their relative **Value** and **Risk**.

As described in *Table 3-1*, the **Filter By** section of the page includes filter fields you can use to configure the bubble chart's content and appearance as needed. The choices that have been previously made for some of the filter criteria, such as **Size of bubble indicates** and **Color of bubble indicates**, are listed above the chart.

3. (Optional) As desired, change the filter fields described in *Table 3-1* to view your portfolio in different ways.

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 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.

Figure 3-1. Analyze Current Portfolio page

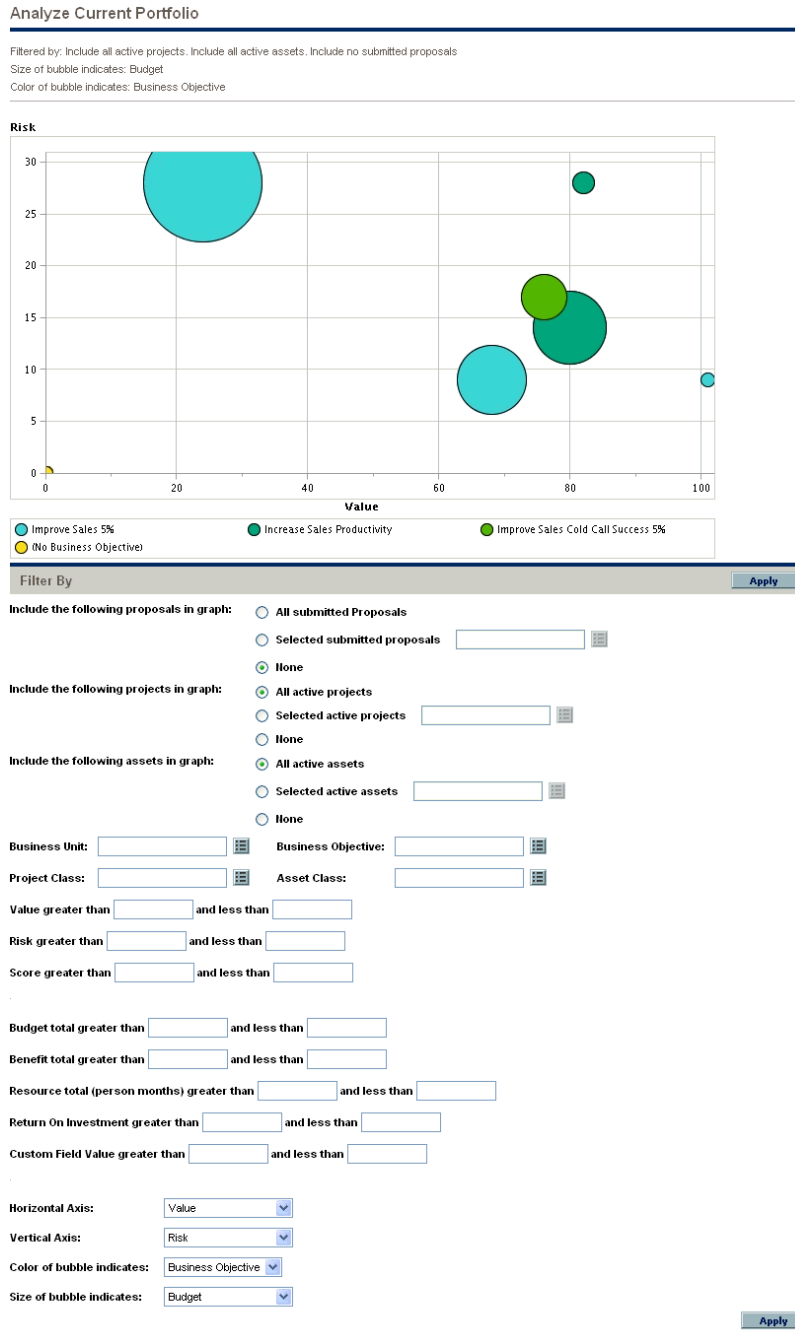


Table 3-1. Analyze Current Portfolio page filter fields (page 1 of 3)

Field Name	Description
Include the following proposals in graph	Selects the proposals to show in the bubble chart. Includes an option to select particular proposals.
Include the following projects in graph	Selects the projects to show in the bubble chart. Includes an option to select particular projects.
Include the following assets in graph	Selects the assets to show in the bubble chart. Includes an option to select particular assets.
Business Unit	Filters the entities by one or more particular business units.
Business Objective	Filters the entities by one or more particular business objectives.
Project Class	Filters the entities by one or more particular project classes.
Asset Class	Filters the entities by one or more particular asset classes.
Value greater than <X> and less than <Y>	Filters the entities by a range of Value Ratings you specify. (For a definition of Value Rating, see Determining Portfolio Scores on page 41.)
Risk greater than <X> and less than <Y>	Filters the entities by a range of Risk Ratings you specify. (For a definition of Risk Rating, see Determining Portfolio Scores on page 41.)
Score greater than <X> and less than <Y>	Filters the entities by a range of Total Scores you specify. (For a definition of Total Score, see Determining Portfolio Scores on page 41.)
Budget total greater than <X> and less than <Y>	Filters the entities by a range of total budgets you specify.
Benefit total greater than <X> and less than <Y>	Filters the entities by a range of specified financial benefits you specify.
Resource total (person months) greater than <X> and less than <Y>	Filters the entities by a range of their staffing profiles' resource totals you specify (in person months).
Return on Investment greater than <X> and less than <Y>	If this field is displayed, filters the entities by a range of ROI you specify. (For a definition of ROI, see Return on Investment (ROI) on page 102.)
Net Present Value greater than <X> and less than <Y>	If this field is displayed, filters the entities by a range of NPV you specify. (For a definition of NPV, see Net Present Value (NPV) on page 102.)
Custom Value greater than <X> and less than <Y>	If this field is displayed, filters the entities by a range of your installation's Custom Value you specify.

Table 3-1. Analyze Current Portfolio page filter fields (page 2 of 3)

Field Name	Description
Horizontal Axis	<p>Specifies the parameter used for the bubble chart's horizontal axis. The options are:</p> <ul style="list-style-type: none"> ■ Value. The Value Rating of the entity, as described in Determining Portfolio Scores on page 41; the default option. ■ Risk. The Risk Rating of the entity, as described in Determining Portfolio Scores on page 41. ■ Score. The Total Score of the entity, as described in Determining Portfolio Scores on page 41. ■ Budget. The budget of the entity. ■ Benefit. The financial benefit of the entity. ■ Resource. The staffing profile of the entity. ■ Return on Investment. If enabled, the return on investment (ROI) for the entity. For a definition of ROI, see Return on Investment (ROI) on page 102. ■ Net Present Value. If enabled, the net present value (NPV) for the entity. For a definition of NPV, see Net Present Value (NPV) on page 102. ■ Custom Field Value. If enabled, the Custom Field Value of the entity, as described in the <i>HP Portfolio Management Configuration Guide</i>.
Vertical Axis	<p>Specifies the parameter used for the bubble chart's vertical axis. The options are:</p> <ul style="list-style-type: none"> ■ Risk. The Risk Rating of the entity, as described in Determining Portfolio Scores on page 41; the default option. ■ Value. The Value Rating of the entity, as described in Determining Portfolio Scores on page 41. ■ Score. The Total Score of the entity, as described in Determining Portfolio Scores on page 41. ■ Budget. The budget of the entity. ■ Benefit. The financial benefit of the entity. ■ Resource. The staffing profile of the entity. ■ Return on Investment. If enabled, the return on investment (ROI) for the entity. For a definition of ROI, see Return on Investment (ROI) on page 102. ■ Net Present Value. If enabled, the net present value (NPV) for the entity. For a definition of NPV, see Net Present Value (NPV) on page 102. ■ Custom Field Value. If enabled, the Custom Field Value of the entity, as described in the <i>HP Portfolio Management Configuration Guide</i>.

Table 3-1. Analyze Current Portfolio page filter fields (page 3 of 3)

Field Name	Description
Color of bubble indicates	<p>Specifies what the various colors of the bubbles (entities) represent, as indicated in the legend below the bubble chart. The options are:</p> <ul style="list-style-type: none"> ■ Business Objective. The default option. ■ Asset Class. ■ Business Unit. ■ Health. ■ Project Class. ■ Type. Color indicates Proposal, Project, or Asset.
Size of bubble indicates	<p>Specifies what the various sizes of the bubbles (entities) represent. The options are:</p> <ul style="list-style-type: none"> ■ Budget. The budget of the entity; the default option. ■ Benefit. The financial benefit of the entity. ■ Resource. The staffing profile of the entity. ■ Value. The Value Rating of the entity, as described in Determining Portfolio Scores on page 41. ■ Risk. The Risk Rating of the entity, as described in Determining Portfolio Scores on page 41. ■ Score. The Total Score of the entity, as described in Determining Portfolio Scores on page 41. ■ Return on Investment. If enabled, the return on investment (ROI) for the entity. For a definition of ROI, see Return on Investment (ROI) on page 102. ■ Net Present Value. If enabled, the net present value (NPV) for the entity. For a definition of NPV, see Net Present Value (NPV) on page 102. ■ Custom Field Value. If enabled, the Custom Field Value of the entity, as described in the <i>HP Portfolio Management Configuration Guide</i>.

Determining Portfolio Scores

HP Portfolio Management 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 entity, as shown in the example in *Figure 3-2*. These fields appear in the **Details** section for the entity (which, for projects, is on the **Project Details** tab).

Figure 3-2. Qualitative scoring fields determine Total Score

The screenshot displays a 'Business Case Details' form with the following sections and data:

- Business Case Details**
 - Budget:** (No Budget)
 - Financial Benefit:** (No Financial Benefit)
 - Staffing Profile:** (No Staffing Profile)
 - Return on Investment:** 0
 - Value Rating:** 80
 - Risk Rating:** 14
 - Score Adjustment:**
 - Total Score:** 66
 - Business Case Doc:** (no document attached)
 - Requirements Doc:** (no document attached)
- Value Ratings**
 - Internal Rate of Return:** 10 - 14.99%
 - Strategic Match:** Direct achievement of a goal.
 - Competitive Advantage:** Provides moderate degree of outside access.
 - Competitive Response:** Can be postponed for 12 months with significant effect to competitive positioning.
 - Productivity:** 30 - 50% increase.
- Risk Ratings**
 - Organization Risk:** Medium low risk.
 - Technical Risk:** Medium uncertainty.
 - Architecture Risk:** Minor change to standard architecture.
 - Definition Risk:** Requirements are firm. No changes.
 - Infrastructure Risk:** Small changes to existing infrastructure.

When you complete these qualitative fields, HP Portfolio Management dynamically calculates and displays corresponding **Value Rating**, **Risk Rating**, and **Total Score** fields for the entity by:

- 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**.
- Adjusting the resulting score by the amount specified in the **Score Adjustment** field in the **Business Case Details** section. For example, an optimistic project sponsor might enter 10 in the **Score Adjustment** field, raising the score by 10 points. 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**.

Using Portfolio Management Portlets

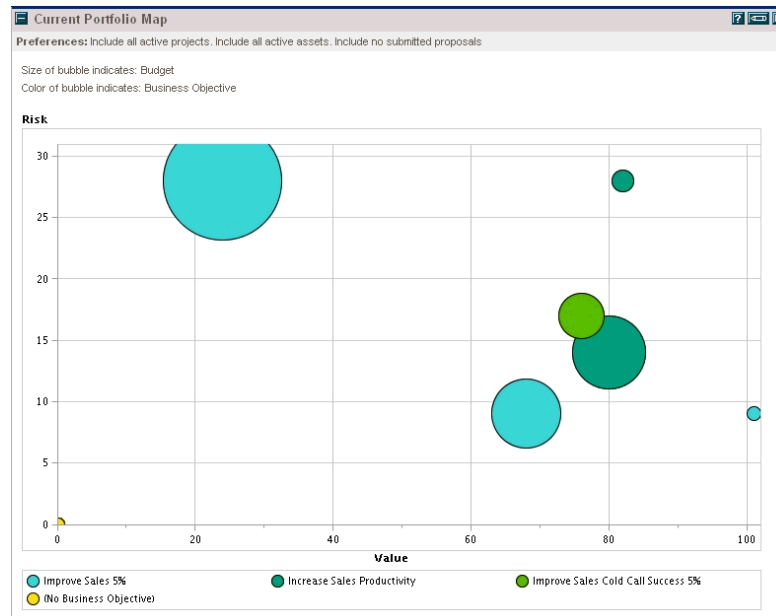
As described in the sections below, HP Portfolio Management provides several portlets you can add to your PPM Dashboard that allow you to view key aspects of your portfolio in real time. You can personalize these portlets to show the information you find most useful.

For information about other HP Portfolio Management portlets, see [Using Scenario Comparison Portlets on page 97](#) and the *HP-Supplied Entities Guide*.

Viewing the Portfolio with the Current Portfolio Map Portlet

The Current Portfolio Map portlet provides the same bubble chart as the Analyze Current Portfolio page. See [Figure 3-3](#).

Figure 3-3. Current Portfolio Map portlet



The preferences you can edit for this portlet are the same as the filter fields for the Analyze Current Portfolio page. See [Analyzing Your Portfolio](#) on page 36.

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 Financial Data with Portfolio By <Category> Portlets

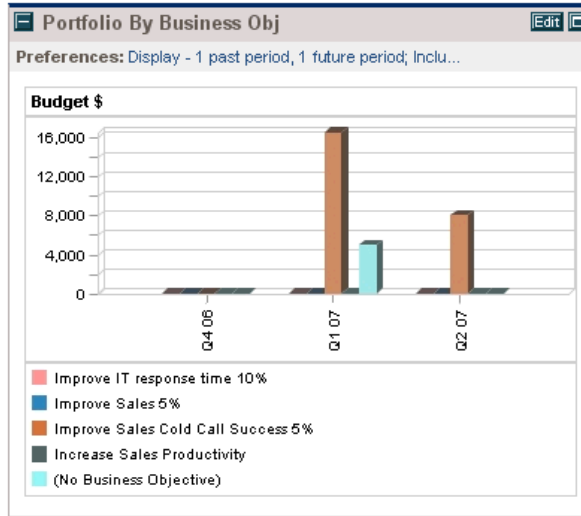
You can use Portfolio By <Category> portlets to analyze and aggregate financially significant values of your portfolio's contents, including budget, financial benefit, NPV, and ROI.

The specific Portfolio by <Category> portlets are:

- (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 3-4*.

Figure 3-4. Portfolio by Business Obj portlet



Clicking a bar in the chart opens a drill-down page detailing the budget by period for each entity that makes up the bar. See *Figure 3-5*.

Figure 3-5. Portfolio by Category Business Objective drill-down page

Portfolio by Category Business Objective: Improve Sales Cold Call Success 5%

Done

Budget Details by Period

Total Budget: \$24,000
**all numbers in the table are in 1000's

	Q4 06	Q1 07	Q2 07	Total
Proposals				
User Group Conference				\$0
Internal Training				\$0
Total	\$0	\$0	\$0	
Projects				
Hire EMEA Sales Force				\$0
Redeploy Sales People	\$0	\$10	\$3	\$13
Upgrade Telephone System	\$0	\$6	\$5	\$11
Total	\$0	\$16	\$8	

Done

4 What-If Analysis

In This Chapter:

- *Overview of What-If Analysis*
 - *Creating a Scenario Comparison*
 - *Overview of the Scenario Comparison Page*
 - *Reviewing Results (Tabs) of a Scenario Comparison*
 - *Overview Tab*
 - *Budget Summary Tab*
 - *Cost Benefit Tab*
 - *Budget By Asset Class Tab*
 - *Budget By Project Class Tab*
 - *Budget By Business Objective Tab*
 - *Efficient Frontier Tab*
 - *Viewing and Changing Scenario Comparisons*
 - *Listing and Viewing Scenario Comparisons*
 - *Changing a Scenario Comparison's Basic Information*
 - *Changing Scenario Content in a Scenario Comparison*
 - *Adding Notes to a Scenario Comparison*
 - *Deleting a Scenario Comparison*
 - *Copying a Scenario Comparison*
 - *Changing Individual Scenarios*
 - *Running Scenario Optimizations*
 - *Configuring Scenario Comparison Security*
 - *Using Scenario Comparison Portlets*
-

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 portfolio-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:

- 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



In this document, for brevity, often the term “entity” is used to mean a proposal, a project, or an asset, and “entities” are any combination of proposals, projects, and assets.

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.

Creating a Scenario Comparison

To create a scenario comparison:

1. Log on to PPM Center.
2. From the menu bar, select **Portfolio Management > Scenario Comparisons > Create a Scenario Comparison**.

The Create Scenario Comparison page opens.

The screenshot shows the 'Create Scenario Comparison' page with the following sections:

- Create Scenario Comparison** (Page Title)
- Comparison Information** (Section Header)
 - *Comparison Name: [Text Input Field]
- Enter Time Range** (Section Header)
 - *Start Period: [Dropdown Menu] (Current selection: October 2006)
 - *Finish Period: [Dropdown Menu] (Current selection: September 2007)
- Enter Scenario Names** (Section Header)
 - Please enter the names of the three scenarios in this scenario comparison. You will be able to change these names later.
 - *Scenario 1: [Text Input Field] (Current selection: Scenario 1)
 - *Scenario 2: [Text Input Field] (Current selection: Scenario 2)
 - *Scenario 3: [Text Input Field] (Current selection: Scenario 3)
- Specify Content** (Section Header)
 - Please use the following filters to select any proposals, projects and assets as a starting point for this scenario comparison. Regardless of your choice, you will be able to add and remove individual proposals, projects, and assets later.
 - [Show Advanced Filters](#)
 - Include Proposals:**
 - All submitted proposals
 - Selected submitted proposals [Text Input Field]
 - None
 - Include Projects:**
 - All active projects
 - Selected active projects [Text Input Field]
 - None
 - Include Assets:**
 - All active assets
 - Selected active assets [Text Input Field]
 - None
- Create** (Button)

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 entities will be included in the scenario comparison as specified in [step 6](#) and [step 7](#). 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, filter the set of entities, to be included in the scenario comparison. Later, you will specify which of these entities to include in each individual scenario. At a minimum, include in the scenario comparison all the entities you will want to include in any of its scenarios.

As a starting point for the scenario comparison, you can create a set of entities that reflects your current portfolio by including all submitted proposals, all active projects, and all active assets—the default settings. On the other hand, you can select particular proposals, projects, or assets to include in the scenario comparison. You can also choose to exclude all proposals, all projects, or all assets.

Before you create the scenario comparison, see also [step 7](#) for other options.

The set of entities that meet your filter criteria and are therefore included in the scenario comparison content is not affected by the time range you specified for the scenario comparison in [step 4 on page 47](#).

It is possible to create a scenario comparison for which an entity in the scenario comparison list depends on an 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 entities, or at least note the inconsistencies.

7. (Optional) You can further limit (filter) the set of entities to be included in the scenario comparison to those that meet more specific criteria, as follows:

- a. Click **Show Advanced Filters**.

The Create Scenario Comparison page expands to include additional filter criteria.

For example, the **Request Type** field allows you to filter on specific request types that are used for proposals, projects, and assets. (When a project is created using either the **Project Management** menu or the **Portfolio Management** 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.)

To hide the advanced filters again, click **Show Simple Filters**.

Create Scenario Comparison

Comparison Information	
Comparison Name:	Corporate Planning Scenarios
Enter Time Range	
Start Period:	October 2006
Finish Period:	June 2008
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:	Planning Proposal A
Scenario 2:	Planning Proposal B
Scenario 3:	Planning Proposal C
Specify Content	
Please use the following filters to select any proposals, projects and assets as a starting point for this scenario comparison. Regardless of your choice, you will be able to add and remove individual proposals, projects, and assets later.	
Show Simple Filters	
Include Proposals:	<input checked="" type="radio"/> All submitted proposals
	<input type="radio"/> Selected submitted proposals
	<input type="radio"/> None
Include Projects:	<input checked="" type="radio"/> All active projects
	<input type="radio"/> Selected active projects
	<input type="radio"/> None
Include Assets:	<input checked="" type="radio"/> All active assets
	<input type="radio"/> Selected active assets
	<input type="radio"/> None
Request Type:	Status:
Business Unit:	Business Objective:
Project Class:	Asset Class:
Value greater than:	and less than:
Risk greater than:	and less than:
Score greater than:	and less than:
Budget total greater than:	and less than:
Benefit total greater than:	and less than:
Resource total (person months) greater than:	and less than:
Return On Investment greater than:	and less than:
Net Present Value greater than:	and less than:
Custom Field Value greater than:	and less than:
<input type="button" value="Create"/> <input type="button" value="Cancel"/>	

- b. Complete the filter fields as desired to limit the entities to be included in the scenario comparison.

See *Determining Portfolio Scores* on page 41 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.

In the filter fields, any upper or lower limits you specify for the budget, benefit, or resource “totals” are applied to the totals for each entity across all of its time periods. The time range of the scenario comparison does not affect these filters.

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

8. Click **Create**.

An active scenario comparison is created and the Scenario Comparison page opens, as shown in the example in *Figure 4-1*.

In this example, the administrator has enabled use of Net Present Value as displayed in the **NPV** column of the **Scenario Content** section, and Custom Field Value as displayed in the **Custom Value** column. The administrator has not enabled Return on Investment; if he had, the **Scenario Content** section would have included an **ROI** column.

▶ If a project is underway, the scenario comparison uses all values of 0 or more that have been explicitly entered for budget and resource actuals for all previous periods. (Actuals are also used for assets.) If no values for actuals have been entered for particular previous periods (that is, their actuals fields remain blank), the scenario comparison uses the planned values for those periods.

9. Sort the scenario content list as desired by clicking any column heading.

10. The checkboxes in the rightmost columns indicate which entities are to be included in which of the three scenarios for comparison purposes. By default, all entities are selected for all three scenarios. To differentiate the scenarios to be compared, deselect the checkboxes as desired, as in the example in *Figure 4-1*.

▶ By default, scenarios in a scenario comparison are identical if they have the same set of entities selected. However, you can change the start date for any entity in a scenario (see *Adjusting Start Dates for Entities in a Scenario on page 77*), which is enough to make that scenario different from the others. This difference is not identified on the Scenario Comparison page.

▶ If entities A and B are in the **Scenario Content** list, if entity B was defined to depend on entity A, and if you deselect the checkbox for entity A without deselecting the checkbox for entity B (in other words, if you create a dependency violation within this scenario), the checkboxes for both entities become highlighted in red. However, no indication is provided for any dependency violation you create between any entity that is in the scenario comparison list and any entity that is not in the list at all.

Figure 4-1. Scenario Comparison page

Scenario Comparison: Corporate Planning Scenarios

[Make a Copy](#) [Configure Access](#) [Save](#)

Scenario Details: [1_Scenario 1](#); [2_Scenario 2](#); [3_Scenario 3](#) [Optimize Scenarios](#)

Comparison Name: **Created By:** David Jones **Last Updated By:** David Jones

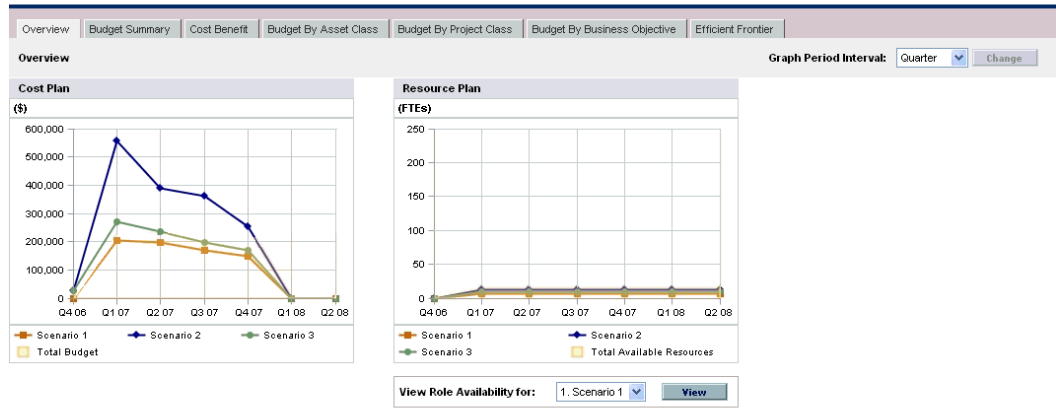
Active: Yes No **Last Updated On:** November 30, 2006

Description:

Calculate **Total Budget** for comparison from the following Budgets:

Calculate **Total Available Resources** for comparison from the following Resource Pools:

Start Period: **Finish Period:**



Scenario Content This scenario comparison contains 13 portfolio items. [Save](#)

Scenario Names: [1_Scenario 1](#); [2_Scenario 2](#); [3_Scenario 3](#)

Name Δ	Phase	Business Unit	Total Cost	Total Benefit	Total Resources (person months)	HPV	Custom Value	Score	Scenario		
									1	2	3
<input checked="" type="checkbox"/> Build new data center	Proposal	Corporate	\$79,000	\$255,000	24	\$176,000	10	47	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Build new office building	Proposal	Corporate	\$135,000	\$260,000	24	\$99,149	0	42	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> CIO's pet project	Proposal	Corporate	\$117,000	\$267,000	24	\$150,000	0	33	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Create Performance center of excellence	Proposal	Corporate	\$90,000	\$258,000	24	\$168,000	0	63	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Expand to China	Proposal	Corporate	\$107,000	\$261,000	24	\$154,000	0	38	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Expand to Europe	Proposal	Corporate	\$95,000	\$263,000	24	\$168,000	0	43	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Implement PPM	Proposal	Corporate	\$85,000	\$261,000	24	\$176,000	0	110	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Implement Paperless Office	Proposal	Corporate	\$214,000	\$203,000	24	(\$11,000)	0	(43)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Maintain CRM	Proposal	Corporate	\$186,000	\$242,000	24	\$56,000	0	30	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Maintain SOX compliance	Proposal	Corporate	\$153,000	\$200,000	24	\$47,000	0	9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Streamline Supply Chain	Proposal	Corporate	\$105,000	\$249,000	24	\$144,000	0	37	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Upgrade DB Version	Proposal	Corporate	\$120,000	\$250,000	24	\$130,000	0	31	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Wireless access for customers	Proposal	Corporate	\$120,000	\$247,000	24	\$127,000	0	49	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

■ Indicates a Dependency violation

[Add Content](#) [View Content List](#) [Save](#)

Notes

Notes to be added on save:

[Make a Copy](#) [Save](#) [Cancel](#)

Overview of the Scenario Comparison Page

The Scenario Comparison page has several major sections:

- At the top of the page are basic information fields for the scenario comparison. To revise these fields, see *Changing a Scenario Comparison's Basic Information on page 69*. In particular, you can specify for the scenario comparison a set of budgets and a set of resource pools, which you can compare against the sum of the budgets and resources associated with the entities in each individual scenario, in the **Overview** tab of the results below.
- 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 54*.
- The **Scenario Content** section lists the entities that meet the criteria you specified when you created the scenario comparison. The title bar states how many portfolio items (entities) are in the scenario comparison.

You can sort the content list as desired by clicking any column heading.

So that you can more easily view a long **Scenario Content** list, if you click **View Content List** at the bottom of the **Scenario Content** section, the same list appears in a separate window (but with the actual scenario names as the headings of the right-most columns, rather than **1**, **2**, and **3**).

You can change the list in many ways, including adding and removing entities from the entire scenario comparison, and differentiating the three scenarios by including and excluding different entities from the list. See *Viewing and Changing Scenario Comparisons on page 66*.

The columns of the **Scenario Content** section provide the following information for each entity:

- **Name.** The name of the entity, displayed as a link that allows you to open the entity.
- **Phase.** Whether the entity is a **Proposal**, a **Project**, or an **Asset**.
- **Business Unit.** The business unit specified for the entity, if any.
- **Total Cost.** The total cost for the entity—actual costs if entered for previous periods plus planned costs for the current and future periods.
- **Total Benefit.** The total financial benefit for the entity as specified in its attached financial benefit. Actual financial benefits that have been identified thus far replace the corresponding planned financial benefits.

- **Total Resources (person months).** The total number of person months available for the entity, as specified in its attached staffing profile.
- **ROI.** The return on investment for the entity (for a definition, see *Return on Investment (ROI)* on page 102.) This column is displayed only if the corresponding parameter has been enabled by an administrator, which is not the case in the example in *Figure 4-1*.
- **NPV.** The net present value for the entity (for a definition, see *Net Present Value (NPV)* on page 102.) This column is displayed only if the corresponding parameter has been enabled by an administrator.
- **Custom Value.** A custom financial metric specified by an administrator for the purpose of ranking the entity. This column is displayed only if the corresponding parameter has been enabled by an administrator.
- **Score.** The **Total Score** calculated for this entity. See *Determining Portfolio Scores* on page 41.
- **Scenario 1, 2, and 3.** A list of checkboxes that indicate which entities (rows) are included in or excluded from each scenario in the scenario comparison.
- 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 74.

Reviewing Results (Tabs) of a Scenario Comparison

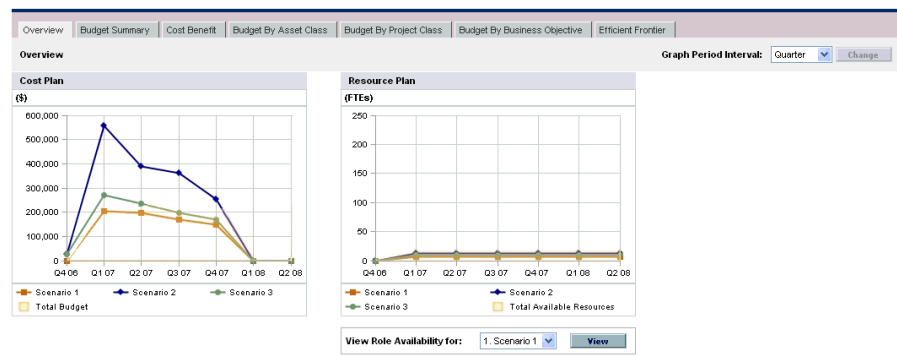
The results of a scenario comparison are presented in the Scenario Comparison page in a set of tabs, each of which is described in the following sections.

➤ If a project is underway, the scenario comparison uses all values of 0 or more that have been explicitly entered for budget and resource actuals for all previous periods. (Actuals are also used for assets.) If no values for actuals have been entered for particular previous periods (that is, their actuals fields remain blank), the scenario comparison uses the planned values for those periods.

Overview Tab

The **Overview** tab in the Scenario Comparison page provides an overview of the three scenarios in the scenario comparison. See [Figure 4-2](#).

Figure 4-2. Scenario Comparison page, Overview tab



Unlike most of the other tabs, the **Overview** tab integrates all three scenarios into each of its two visualizations, which are:

- **Cost Plan.** Each scenario line in the Cost Plan graph shows, for each period, the sum of the budgets attached to all the entities selected for that scenario.

If the **Calculate Total Budget for comparison from the following Budgets** field has been specified in the basic information section above the tabs, the graph includes the sum of those budgets as the Total Budget line, with solid color underneath. To specify this field, see [Changing a Scenario Comparison's Basic Information on page 69](#). The set of budgets you specify for the scenario comparison need not be related to the set of budgets attached to the entities in a scenario.

- **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 staffing profiles attached to all the 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 69. 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 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 81.



In any period, a scenario's budget or resource can exceed the available budget or resource specified for the scenario comparison. You can run a scenario optimization program with various options for objectives and constraints; the program ensures that the optimized scenario does not exceed the available budget and resource you specify. See *Running Scenario Optimizations* on page 83.

The graphs on all the tabs (except the **Efficient Frontier** tab) use a time interval. In fact, they all use the same time interval. To change it, on any of these tabs select a new value in the **Graph Period Interval** field and click **Change**. See *Figure 4-3*.

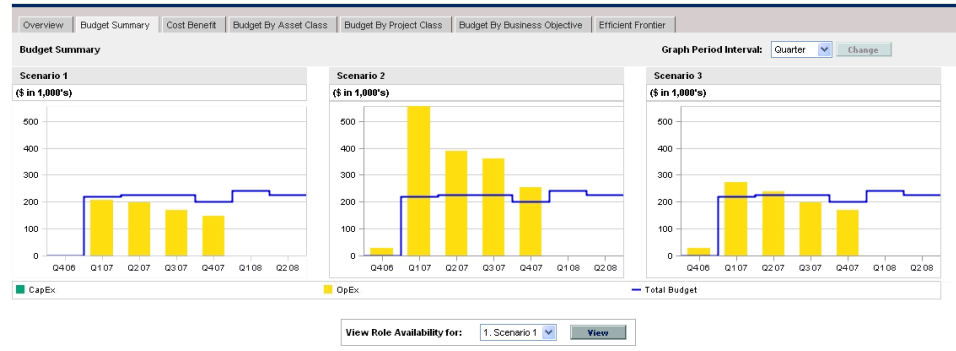
Figure 4-3. Graph Period Interval field

Graph Period Interval:	Month	<input type="button" value="Change"/>
	Quarter	
	Month	
	Half Year	
	Year	

Budget Summary Tab

The **Budget Summary** tab in the Scenario Comparison page provides a graph of the budget information for each scenario. See [Figure 4-4](#).

Figure 4-4. Scenario Comparison page, Budget Summary tab



Each graph displays capital expense and operating expense in a stacked bar chart. If a total available budget is specified for the scenario comparison, it is displayed as the capacity line. For details on how to specify a total available budget for a scenario comparison, see [Changing a Scenario Comparison's Basic Information](#) on page 69.



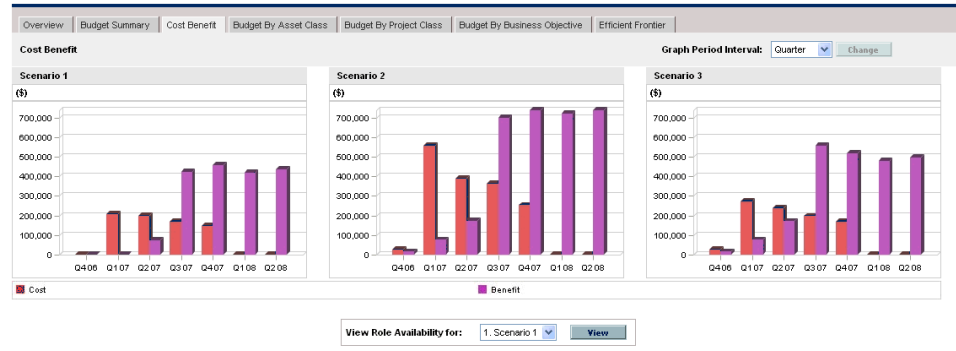
In any period, a scenario's budget can exceed the available budget. You can run a scenario optimization program with various options for objectives and constraints; the program ensures that the optimized scenario does not exceed the available budget you specify. See [Running Scenario Optimizations](#) on page 83.

To change the time interval used 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 4-3](#) on page 55).

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 4-5](#).

Figure 4-5. 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:

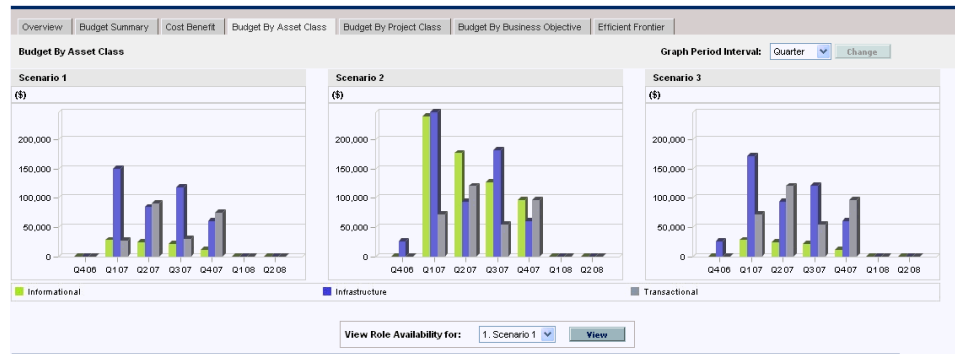
- The cost and benefit bars in each graph give information regarding the net benefit by period for each scenario.
- Since the graph is laid out by period, it also portrays the cost and benefit trends for each scenario.

To change the time interval used 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 4-3](#) on page 55).

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 4-6](#).

Figure 4-6. Scenario Comparison page, Budget By Asset Class tab



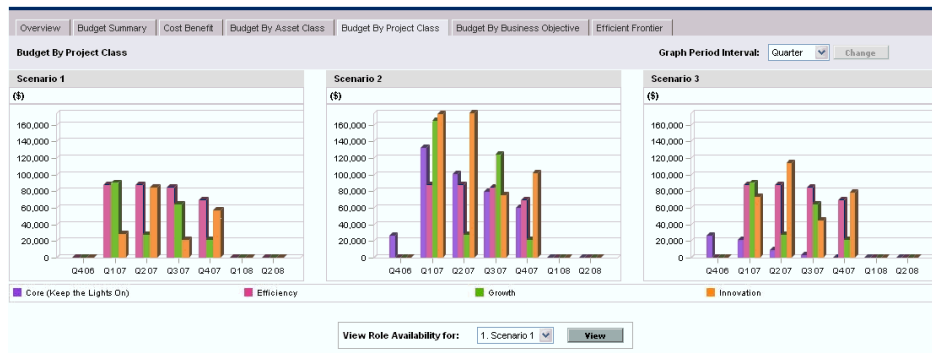
The graph for each scenario consists of a bar chart with adjacent bars (one for each asset class) in each period. These allow you, for each scenario, to compare the budget distribution among the various asset classes—Informational, Infrastructure, and Transactional.

To change the time interval used 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 4-3](#) on page 55).

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 4-7](#).

Figure 4-7. Scenario Comparison page, Budget By Project Class tab



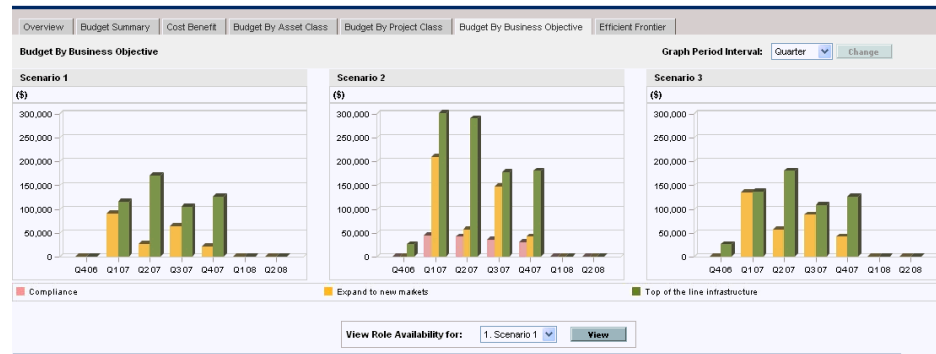
The graph for each scenario consists of a bar chart with adjacent bars (one for each project class) in each period. These allow you, for each scenario, to compare the budget distribution among the various project classes—Core (Keep the Lights On), Efficiency, Growth, and Innovation.

To change the time interval used 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 4-3* on page 55).

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 4-8*.

Figure 4-8. 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. These allow you, for each scenario, to compare the budget distribution among the various business objectives.

To change the time interval used 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 4-3* on page 55).

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 entities in the scenario comparison, the optimizer generates the efficient frontier curve.

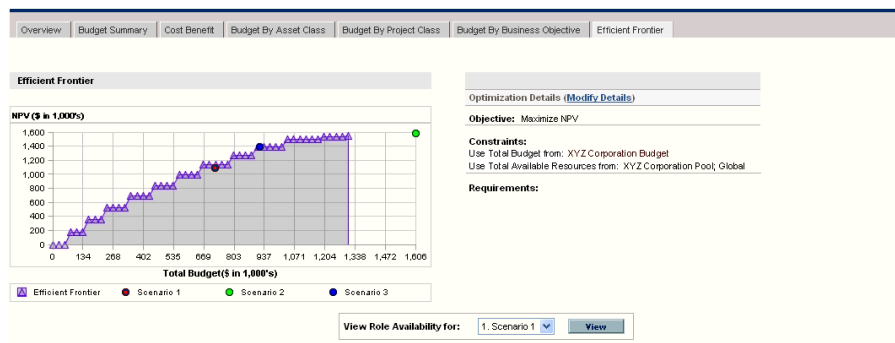
The section *Understanding the Efficient Frontier Graph* describes a generated efficient frontier graph. The section *Generating the Efficient Frontier Graph on page 62* describes how to specify the desired parameters and generate the graph.

Understanding the Efficient Frontier Graph

As shown in the example in *Figure 4-9*, 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.** This is collective net present value for the entities that the optimizer selects. For a definition, see *Net Present Value (NPV) on page 102*.
- **Total Score.** This is the collective Total Score for the entities that the optimizer selects. For information about how the Total Score for an entity is calculated, see *Determining Portfolio Scores on page 41*.
- **Value.** This is the collective Value Rating for the entities that the optimizer selects. For information about how the Value Rating for an entity is calculated, see *Determining Portfolio Scores on page 41*.

Figure 4-9. 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 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.



To generate the efficient frontier, the scenario comparison must have at least one budget specified in the **Calculate Total Budget for comparison from the following Budgets** field 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 budgets for all the 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 entities in this scenario comparison, will fall on or below the curve.

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

- The constraints you specified in the efficient frontier parameters (as described in the procedure in the next section) are stricter than those of the scenario, so they made the efficient frontier less successful than the scenario in meeting your objective at that scenario's budget level.
- The scenario as specified does not adhere to some limitation, such as available budget or resources, that is enforced in generating the efficient frontier.
- The efficient frontier curve has not been regenerated since the scenario was changed in such a way that its performance improved.



You can invoke the optimizer for any of the scenarios in a scenario comparison, to determine the best subset of all the entities in the scenario comparison to use for your performance objective. See [Running Scenario Optimizations on page 83](#). (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.

On the right side of the **Efficient Frontier** tab are reminders of 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 on page 62](#)).

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 66.
2. Click the **Efficient Frontier** tab.
3. 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.

The screenshot shows a software window titled "Efficient Frontier" with a close button in the top right corner. The window is divided into two main sections: "1. Set Objectives and Constraints" and "2. Select requirements for each Project". Under the first section, there is a sub-section "Objective to optimize:" with three radio button options: "Maximize NPV" (selected), "Maximize Total Score", and "Maximize Value". Below this, there is a section for resource constraints: "Use Total Budget from: XYZ Corporation Budget" and "Use Total Available Resources from: XYZ Corporation Pool, Global" (checked). There are three main constraint categories, each with a checkbox and a text input field: "Average Risk must stay below" (checkbox unchecked, range 0 to 20), "Average Value must stay above" (checkbox unchecked, range 0 to 110), and "Custom Field Value" (checkbox unchecked, range 0 to 0). Under "Custom Field Value", there are two radio button options: "Average Custom Field must stay below" and "Average Custom Field must stay above". At the bottom, there are three checkboxes for mix constraints: "Business Objective Mix", "Project Class Mix", and "Asset Class Mix", each with a "Check box to edit mix values." label. "Next" and "Cancel" buttons are located at the bottom right of the form area.

- a. Specify whether you want to maximize NPV, Total Score, or Value as the performance objective. See [Understanding the Efficient Frontier Graph](#) on page 60.
- b. Specify whether you want to use the indicated resource pool (if any) as part of the constraints.
- c. (Optional) If you want to specify the highest average **Risk Rating** to allow for the entities the optimizer will choose, select the checkbox and specify a value in the stated range for the **Average Risk must stay below** field. (For a definition of **Risk Rating**, see [Determining Portfolio Scores](#) on page 41.)

- d. (Optional) If you want to specify the lowest average **Value Rating** to allow for the entities the optimizer will choose, select the checkbox and specify a value in the stated range for the **Average Value must stay above** field. (For a definition of **Value Rating**, see *Determining Portfolio Scores* on page 41.)
- e. (Optional) If you want to specify the highest average **Custom Field** value to allow for the entities the optimizer will choose, select the **Custom Field Value** checkbox, select the **Average Custom Field must stay below** option, and specify a value in the stated range.

On the other hand, if you want to specify the lowest average **Custom Field** value to allow for the entities the optimizer will choose, select the **Custom Field Value** checkbox, select the **Average Custom Field must stay above** option, and specify a value in the stated range.

- f. (Optional) If you want to specify the minimum percentage of budget to be allocated to various business objectives:
 - i. Select the **Business Objective Mix** checkbox.
 - 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—whether or not you specify a percentage for a particular business objective, the optimizer can select entities that use it if they meet all your other constraints.

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

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

- i. Select the **Project Class Mix** checkbox.
- 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—whether or not you specify a percentage for a particular project class, the optimizer can select entities that use it if they meet all your other constraints.

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

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

- i. Select the **Asset Class Mix** checkbox.
- 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—whether or not you specify a percentage for a particular asset class, the optimizer can select entities that use it if they 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 entities for this scenario comparison.

Required?	Name Δ	Allow new start date?	Phase	Business Unit	Total Cost	Total Benefit	Total Resources (person months)	Score
<input type="checkbox"/>	Build new data center		Proposal	Corporate	\$79,000	\$255,000	24	47
<input type="checkbox"/>	Build new office building	<input checked="" type="checkbox"/>	Proposal		\$135,000	\$260,000	24	42
<input type="checkbox"/>	CIO's pet project	<input checked="" type="checkbox"/>	Proposal	Corporate	\$117,000	\$267,000	24	33
<input type="checkbox"/>	Create Performance center of excellence	<input checked="" type="checkbox"/>	Proposal	Corporate	\$90,000	\$258,000	24	63
<input type="checkbox"/>	Expand to China	<input checked="" type="checkbox"/>	Proposal	Corporate	\$107,000	\$261,000	24	38
<input type="checkbox"/>	Expand to Europe	<input checked="" type="checkbox"/>	Proposal	Corporate	\$95,000	\$263,000	24	43
<input type="checkbox"/>	Implement PPM	<input checked="" type="checkbox"/>	Proposal	Corporate	\$85,000	\$261,000	24	110
<input type="checkbox"/>	Implement Paperless Office	<input checked="" type="checkbox"/>	Proposal	Corporate	\$214,000	\$203,000	24	(43)
<input type="checkbox"/>	Maintain CRM	<input checked="" type="checkbox"/>	Proposal	Corporate	\$186,000	\$242,000	24	30
<input type="checkbox"/>	Maintain SOX compliance	<input checked="" type="checkbox"/>	Proposal	Corporate	\$153,000	\$200,000	24	9
<input type="checkbox"/>	Streamline Supply Chain	<input checked="" type="checkbox"/>	Proposal	Corporate	\$105,000	\$249,000	24	37
<input type="checkbox"/>	Upgrade DB Version	<input checked="" type="checkbox"/>	Proposal	Corporate	\$120,000	\$250,000	24	31
<input type="checkbox"/>	Wireless access for customers	<input checked="" type="checkbox"/>	Proposal	Corporate	\$120,000	\$247,000	24	49

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

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



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

The results of the efficient frontier generation do not indicate which of the 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.

If no combination of 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:

- 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

For information about access to view and edit scenario comparisons, see [Configuring Scenario Comparison Security on page 94](#).

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.

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

The Scenario Comparison page appears, as shown in the example in *Figure 4-10* on page 68.

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

- Log on to PPM Center.
- From the menu bar, select **Portfolio Management > Scenario Comparisons > List Scenario Comparisons.**

The Scenario Comparison List page appears.

Scenario Comparison List

Showing 1 - 4 of 4

Comparison Name	Description	Created By Δ	Created On	Last Updated By	Last Updated On
<input checked="" type="checkbox"/> Corporate Planning Scenarios		Admin User	November 30, 2006	Admin User	November 29, 2006
<input checked="" type="checkbox"/> XYZ Corp. Planning 2007		David Jones	November 1, 2006	David Jones	November 2, 2006
<input checked="" type="checkbox"/> XYZ Corp. Planning test 1		David Jones	November 1, 2006	David Jones	November 3, 2006
<input checked="" type="checkbox"/> Copy (1) Of XYZ Corp. Planning test 1		Henry Som	November 4, 2006	Henry Som	November 4, 2006

Showing 1 - 4 of 4

Filter By Apply

Created By:

Show Only Comparisons Updated In The Last: Month

Show Only Active Comparisons: Yes No

- (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.

- To reload the Scenario Comparison List page with the filters applied, click **Apply**.
- 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 4-10*.

Figure 4-10. Scenario Comparison page

Scenario Comparison: Corporate Planning Scenarios

[Make a Copy](#)
[Configure Access](#)
[Save](#)

Scenario Details: [1. Scenario 1](#), [2. Scenario 2](#), [3. Scenario 3](#) [Optimize Scenarios](#)

Comparison Name:
Created By: David Jones
 Last Updated By: David Jones

Active: Yes No
 Last Updated On: November 30, 2006

Description:

Calculate **Total Budget** for comparison from the following Budgets:

Calculate **Total Available Resources** for comparison from the following Resource Pools:

Start Period:
Finish Period:

Overview | Budget Summary | Cost Benefit | Budget By Asset Class | Budget By Project Class | Budget By Business Objective | Efficient Frontier

Overview Graph Period Interval: [Change](#)

Cost Plan (\$)

Resource Plan (FTEs)

View Role Availability for: [View](#)

Scenario Content This scenario comparison contains 13 portfolio items. [Save](#)

Scenario Names: [1. Scenario 1](#), [2. Scenario 2](#), [3. Scenario 3](#)

Name Δ	Phase	Business Unit	Total Cost	Total Benefit	Total Resources (person months)	NPV	Custom Value	Score	Scenario		
									1	2	3
<input checked="" type="checkbox"/> Build new data center	Proposal	Corporate	\$79,000	\$255,000	24	\$176,000	10	47	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Build new office building	Proposal	Corporate	\$135,000	\$260,000	24	\$99,149	0	42	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> CIO's pet project	Proposal	Corporate	\$117,000	\$267,000	24	\$150,000	0	33	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Create Performance center of excellence	Proposal	Corporate	\$90,000	\$258,000	24	\$168,000	0	63	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Expand to China	Proposal	Corporate	\$107,000	\$261,000	24	\$154,000	0	38	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Expand to Europe	Proposal	Corporate	\$95,000	\$263,000	24	\$168,000	0	43	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Implement PPM	Proposal	Corporate	\$85,000	\$261,000	24	\$176,000	0	110	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Implement Paperless Office	Proposal	Corporate	\$214,000	\$203,000	24	(\$11,000)	0	(43)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Maintain CRM	Proposal	Corporate	\$186,000	\$242,000	24	\$56,000	0	30	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Maintain SOX compliance	Proposal	Corporate	\$153,000	\$200,000	24	\$47,000	0	9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Streamline Supply Chain	Proposal	Corporate	\$105,000	\$249,000	24	\$144,000	0	37	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Upgrade DB Version	Proposal	Corporate	\$120,000	\$250,000	24	\$130,000	0	31	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Wireless access for customers	Proposal	Corporate	\$120,000	\$247,000	24	\$127,000	0	49	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

■ Indicates a Dependency violation

[Add Content](#)
[View Content List](#)
[Save](#)

Notes

Notes to be added on save:

[Make a Copy](#)
[Save](#) [Cancel](#)

The columns **ROI** (defined in *Return on Investment (ROI)* on page 102), **NPV** (defined in *Net Present Value (NPV)* on page 102), and **Custom Value** (a custom financial metric used to rank each entity) appear in the **Scenario Content** section only if corresponding parameters have been enabled for display by the administrator. In this example, **ROI** has not been enabled and **NPV** and **Custom Value** have been enabled.

Changing a Scenario Comparison's Basic Information

The basic information (top section) of the Scenario Comparison page contains fields that describe or specify parameters relating to the scenario comparison as a whole. Some of the fields were not available when the scenario comparison was first created. See *Figure 4-10* on page 68.

To change these fields:

1. Open the scenario comparison that has the basic information fields you want to change. See *Listing and Viewing Scenario Comparisons* on page 66.
2. Using the following table, change these fields as desired.

Field Name (*Required)	Description
Scenario Details	A set of links that open the detail pages for each scenario in the scenario comparison.
*Comparison Name	The name of the scenario comparison.
Created By	(Read-only) The user who created the scenario comparison.
Last Updated By	(Read-only) The user who last updated the scenario comparison.
Active	Flag 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) The date the scenario comparison was last updated.
Description	The description for the scenario comparison.

Field Name (*Required)	Description
Calculate Total Budget for comparison from the following Budgets	The set of budgets whose total will be displayed as the Total Budget line in the Cost Plan graph of the scenario comparison's Overview tab. These budgets need not be related to the set of budgets attached to the entities in a scenario.
Calculate Total Available Resources for comparison from the following Resource Pools	The set of resource pools whose total resources will be 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 entities in a scenario.
*Start Period	The start period for the scenario comparison.
*Finish Period	The 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*. In addition, you can use this page to access and change an *individual scenario*.

Selecting Entities in a Scenario Comparison for Use in a Scenario

The **Scenario Content** section of the Scenario Comparison page lists all of the entities (proposals, projects, and assets) currently in the scenario comparison. The contents of each individual scenario in the scenario comparison are controlled by the checkboxes under the scenario numbers **1**, **2**, or **3**. See *Figure 4-10* on page 68.

To change the contents of a particular scenario, using 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 66.
2. Scroll down to the **Scenario Content** section.

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

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

4. Click **Save**.

Adding Entities to a Scenario Comparison and to its Scenarios

The **Scenario Content** section of the Scenario Comparison page lists all of the entities currently in the scenario comparison. You can add others as needed.

To add entities to the **Scenario Content** section:

1. Open the scenario comparison you want to change. See *Listing and Viewing Scenario Comparisons* on page 66.
2. Scroll down to the **Scenario Content** section.
3. Click **Add Content**.

The Add New Scenario Content window opens, with simple filters for selecting entities.

hp Close Window X

Add New Scenario Content

Search For Scenario Content To Add [Show Advanced Filters](#)

Include Proposals: All submitted proposals
 Selected submitted proposals
 None

Include Projects: All active projects
 Selected active projects
 None

Include Assets: All active assets
 Selected active assets
 None

*Sort By: Name Ascending Descending

*Maximum Results Per Page:

4. (Optional) Click **Show Advanced Filters** to expand the list of criteria you can use to limit the set of entities that are added to the **Scenario Content** list.

The Add New Scenario Content page expands to include additional filter criteria.

For example, the **Request Type** field allows you to filter on specific request types that are used for proposals, projects, and assets. (When a project is created using either the **Project Management** menu or the **Portfolio Management** 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.)

To hide the advanced filters again, click **Show Simple Filters**.

The screenshot displays the 'Add New Scenario Content' interface. At the top, there is a search bar labeled 'Search For Scenario Content To Add' and a 'Show Simple Filters' button. Below this, the 'Include' section has three categories: 'Include Proposals', 'Include Projects', and 'Include Assets'. Each category has radio buttons for 'All' and 'Selected' entities, with a text input field for the 'Selected' option. The 'Request Type' field is highlighted. Below these are various numerical filters for 'Status', 'Business Unit', 'Business Objective', 'Project Class', 'Asset Class', 'Value', 'Risk', 'Score', 'Budget total', 'Benefit total', 'Resource total (person months)', 'Return On Investment', and 'Net Present Value'. At the bottom, there is a 'Sort By' dropdown set to 'Name', radio buttons for 'Ascending' and 'Descending', and a 'Maximum Results Per Page' field set to '50'. A 'Search' button is located at the bottom right.

5. Specify the criteria for the entities you want to add to the **Scenario Content** list.
6. From the **Sort By** list, specify the order for the additional entities to appear at the end of the scenario content list, and whether they are to appear in ascending or descending order. Also specify the **Maximum Results Per Page** field.
7. Click **Search**.

Entities that meet your new criteria and that are not already in the scenario content list are displayed with checkboxes in the new **Select Scenario Content To Add** section at the top of the Add New Scenario Content window.
8. Select individual checkboxes or click **Check All**, then click **Add** to add the new entities to the end of the scenario content list.

The Add New Scenario Content window closes and the new entities you selected are added to the end of the scenario content list in the **Scenario Content** section of the Scenario Comparison page.
9. To differentiate the scenarios to be compared in regard to the added entities, deselect the checkboxes in the scenario columns as desired.
10. Sort the entire list in the **Scenario Content** section as desired by clicking any column heading.
11. When the scenario comparison is specified as you want, click **Save**.

Deleting Entities from a Scenario Comparison

To delete entities from a scenario comparison (and all its scenarios) entirely:

1. Open the scenario comparison that has entities you want to delete. See [Listing and Viewing Scenario Comparisons on page 66](#).

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

2. Delete entities from the scenario comparison as needed by clicking the **Delete** icons to the left of the entities.

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 66.
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 **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 *Listing and Viewing Scenario Comparisons* on page 66.
2. At the top of the Scenario Comparison page, click **Make a Copy**.

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

If a scenario optimization was run against a scenario in the original comparison, the default selection of entities to include in the copy of that scenario is the set the optimizer chose. However, in the copy you can select and deselect that scenario’s 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 entities to the scenario
- Delete entities from the scenario
- Change the name of the scenario
- Adjust the planned start dates of entities as specified for a particular scenario, if no actual start date has been specified
- View the details of a particular entity
- View role availability and requirements for the scenario

Adding Entities to a Scenario

See *Selecting Entities in a Scenario Comparison for Use in a Scenario* on page 70 for information about adding an entity in a scenario comparison to a particular scenario.

Deleting Entities from a Scenario

See *Selecting Entities in a Scenario Comparison for Use in a Scenario* on page 70 for information about deleting an entity from a particular scenario in a 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 66.

2. In the **Scenario Details** field near the top of the Scenario Comparison page, click the link that names the desired scenario.

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

Scenario Details: Scenario 3

Scenario Name: Scenario 3 Save

Comparison Name: Corporate Planning Scenarios

Description:

Start Period: October 2006 Finish Period: June 2008

Calculate Total Budget for comparison from the following Budgets: XYZ Corporation Budget

Calculate Total Available Resources for comparison from the following Resource Pools: Global, XYZ Corporation Pool

Timeline Role Availability

Scenario 3 Timeline Order By: Name Apply View: Full Scen. Comparison Content

Click on Bar to Change Scenario Start Dates, Remove from Scenario or View Details.

2006	2007	2008
Q 3	Q 1	Q 1
Q 4	Q 2	Q 2
	Q 3	Q 3
	Q 4	Q 4

Build new data center

Expand to Europe

Streamline Supply Chain

Scenario Content

Project Proposal Asset Scenario Start Date Changed Not currently included in Scenario

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

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



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

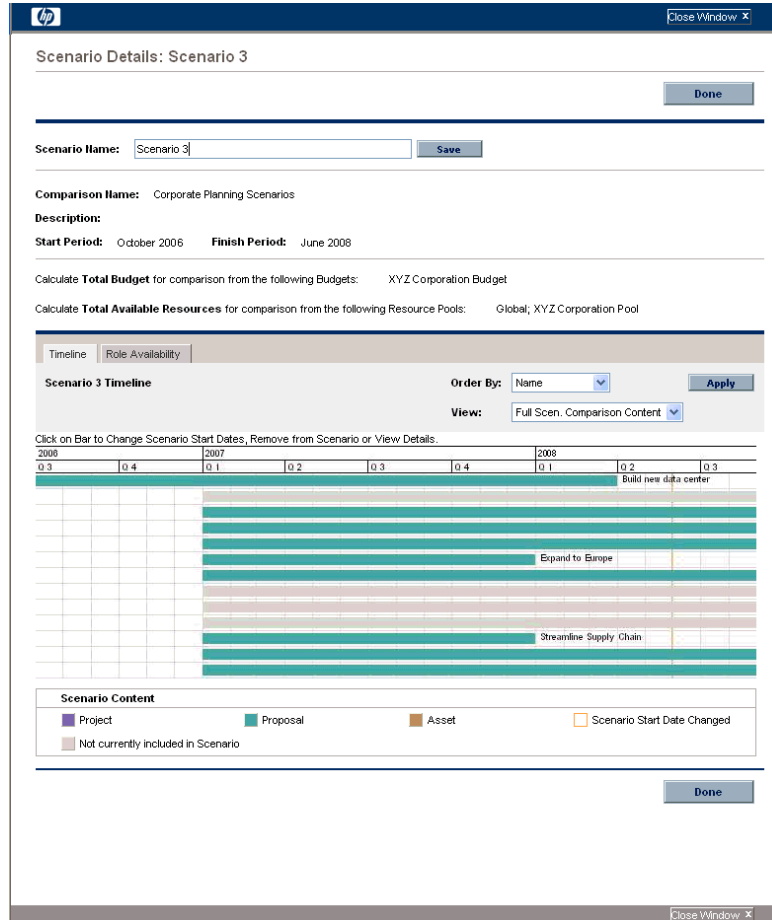
For example, the person who manages a portfolio changes the start date for his Expand to Europe proposal on the **Timeline** tab to accommodate some scheduling conflicts. He likes the way it fits, so he opens the Expand to Europe proposal and changes its **Expected Start Date** to match the scenario.

When the date for an entity (a proposal, project, or asset) is changed in the entity itself, the dates for the entity's associated budget, staffing profile, and financial benefit are automatically updated accordingly. (However, conversely, changing the dates for a budget, staffing profile, or financial benefit does *not* automatically change the dates for any associated entity.)

To change the dates for an 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 66.
2. In the **Scenario Details** field on the Scenario Comparison page, click the link that names the desired scenario.

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



Scenario Details: Scenario 3

Scenario Name: Scenario 3 Save

Comparison Name: Corporate Planning Scenarios
Description:

Start Period: October 2006 Finish Period: June 2008

Calculate **Total Budget** for comparison from the following Budgets: XYZ Corporation Budget

Calculate **Total Available Resources** for comparison from the following Resource Pools: Global; XYZ Corporation Pool

Timeline Role Availability

Scenario 3 Timeline Order By: Name Apply
View: Full Scen. Comparison Content

Click on Bar to Change Scenario Start Dates, Remove from Scenario or View Details.

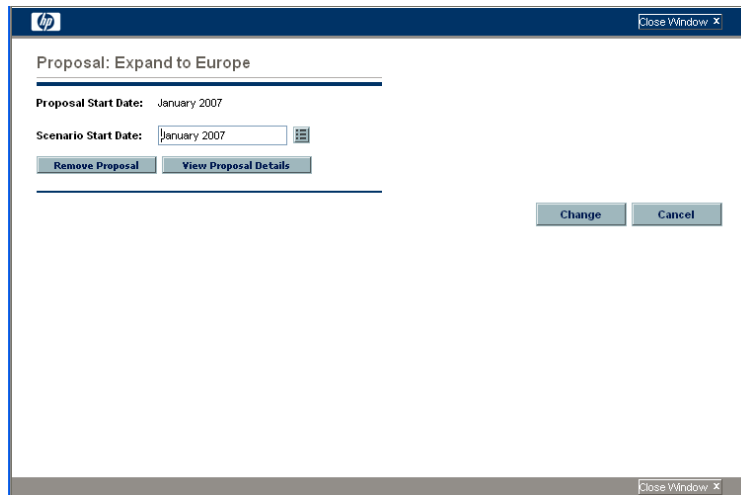
2006	2007				2008			
Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3

Scenario Content

Project
 Proposal
 Asset
 Scenario Start Date Changed
 Not currently included in Scenario

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

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



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

5. Click **Change**.

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

6. Repeat [step 3](#) through [step 5](#) for other entities as desired.

7. Click **Done**.

Viewing the Details of an Entity

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

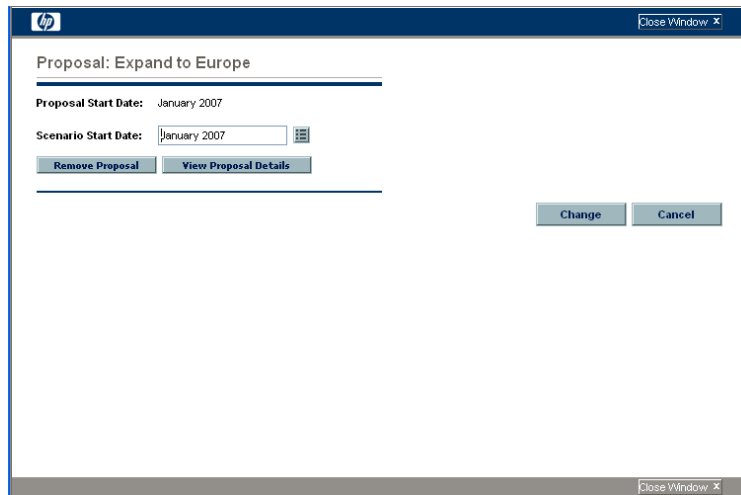
1. Open a scenario comparison that includes the scenario you want to change. See *Listing and Viewing Scenario Comparisons* on page 66.
2. In the **Scenario Details** field on the Scenario Comparison page, click the link that names the desired scenario.

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

The screenshot shows the 'Scenario Details: Scenario 3' page. At the top, there is a 'Done' button. Below that, the 'Scenario Name' is 'Scenario 3' with a 'Save' button. The 'Comparison Name' is 'Corporate Planning Scenarios'. The 'Description' is empty. The 'Start Period' is 'October 2006' and the 'Finish Period' is 'June 2008'. Below this, it says 'Calculate Total Budget for comparison from the following Budgets: XYZ Corporation Budget' and 'Calculate Total Available Resources for comparison from the following Resource Pools: Global, XYZ Corporation Pool'. The 'Timeline' tab is selected, showing a Gantt chart for 'Scenario 3 Timeline' from 2006 to 2008. The chart has columns for quarters (Q3, Q4, Q1, Q2, Q3, Q4, Q1, Q2, Q3) for each year. Three items are visible: 'Build new data center' (green bar, Q3 2006 to Q2 2007), 'Expand to Europe' (green bar, Q1 2007 to Q4 2007), and 'Streamline Supply Chain' (green bar, Q1 2008 to Q2 2008). A legend at the bottom identifies colors: Project (purple), Proposal (green), Asset (brown), Scenario Start Date Changed (orange), and Not currently included in Scenario (grey). There are 'Done' buttons at the top and bottom of the page.

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

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



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

The 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 4-11](#).

To view the role availability information for a scenario, on the Scenario Comparison page (see [Listing and Viewing Scenario Comparisons on page 66](#)), 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 4-11. Scenario Details page, Role Availability tab

Scenario Details: Scenario 3

Scenario Name: Scenario 3 Save

Comparison Name: Corporate Planning Scenarios

Description:

Start Period: October 2006 Finish Period: June 2008

Calculate Total Budget for comparison from the following Budgets: XYZ Corporation Budget

Calculate Total Available Resources for comparison from the following Resource Pools: Global, XYZ Corporation Pool

Timeline Role Availability

Role Availability Details for Scenario:31302

Showing remaining capacity for scenario: 31302, derived by subtracting required FTE's from Available FTE's, by Role

Available FTE's are specified by Resource Pools: Global, XYZ Corporation Pool

Role	Oct 06	Nov 06	Dec 06	Jan 07	Feb 07	Mar 07	Apr 07	May 07	Jun 07	Jul 07	Aug 07	Sep 07	Oct 07	Nov 07	Dec 07	Jan 08	Feb 08	Mar 08	Apr 08	May 08	Jun 08
DBA	60	60	60	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Developer	60	60	60	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55
Total FTE Required	0	0	0	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Total FTE Available	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
Resource Difference	120	120	120	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111

If you click the arrow to the right 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 4-12*.

Figure 4-12. Role requirement drill-down page

DBA Requirement for Scenario:

DBA Capacity is specified by Resource Pools: Global, XYZ Corporation Pool

Proposals	Oct 06	Nov 06	Dec 06	Jan 07	Feb 07	Mar 07	Apr 07	May 07	Jun 07	Jul 07	Aug 07	Sep 07	Oct 07	Nov 07	Dec 07	Jan 08	Feb 08	Mar 08	Apr 08	May 08	Jun 08
Implement IT Governance	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Build new data center	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Expand to Europe	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Create Performance center of excellence	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Proposal Totals	0	0	0	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Total FTE Required	0	0	0	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Total FTE Available	0	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Resource Difference	0	60	60	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56

Running Scenario Optimizations

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

- **NPV.** This is collective net present value for the entities that the optimizer selects. For a definition, see *Net Present Value (NPV)* on page 102.
- **Total Score.** This is the collective Total Score for the entities that the optimizer selects. For information about how the Total Score for an entity is calculated, see *Determining Portfolio Scores* on page 41.
- **Value.** This is the collective Value Rating for the entities that the optimizer selects. For information about how the Value Rating for an entity is calculated, see *Determining Portfolio Scores* on page 41.

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



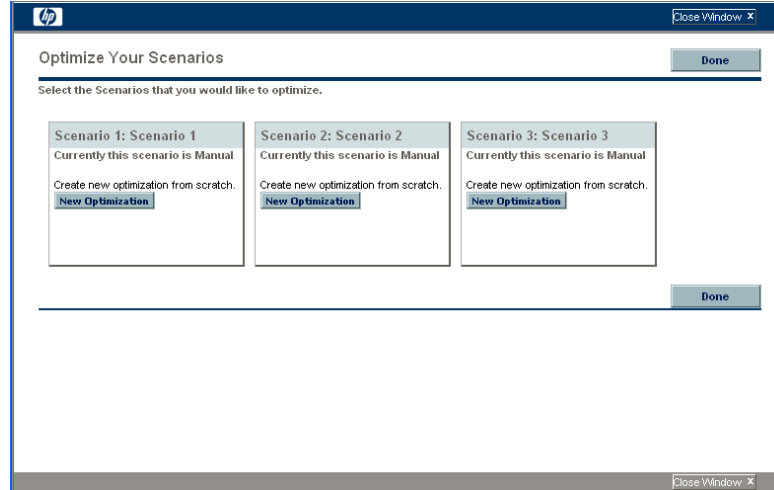
When an optimization is run for any particular scenario, the results overwrite any previous manual specification (using checkboxes) as to which entities in the scenario comparison are to be included and excluded in that scenario. If you want to preserve the original scenario you plan to optimize, copy the scenario comparison and rename that scenario. See *Copying a Scenario Comparison* on page 74 and *Changing the Name of a Scenario* on page 75.

To run a new scenario optimization:

1. Open the scenario comparison that includes the set of entities you want to make available for the optimization. See *Listing and Viewing Scenario Comparisons* on page 66.

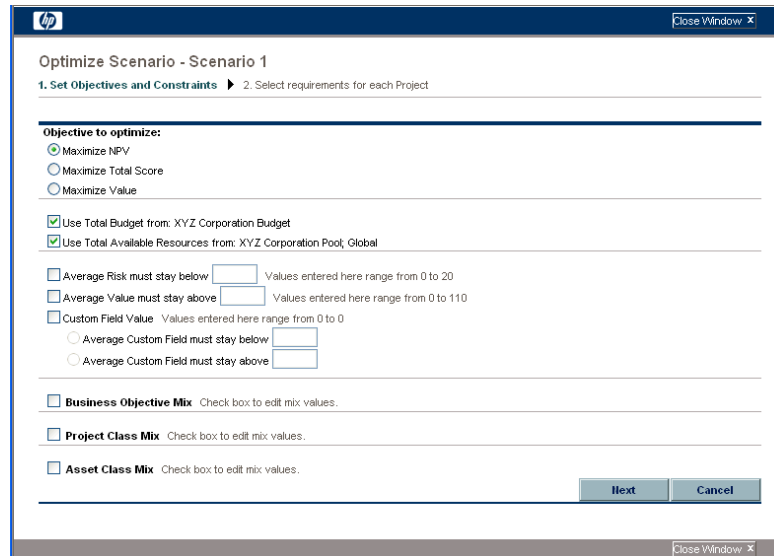
2. In the **Scenario Details** section of the Scenario Comparison page, click **Optimize Scenarios**.

The Optimize Your Scenarios window opens.



3. 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 whether you want to maximize NPV, Total Score, or Value as the objective of the optimization.

- c. Specify whether you want to use the indicated budgets (if any), which were previously specified for this scenario comparison, as part of the optimization constraints.
- d. Specify whether you want to use the indicated resource pools (if any), which were previously specified for this scenario comparison, as part of the optimization constraints.
- e. (Optional) If you want to specify the highest average **Risk Rating** to allow for the entities the optimizer will choose, select the checkbox and specify a value in the stated range for the **Average Risk must stay below** field. (For a definition of **Risk Rating**, see [Determining Portfolio Scores on page 41.](#))
- f. (Optional) If you want to specify the lowest average **Value Rating** to allow for the entities the optimizer will choose, select the checkbox and specify a value in the stated range for the **Average Value must stay above** field. (For a definition of **Value Rating**, see [Determining Portfolio Scores on page 41.](#))
- g. (Optional) If you want to specify the highest average **Custom Field** value to allow for the entities the optimizer will choose, select the **Custom Field Value** checkbox, select the **Average Custom Field must stay below** option, and specify a value in the stated range.

On the other hand, if you want to specify the lowest average **Custom Field** value to allow for the entities the optimizer will choose, select the **Custom Field Value** checkbox, select the **Average Custom Field must stay above** option, and specify a value in the stated range.

- h. (Optional) If you want to specify the minimum percentage of budget to be allocated to various business objectives:
 - i. Select the **Business Objective Mix** checkbox.
 - 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—whether or not you specify a percentage for a particular business objective, the optimizer can select entities that use it if they meet all your other constraints.

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

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

- i. Select the **Project Class Mix** checkbox.
- 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—whether or not you specify a percentage for a particular project class, the optimizer can select entities that use it if they meet all your other constraints.

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

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

- i. Select the **Asset Class Mix** checkbox.
- 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—whether or not you specify a percentage for a particular asset class, the optimizer can select entities that use it if they 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 entities in the scenario comparison.

Required?	Name Δ	Allow new start date?	Phase	Business Unit	Total Cost	Total Benefit	Total Resources (person months)	Score
<input type="checkbox"/>	Build new data center	<input type="checkbox"/>	Proposal	Corporate	\$79,000	\$255,000	24	47
<input type="checkbox"/>	Build new office building	<input checked="" type="checkbox"/>	Proposal	Corporate	\$135,000	\$260,000	24	42
<input type="checkbox"/>	CIO's pet project	<input checked="" type="checkbox"/>	Proposal	Corporate	\$117,000	\$267,000	24	33
<input type="checkbox"/>	Create Performance center of excellence	<input checked="" type="checkbox"/>	Proposal	Corporate	\$90,000	\$258,000	24	63
<input type="checkbox"/>	Expand to China	<input checked="" type="checkbox"/>	Proposal	Corporate	\$107,000	\$261,000	24	38
<input type="checkbox"/>	Expand to Europe	<input checked="" type="checkbox"/>	Proposal	Corporate	\$95,000	\$263,000	24	43
<input type="checkbox"/>	Implement PPM	<input checked="" type="checkbox"/>	Proposal	Corporate	\$85,000	\$261,000	24	110
<input type="checkbox"/>	Implement Paperless Office	<input checked="" type="checkbox"/>	Proposal	Corporate	\$214,000	\$203,000	24	(43)
<input type="checkbox"/>	Maintain CRM	<input checked="" type="checkbox"/>	Proposal	Corporate	\$186,000	\$242,000	24	30
<input type="checkbox"/>	Maintain SOX compliance	<input checked="" type="checkbox"/>	Proposal	Corporate	\$153,000	\$200,000	24	9
<input type="checkbox"/>	Streamline Supply Chain	<input checked="" type="checkbox"/>	Proposal	Corporate	\$105,000	\$249,000	24	37
<input type="checkbox"/>	Upgrade DB Version	<input checked="" type="checkbox"/>	Proposal	Corporate	\$120,000	\$250,000	24	31
<input type="checkbox"/>	Wireless access for customers	<input checked="" type="checkbox"/>	Proposal	Corporate	\$120,000	\$247,000	24	49

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

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

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

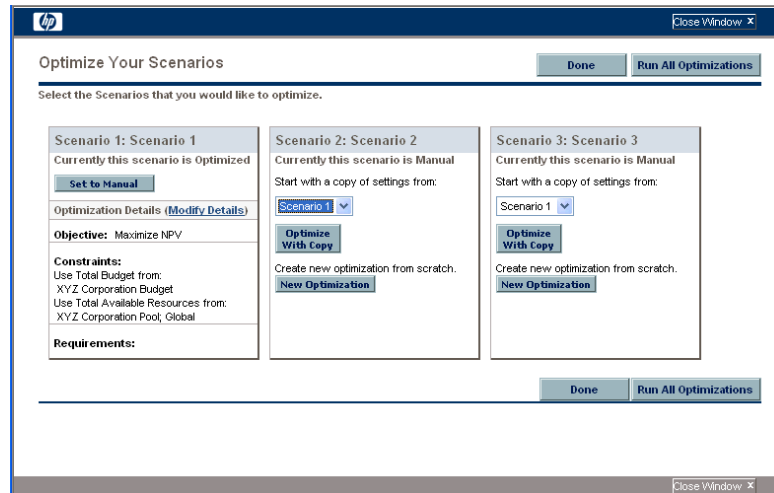
If the optimization delays the planned start dates for any entities, the scenario reflects those delays, which are indicated by orange outlines around those entities in the scenario's **Timeline** tab on the Scenario Details page. However, if you want to make the changes permanent, you must open the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

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



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

▶ 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 4-13 on page 90](#), 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 evaluate. A progress bar is displayed for each scenario that is being optimized.

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

▶ If no combination of 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 checkboxes for all the 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 entity in the optimized scenarios, in keeping with the optimization criteria (including required entities) you specified in [step 3](#) and any previously specified dependencies among the entities in the scenario comparison. The order of the entities (rows) is not changed. See [Figure 4-13](#).

Figure 4-13. Scenario Content for an optimized scenario

Scenario Content										This scenario comparison contains 13 portfolio items. Save		
										Scenario Names: 1. Scenario 1 (Optimized) 2. Scenario 2 3. Scenario 3		
Name Δ	Phase	Business Unit	Total Cost	Total Benefit	Total Resources (person months)	NPV	Custom Value	Score	Scenario			
									1	2	3	
<input checked="" type="checkbox"/> Build new data center	Proposal	Corporate	\$79,000	\$255,000	24	\$176,000	10	47	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> Build new office building	Proposal		\$135,000	\$260,000	24	\$99,149	0	42	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> CIO's net project	Proposal	Corporate	\$117,000	\$267,000	24	\$150,000	0	33	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> Create Performance center of excellence	Proposal	Corporate	\$90,000	\$258,000	24	\$168,000	0	63	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> Expand to China	Proposal	Corporate	\$107,000	\$281,000	24	\$154,000	0	38	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> Expand to Europe	Proposal	Corporate	\$95,000	\$263,000	24	\$168,000	0	43	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> Implement IT Governance	Proposal	Corporate	\$85,000	\$261,000	24	\$176,000	0	110	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> Implement Paperless Office	Proposal	Corporate	\$214,000	\$203,000	24	(\$11,000)	0	(43)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> Maintain CRM	Proposal	Corporate	\$186,000	\$242,000	24	\$56,000	0	30	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> Maintain SOX compliance	Proposal	Corporate	\$153,000	\$200,000	24	\$47,000	0	9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> Streamline Supply Chain	Proposal	Corporate	\$105,000	\$249,000	24	\$144,000	0	37	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> Upgrade DB Version	Proposal	Corporate	\$120,000	\$250,000	24	\$130,000	0	31	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> Wireless access for customers	Proposal	Corporate	\$120,000	\$247,000	24	\$127,000	0	49	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

■ Indicates a Dependency violation

- The data for the optimized scenarios are changed in the graphs on all the tabs of the Scenario Comparison page to reflect the 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 60*), the graph shows data points for all three scenarios of the scenario comparison, whether or not you optimized them. (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 60*.

- For each optimized scenario, wherever you allowed the optimizer to delay 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 entities. (As with any scenario comparison, the start dates in the entities themselves must be updated manually.)
- Entities that the optimization excludes from the scenario are shown in the **Timeline** tab in the same manner as 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 entities list is changed to include only the entities identified by the optimization, sorted from highest to lowest value of the optimization objective, such as NPV. See *Figure 4-14*. You can see the relative leverage of each entity in the optimization toward maximizing your objective. The list also shows which entities you specified as being required in the optimization.

The **Optimization Details** tab displays the criteria you specified in [step b on page 84](#) through [step j on page 86](#). 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 on page 85](#) through [step j on page 86](#).

Figure 4-14. Optimization Details tab after scenario optimization

Scenario Details: Scenario 1 (Optimized)

Scenario Name: Scenario 1

Comparison Name: Corporate Planning Scenarios

Description:

Start Period: October 2006 Finish Period: June 2008

Calculate **Total Budget** for comparison from the following Budgets: XYZ Corporation Budget

Calculate **Total Available Resources** for comparison from the following Resource Pools: Global, XYZ Corporation Pool

Optimization Details (Modify Details)

Objective: Maximize NPV

Constraints: Use Total Budget, Use Total Available Resources

Requirements:

Name	Phase	Required?	NPV	Risk	Value	Score	Custom Field Value
Implement PPM	Proposal	N	176,000	0	110	110	0
Expand to Europe	Proposal	N	168,000	12	55	43	0
Create Performance center of excellence	Proposal	N	168,000	9	72	63	0
Expand to China	Proposal	N	154,000	17	55	38	0
CIO's pet project	Proposal	N	150,000	17	50	33	0
Streamline Supply Chain	Proposal	N	144,000	20	57	37	0
Upgrade DB Version	Proposal	N	130,000	19	50	31	0

You can change the optimization criteria for this scenario (see *Changing an Existing Optimization on page 92*).

Changing an Existing Optimization

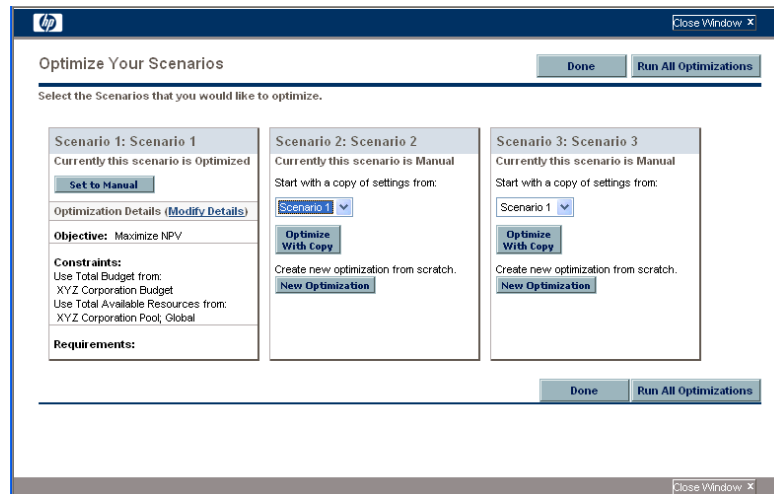


If you want to preserve an existing optimization and its criteria rather than changing them, first copy the optimization and then revise it as described in [Copying an Existing Optimization on page 93](#).

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 66](#).
2. In the **Scenario Details** section of the Scenario Comparison page, click **Optimize Scenarios**.

The Optimize Your Scenarios window opens.



3. For the optimized scenario to be modified, click the **Modify Details** link.
4. Revise the criteria on the two Optimize Scenario windows as desired. Start at [step b on page 84](#).

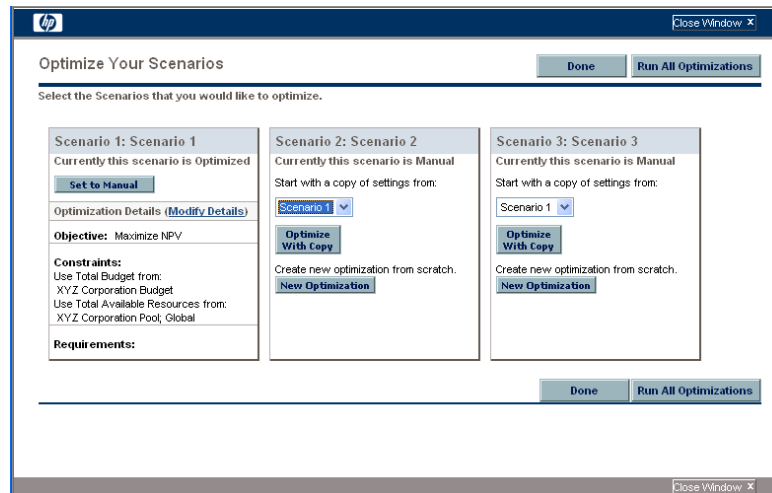
Copying an Existing Optimization

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

Copy and revise an existing optimization as follows:

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 66.
2. In the **Scenario Details** section 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 (that is, the ones 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 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](#) on page 84.

Changing the Content of an Optimized Scenario

You cannot directly edit an optimized scenario. However, to address new considerations, you can make it editable by clicking **Set to Manual** for that scenario on the Optimize Your Scenarios page. The 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 Scenario Comparison Security

Access to scenario comparisons and optimization is controlled primarily 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 on 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 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 they have the appropriate system-level access grants in the first place.

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

Configuring View Access for Users

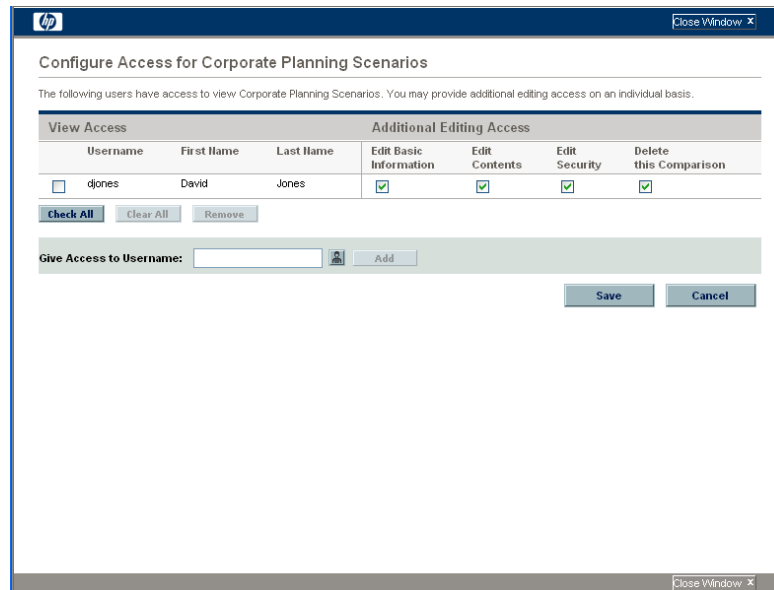
To set up a list of users who can view a scenario comparison:

1. Open the scenario comparison whose access you want to revise. See [Listing and Viewing Scenario Comparisons on page 66](#).

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

2. Click **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 them to the **Selected** column.
- b. Click **Add**.

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

- a. Select the checkboxes 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 on page 96](#).

Configuring Edit Access for Existing Users

To specify 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 66.

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

2. Click **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.

View Access				Additional Editing Access			
Username	First Name	Last Name		Edit Basic Information	Edit Contents	Edit Security	Delete this Comparison
<input type="checkbox"/>	djones	David	Jones	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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	The user can edit the basic information fields in the top section of the Scenario Comparison page. Does <i>not</i> give access to edit the Scenario Contents section. See Changing a Scenario Comparison's Basic Information on page 69 .
Edit Contents	The user can edit the Scenario Contents section of the Scenario Comparison page. Does <i>not</i> give access to edit the basic information fields in the top section.
Edit Security	The user can use the Configure Access page to edit viewing or security for the scenario comparison.
Delete this Comparison	The user can delete the scenario comparison.

3. Configure each user's editing options for this scenario comparison by selecting and deselecting the checkboxes as needed.
4. Click **Save**.

Using Scenario Comparison Portlets

HP Portfolio Management provides portlets that are derived from 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 4-15* 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 4-15. Budget by Asset Class portlets comparing different scenarios

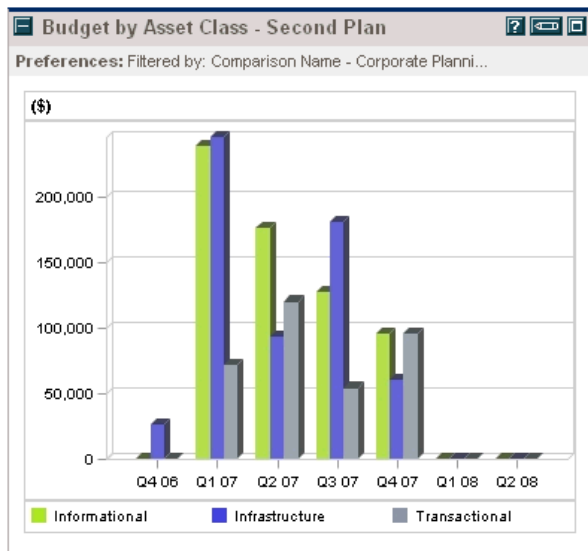
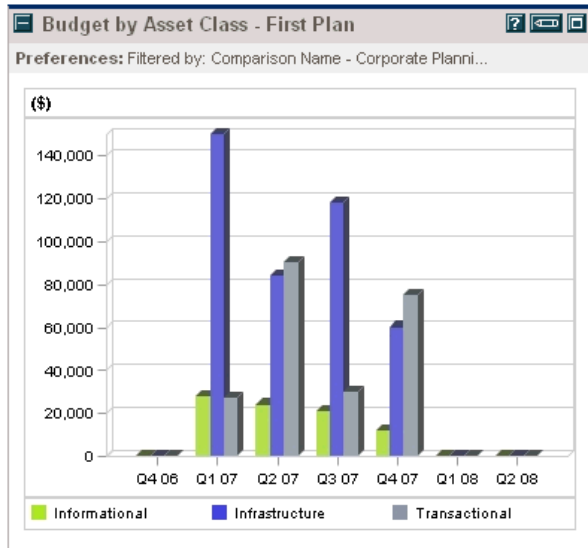


Table 4-1 describes the available scenario comparison portlets.

Table 4-1. Scenario comparison portlets (page 1 of 2)

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 58 . 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 59 . 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 58 . 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 56 . 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 57 . Displays a bar chart depicting the expected cost and the expected benefit per period.
Current Portfolio Map	See Viewing the Portfolio with the Current Portfolio Map Portlet on page 43 .

Table 4-1. Scenario comparison portlets (page 2 of 2)

Portlet	Description
Portfolio by <Category>	See <i>Viewing Portfolio Financial Data with Portfolio By <Category> Portlets</i> on page 43.
Total Budget	Similar to the Cost Plan graph in the Scenario Comparison page's Overview tab. See <i>Overview Tab on page 54</i> . Shows the total budget each scenario will consume per period, along with the total available budget (if specified).
Total Resource	Similar to the Resource Plan graph in the Scenario Comparison page's Overview tab. See <i>Overview Tab on page 54</i> . Shows the total resource demand of each scenario per period, along with the total available resources (if specified).

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

A Financial Metrics

In This Appendix:

- *Return on Investment (ROI)*
 - *Net Present Value (NPV)*
 - *Example of a Future Project*
 - *Example of a Project That Is Underway*
-

Return on Investment (ROI)

Return on investment is based on the attached budget and financial benefit.

$$\text{ROI} = \text{Total Benefit} - \text{Total Cost}$$

Net Present Value (NPV)

Net present value (NPV) is return on investment (ROI), discounted to its current value, based on a specified discount rate and the time allowed for the ROI to be realized. It is based on the attached budget and financial benefit.

For any *particular* future month:

$$\text{NPV} = (\text{Benefit} - \text{Cost}) / (1 + i / 12)^n$$

where:

n is the number of periods (months) from the current month.

Benefit and *Cost* are as specified for month n .

i is 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.

HP Portfolio Management computes and reports *total* NPV, which is the sum of these values for all months—past, current, and future—using each month's particular Benefit and Cost, but with only future months discounted. In other words, past and current months use only their individual calculations of (Benefit – Cost) in the summation. Furthermore, actual rather than projected values are used where available for past months. NPV for past and current months is meaningful for projects that are underway.

Example of a Future Project

For example, consider a 4-month project that has benefits and costs as shown in *Table A-1* and an annual discount rate of 6%, equivalent to a monthly rate of 0.5% or .005.

Table A-1. Example for NPV calculation

Month	Benefit	Cost	Benefit – Cost
April 2007	\$100,000	\$90,000	\$10,000
May 2007	\$120,000	\$90,000	\$30,000
June 2007	\$140,000	\$40,000	\$100,000
July 2007	\$140,000	\$5,000	\$135,000

As of February 2007, two months before the project starts, the total NPV is the sum (rounding off to the nearest dollar) of:

- $\$10,000 / (1.005)^2 = \$9,901$ for April
- $\$30,000 / (1.005)^3 = \$29,554$ for May
- $\$100,000 / (1.005)^4 = \$98,025$ for June
- $\$135,000 / (1.005)^5 = \$131,675$ for July

For this example, the total NPV is \$269,155 (whereas the projected total Benefit – Cost 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 May and the project is underway, and assume that actual values for Benefit – Cost were as planned for April and May. As of May, the total NPV is the sum of:

- \$10,000 for April
- \$30,000 for May
- $\$100,000 / (1.005)^1 = \$99,502$ for June
- $\$135,000 / (1.005)^2 = \$133,660$ for July

Here, the total NPV is \$273,162.

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