

Oracle
Primavera Cloud
Portfolio Management User Guide

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Oracle Primavera Cloud Portfolio Management User Guide

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About This Guide

This guide explains how to use Oracle Primavera Cloud to develop and monitor portfolios, including portfolios to develop long-range budget and resource plans.

Portfolio managers, budget and resource planners, project managers, stakeholders, and anyone else who participates in the portfolio planning process should read this guide.

Portfolios Overview

The Portfolios context in Primavera Cloud provides an environment to develop and monitor portfolios, enabling organizations to strategically and efficiently respond to change. Create portfolios using projects, programs, existing portfolios, or a combination of all three.

Primavera Cloud enables seamless collaboration between project managers, program managers, budget and resource planners, and key stakeholders throughout the entire budget and resource planning processes, including during critical budget and resource negotiation cycles.

Key Features

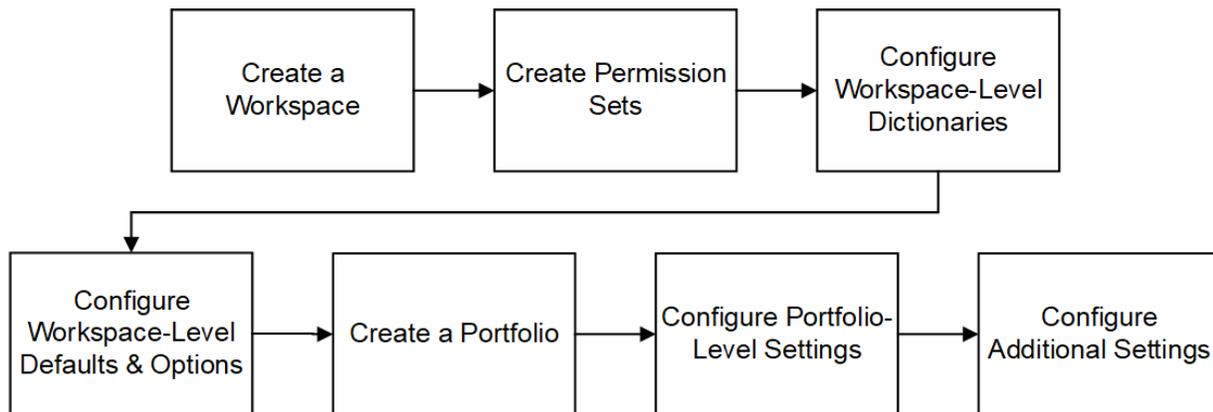
- ▶ **Budget Planning:** Supports the project prioritization and selection process using multiple tools including waterline features, Efficient Frontier optimization, and customized analysis views. Enables budget planners to allocate budgets and funds, review annual budgets against key targets, recommend priorities, and model strategies to manage long-range budget planning requirements by creating multiple what-if scenarios.
- ▶ **Resource Planning:** Enables portfolio managers to allocate resources and select the right combination of projects to execute under resource constraints. Use resource planning optimization to generate the selection of projects that maximizes portfolio value.
- ▶ **Review, Propose, and Approve Processes:** Supports reviews with stakeholders to determine the best mix of projects for inclusion in proposed budget and resource plans. Enables planners to share scenario proposals with project managers for negotiations and approvals.
- ▶ **Measures:** Provide a means for portfolio managers to define quantitative targets and analyze actuals for monitoring portfolio performance.
- ▶ **Prioritization Matrix:** Enables portfolio managers to create separate project and program evaluation matrixes to prioritize and select the right projects or programs for the organization to pursue, based on quantitative data.
- ▶ **Monitoring:** Enables portfolio managers to monitor performance across all portfolios within a workspace using a Summary Scorecard or individual portfolios using Scorecards, Spending, and Dashboards. Analyze portfolio performance by project or sub-portfolios using the Investor Map.

Get Started With Portfolios

The Portfolios context in Primavera Cloud provides an environment to develop and monitor portfolios, enabling organizations to strategically and efficiently respond to change. Create portfolios using projects, programs, existing portfolios, or a combination of all three.

This section details the basic configuration of settings you will need before using portfolios. Depending on how you plan to use portfolios, some of these settings may be optional. Most settings can be configured in any sequence. For a comprehensive list of the actions you can perform in Oracle Primavera Cloud, consult the *Oracle Primavera Cloud Help*.

Complete the following steps to get started with portfolios:



Create a Workspace

Workspaces function as the hierarchical structure of your organization's projects, portfolios, programs, and ideas. Settings configured at the workspace level are inherited by the objects created within the workspace.

Before you can use portfolios, you should create a workspace to contain your organizations projects.

Create Permission Sets

Permission sets are collections of permissions that can be assigned to individual users or user groups, granting them access to objects and functionality across Primavera Cloud. Created at the workspace level, permission sets determine the level of access within the workspace, including the workspace itself. Configure permission sets to grant users or user groups the ability to add, edit, delete, view, or enable objects and functionality. See ***Security Permissions for Portfolios*** for more information on the permissions specific to portfolios.

Configure Workspace-Level Dictionaries

Dictionaries are repositories of items that can be used across the application, without having to create the same items for each object. Stored at the workspace level, dictionary items can be used in the objects within the workspace.

The following dictionaries are relevant to objects used in portfolios:

- ▶ **Analysis Views:** Analysis views are customized layouts of the Budget Planning page that portfolio budget planners can use when selecting projects for a budget plan. Analysis views are accessible from the Published Views page for a portfolio. Create and modify analysis views to use while evaluating scenarios during portfolio budget planning. At the dictionary level, you can create analysis views and associate them with the portfolios in your workspace. They can also be created or associated from the portfolio settings. See **Analysis Views Overview** (on page 48) for more information.
- ▶ **Codes:** Codes provide the ability to categorize objects in Primavera Cloud. You may want to create codes for the objects you'll be working with in portfolios, including portfolios, programs, projects, roles. Codes can be useful when determining which portfolios, projects, or programs to include within another portfolio. Role codes may aid you during demand and allocation planning. See **Codes Overview** (on page 51) for more information.
- ▶ **Evaluation Categories:** Evaluation categories help users rank and score the projects and programs in their portfolio for execution. Evaluation scores can be determined for all projects in the portfolio using the categories created at the workspace level. See **Evaluation Categories Overview** (on page 55) for more information.
- ▶ **Measures:** Performance for portfolios is captured using measures. Measures are defined to monitor data such as number of projects on time and return on investment. Measures have two dimensions: actual and target. These values can be calculated using a formula, or they can be set for manual entry. See **Measures Overview** (on page 60) for more information.

Configure Workspace-Level Defaults & Options

The Defaults & Options section specifies the default configuration of settings for each object in a workspace. Each new instance of a particular object in the workspace will inherit the attributes set in Defaults & Options.

Select an object in the Defaults & Options section of the application to view its configuration options. Available options vary by object. The following options are relevant to objects used in portfolios:

- ▶ **Defaults:** Set object defaults, including the auto numbering defaults for programs.
- ▶ **Field Labels:** View definitions for the fields relevant to each object, updating the names of the fields to suit your organization's standards.
- ▶ **Configured Fields:** Create configured fields to capture user-defined data.
- ▶ **Measures:** At the object level, configure the measures that will capture project data. Project measures can be displayed on various portfolio-specific pages.
- ▶ **Codes:** Add codes to an object for additional classification. Assign codes from a parent workspace or codes that belong to other objects.

The objects below should be configured before using portfolios:

Defaults & Options Settings

Objects	Configuration Options	Link
Portfolio	Field Labels, Configured Fields, Codes	See Portfolio (on page 75) for more information.
Program	Defaults, Field Labels, Configured Fields, Codes	See Program (on page 77) for more information.

Project	Field Labels, Configured Fields, Measures, Codes	See Project (on page 80) for more information.
Resource/Role	Field Labels, Codes	See Resource/Role (on page 86) for more information.

Some help topics, such as Field Labels and Configured Fields, can be performed on a wide range of objects and are separate from each object section. Topics specific to a particular object are found within the object's section.

Create a Portfolio

Portfolios enable you to monitor the health and status of groups of related projects, programs, and sub-portfolios. You can also use portfolios to facilitate multi-year budget and resource planning on projects in the portfolio. You must create a portfolio before you can use the portfolios functionality.

To create portfolios, you should:

- ▶ **Add a portfolio** (on page 86).
- ▶ Populate the portfolio using any combination of the following:
 - ▶ **Add projects** (see "**Add a Project to a Portfolio**" on page 87) to the portfolio using query-based filters.
 - ▶ **Add programs** (see "**Add a Program to a Portfolio**" on page 87) to the portfolio manually or using filters.
 - ▶ **Add sub-portfolios** (see "**Add a Portfolio to a Portfolio**" on page 88) to the portfolio manually.
- ▶ **Set the refresh frequency** (see "**Set a Portfolio's Project and Program Lists to Refresh Automatically**" on page 89) of the portfolio's project and program lists.

Configure Portfolio-Level Settings

Portfolio-level settings include general portfolio configuration options, defaults inherited from the workspace, settings specific to portfolio budget planning, and settings specific to portfolio resource planning. New portfolios inherit the default settings configured at the workspace level, but these can be updated at the portfolio level. Settings updated at the portfolio level only apply to that portfolio. The settings below can be configured at any time and do not necessarily need to be configured immediately after portfolio creation.

General portfolio settings:

- ▶ **Assign a manager** (see "**Assign a Manager to a Portfolio**" on page 90) to designate the person responsible for managing the portfolio.
- ▶ **Add an image** (see "**Add an Image to a Portfolio**" on page 90) to your portfolio.

Budget planning settings:

- ▶ Configure the **planning period options** (see "**Set the Budget Planning Options for a Portfolio**" on page 91) for the budget plan, including total number of years, proposed budget link settings, and timescale increments.

- ▶ **Create customized layouts** (see "**Create an Analysis View in a Portfolio**" on page 92) for the Budget Planning page using analysis views. Analysis views enable you to focus on additional project attributes besides budget values, providing you with greater insight into choosing the right projects for execution.
- ▶ Create **threshold values** (see "**Create Thresholds and Alerts for a Budget Plan**" on page 94) for budget-related project, project summary, and portfolio fields that you want to monitor. When a threshold is met, you can choose to be alerted through email or system notifications.
- ▶ **Set default or custom workflows** (see "**Set Workflows for Reviewing, Proposing, and Approving a Budget Planning Scenario**" on page 97) to use for the various stages of the budget planning process.
- ▶ **Assign roles** (see "**Assign User Roles to a Workspace, Portfolio, or Project**" on page 97) to the users who will be responsible for the different stages of the budget planning process. Multiple users can be set as reviewers, approvers, and owners.

Resource planning settings:

- ▶ Most resource planning functionality is configured directly from the Resource Planning page. However, you can use the portfolio settings to **assign roles** (see "**Assign User Roles to a Workspace, Portfolio, or Project**" on page 97) for the various resource planning workflow stages. These are the same role settings as the budget plan.

Configure Additional Settings

- ▶ Assign codes to the **projects** (see "**Assign a Code to a Project**" on page 98), **programs** (see "**Assign a Code to a Program**" on page 99), and **portfolios** (see "**Assign a Code to a Portfolio**" on page 99) in your workspace. Categorizing your objects using codes is useful when determining which objects you want to include in your portfolio.
- ▶ **Create project dependencies** (see "**Add a Dependency to a Project**" on page 99) to define critical relationships between projects. Dependencies are used in portfolio budget planning to ensure all dependent projects are included in a budget planning scenario.

After configuring the settings discussed in this topic, you should be ready to begin using portfolios. If you need to add or change settings, consult the topics contained in this section.

Permissions

Permission sets determine the level of access to objects and functionality. Configure permission sets to grant users or user groups access to view or complete actions on a variety of objects.

Security Permissions for Portfolios

The following security permissions enable access to the objects and functionality within portfolios. **Create workspace permission sets** (see "**Create a Workspace Permission Set**" on page 19) to enable access to relevant workspace-level data, including dictionaries, object defaults, resources, and roles. Workspace permission sets also enable you to create portfolios, programs, and projects. **Create project permission sets** (see "**Create a Project Permission Set**" on page 26) to enable access to page-level functionality and creation and modification privileges for the relevant project objects. **Create portfolio permission sets** (see "**Create a Portfolio Permission Set**" on page 45) to enable access to portfolio functionality and workflow actions. Depending on the permission, actions may include add, edit, delete, view, or enable. Depending on how you plan to use portfolios, some of the permissions below may be optional.

To use portfolios, users should have the following permissions:

Workspace Permissions

Category	Permissions
Configuration	Analysis Views, Codes, Configured Fields, Evaluation Categories, Field Labels, Measures, Resources, Roles
General	Portfolios, Programs, Projects

Project Permissions

Category	Permissions
Project	Project, Project Costs/Financials
Resources	Resource Demand, Resources, Roles

Portfolio Permissions

Category	Permissions
Budget Plan	Approve Budget Scenario, Budget Scenarios, Propose Budget Scenario, Send Budget Scenario for Approval, Send Budget Scenario for Review
Funds	Funding, Funding Costs/Financials
Portfolio	Assign Workflows to Portfolios, Portfolio Costs, Portfolio Dashboards, Portfolio Thresholds, Portfolios, Snapshots

Resource Plan	Approve Resource Scenario, Propose Resource Scenario, Resource Scenarios, Send Resource Scenario for Approval, Send Resource Scenario for Review
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Understanding View Privileges

View privileges determine a user's ability to view certain pages or objects.

The View Only (System) permission set is a permission set provided by the application. When assigned to a user, this permission set provides view-only access to all pages and objects in a context except for certain pages and objects with their own View privilege. The pages and objects with their own View privilege have been determined to need an extra layer of security - for example, cost and financial information.

The following pages and objects have their own View privilege for an object permission set, so users need the following privileges to access the page or object. Users with only the View Only (System) permission set will not be able to view the below pages and objects:

Workspace Permission Sets

Configuration

- ▶ Forms
- ▶ Resource Costs/Financials
- ▶ Role Costs/Financials
- ▶ Workflow Configuration
- ▶ Workflow Design

General

- ▶ Funding
- ▶ Funding Costs/Financials
- ▶ Strategies
- ▶ Workspace Aggregate Cost Data

Project Permission Sets

Contract

- ▶ Change Order Costs/Financials
- ▶ Change Orders
- ▶ Changes
- ▶ Changes Costs/Financials
- ▶ Commitment Costs/Financials
- ▶ Commitments
- ▶ Contract Costs/Financials

- ▶ Contracts
- ▶ Payment Application Costs/Financials
- ▶ Payment Application
- ▶ Potential Change Orders
- ▶ Potential Change Orders Costs/Financials

Cost

- ▶ Actuals
- ▶ Actuals Costs/Financials
- ▶ Project Budget

Funds

- ▶ Funding
- ▶ Funding Costs/Financials

Project

- ▶ Project Costs/Financials

Resources

- ▶ Resource Costs/Financials
- ▶ Role Costs/Financials

Risk

- ▶ Risk

Schedule

- ▶ Scenarios

Portfolio Permission Sets

Funds

- ▶ Funding
- ▶ Funding Costs/Financials

Portfolio

- ▶ Portfolio Costs

Idea Permission Sets

Idea

- ▶ Evaluation

Program Permission Sets

Program

- ▶ Program Costs/Financials

Cost

- ▶ Program Aggregate Cost Data
- ▶ Program Budget

Risk

- ▶ Risk

Funds

- ▶ Funding
- ▶ Funding Costs/Financials

Create a Workspace Permission Set

Create workspace permission sets to determine a user's level of access to a workspace. Users can only access workspaces that they have been assigned.

To create a workspace permission set:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Permissions**, and then select **Workspace**.
- 4) On the **Workspace** permission sets page, select **+ Add**.
- 5) In the **Name** field, enter a unique name.
- 6) In the **Description** field, enter a description of the permission set.
- 7) In the **Privileges** section, expand each category to assign privileges.
- 8) Select **Save**.
- 9) In the **Summary & Settings** panel, select **✕ Close**.

Notes:

- To assign users to a workspace permission set, use the **Security** page in the Workspace Summary & Settings panel.
- To assign a default workspace permission set to a user group, use the **Default Permissions** tab of the **User Groups** page.

Tips

- ▶ Provide clear permission set names and descriptions to help you manage permissions.
- ▶ You can duplicate existing permission sets by selecting the **+ Add ▼** menu and selecting **Duplicate**. The Administrator (System) permission set cannot be duplicated.
- ▶ You can delete a permission set by selecting the profile and selecting **✕ Delete**. You can only delete permission sets that are not currently in use. The View Only (System) and Administrator (System) global permission sets cannot be deleted.

Workspace Security Privileges Definitions

When creating a permission set, use the following definitions to determine the functionality each privilege controls and other privileges that may also be required. Selecting one privilege may automatically select other privileges if they are required for the original privilege to function properly. These other privilege selections cannot be changed without affecting the selection of the original privilege. Any privilege requirements are noted in the definition.

Configuration

Analysis Views

Enables users to add, edit, and delete Analysis Views.

If you select the add, edit, or delete privileges, all privileges are automatically selected.

Baseline Categories

Enables users to add, edit, and delete baseline categories.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add and edit are automatically selected and cannot be changed.

Calendars

Enables users to add, edit, and delete workspace-level calendars. To add or edit a holiday list, both Add and Edit must be enabled.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, Add and Edit are also selected and cannot be changed.

Applies to: Workspace-level Calendars dictionary

CBS

Enables users to add, edit, and delete a workspace CBS.

Charts

Enables users to add, edit, and delete charts.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add, edit, and view are automatically selected and cannot be changed.

Codes

Enables users to add, edit, and delete codes and code values data. To edit color associations from the workspace Codes dictionary, the edit privilege must be enabled.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add, edit, and view are automatically selected and cannot be changed.

Configured Fields

Enables users to add, edit, and delete configured fields.

If you select the add privilege, edit is automatically selected. If you select the delete privilege, add and edit are automatically selected and cannot be changed.

Cost Categories

Enables users to add, edit, or delete cost categories.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add, edit, and view are automatically selected and cannot be changed.

Custom Log Types

Enables users to add, edit, or delete custom log types in the workspace Summary & Settings. Users with the Add privilege can also assign a custom log type from a parent workspace or duplicate a custom log type. Users with the Delete privilege can also remove custom log assignments. Users with the Edit privilege can also apply a custom log type to programs and projects and assign and remove configured fields and codes.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add and edit are automatically selected and cannot be changed.

Currencies

Enables users to add, edit, and delete currencies.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add, edit, and view are automatically selected and cannot be changed.

Curve Profiles

Enables users to add, edit, and delete a curve profile.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add, edit, and view are automatically selected and cannot be changed.

Evaluation Categories

Enables users to add, edit, or delete evaluation categories.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add and edit are automatically selected and cannot be changed.

Field Labels

Enables users to edit field labels.

Folder Templates

Enables users to add, edit, and delete folder templates.

If you select the add, edit, or delete privileges, all privileges are automatically selected.

Forms

Enables users to add, edit, delete, or view forms.

If you select the add privilege, edit, delete, and view are automatically selected. If you select the edit privilege, the view privilege is automatically selected. If you select the delete privilege, add, edit, and view are automatically selected.

Locations

Enables users to add, edit, and delete locations data.

You must assign all privileges.

Measures

Enables users to add, edit, and delete measures.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add and edit are automatically selected and cannot be changed.

Notebook Topics

Enables users to add, edit, and delete Notebook Topics.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add and edit are automatically selected and cannot be changed.

Reasons

Enables users to add, edit, and delete reasons.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add and edit are automatically selected and cannot be changed.

Report Cycles

Enables users to add, edit, and delete reporting cycles.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add and edit are automatically selected and cannot be changed.

Resource Costs/Financials

Enables users to edit and view workspace-level rates on a resource owned by the current workspace or the parent workspace.

If Edit is selected, the View Resource Costs/Financials and Edit Resources privileges are also selected and cannot be changed.

Applies to: Resources

Resources

Enables users to add, edit, and delete workspace-level resources. The Add privilege also enables users to assign a resource from the parent workspace to the current workspace. To promote a resource to the parent workspace, the Add Resource privilege for the parent workspace must be enabled. To assign roles to a resource, the Edit Roles privilege must also be selected. To view and edit workspace rates on a resource owned by the current workspace or the parent workspace, the View and Edit privileges for Resource Costs/Financials must also be selected.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, the Add Resources, Edit Resources, Edit Resource Costs/Financials and View Resource Costs/Financials privileges are also selected and cannot be changed.

Applies to: Resources

Restricted Configured Fields

Enables users to edit workspace-level restricted configured fields.

Applies to: Projects, Portfolios, and Programs.

Risk Matrix Templates

Enables users to add, edit, and delete risk matrices.

You must assign all security privileges.

Risk Threshold Templates

Enables users to add, edit, and delete risk thresholds.

You must assign all security privileges.

Role Cost/Financials

Enables users to edit and view workspace-level rates on a role owned by the current workspace or the parent workspace.

If Edit is selected, the View Role Costs/Financials and Edit Roles privileges are also selected and cannot be changed.

Applies to: Resources

Roles

Enables users to add, edit, and delete workspace-level roles. The Add privilege also enables users to assign a role from the parent workspace to the current workspace. To promote a role to the parent workspace, the Add Role privilege for the parent workspace must be enabled. To assign resources to a role, the Edit Resources privilege must also be selected. To view and edit workspace rates on a role owned by the current workspace or the parent workspace, the View and Edit privileges for Role Costs/Financials must also be selected.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, the Add Roles, Edit Roles, Edit Role Costs/Financials and View Role Costs/Financials privileges are also selected and cannot be changed.

Applies to: Resources

Rules of Credit

Enables users to add, edit, and delete rules of credit.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add, edit, and view privileges are automatically selected and cannot be changed.

Set Tasks Color Settings

Enables users to set the Color Tasks by attribute in Workspace Settings.

Start Workflows

Enables users to start workflow instances manually from the **Start Workflow** page.

If the Start Workflows privilege is enabled, the Workflows and Forms view privilege is automatically selected and cannot be removed.

Strategy Types

Enables users to add, edit, or delete strategy types.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add and edit are automatically selected and cannot be changed.

Units of Measure

Enables users to add, edit, and delete units of measure.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add, edit, and view are automatically selected and cannot be changed.

Views

Enables users to add, edit, and delete workspace views and filters.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add, edit, and view are automatically selected and cannot be changed.

Workflow Configuration

Enables users to add, edit, delete, or view workflow configurations.

If you select the add privilege, edit, delete, and view are automatically selected. If you select the edit privilege, the view privilege is automatically selected. If you select the delete privilege, add, edit, and view are automatically selected.

Workflow Design

Enables users to add, edit, delete, or view workflow designs.

If you select the add privilege, edit, delete, and view are automatically selected. If you select the edit privilege, the view privilege is automatically selected. If you select the delete privilege, add, edit, and view are automatically selected.

Workspaces

Enables users to add, edit, and delete workspace hierarchy nodes, add or update workspace logo, and edit workspace ID, name, description, and workspace currency (if costs do not exist). Workspace nodes at the highest level (root) must be added by an application administrator.

If you select the add privilege, edit is automatically selected. If you select the delete privilege, add and edit are automatically selected.

Workspace Dashboards

Enables users to add, edit, and delete dashboards at the workspace level.

You must assign all security privileges.

General

Allow Project Creation to Copy from Existing

Enables users to allow project creation to copy from an existing project.

Funding

Enables users to add, edit, delete, and view funds.

If you select the add privilege, edit and view are automatically selected and cannot be changed. If you select the delete privilege, add, edit, and view are automatically selected and cannot be changed. If you select the add, edit, or delete privilege, the edit and view privilege for Funding Costs/Financials are automatically selected.

Funding Costs/Financials

Enables users to edit and view funds and financial data.

If you select the edit privilege, view is automatically selected and cannot be changed. If you select the edit or view privilege, the view privilege for Funding is automatically selected and cannot be changed.

Ideas

Enables users to add and submit ideas in the workspace.

Import Project

Enables users to import XML or XER files from P6 EPPM and Microsoft Project.

Import Project Excel

Enables users to import Microsoft Excel (.xls or .xlsx) files for creating projects.

Move Project

Enables users to move a project from one workspace to another workspace. When you select Enable, the Project's Add privilege is automatically selected and cannot be changed. You must have this privilege in both the origin and destination workspace to have complete access to shared data during the move process.

Move Workspace

Enables users to move a workspace from one workspace to another workspace. You must have this privilege in both the selected and target workspaces to move the workspace. When you select Enable, the workspace's Add and Edit privilege is automatically selected.

Portfolios

Enables users to add portfolios.

Print Layouts

Enables users to add print layouts.

Programs

Enables users to add programs to the workspace.

Project Proposals

Enables users to add project proposals from the Project inventory panel or as part of an idea approval workflow. Only users with the Portfolio and Capital Planning Cloud Service license can add project proposals.

Applies to: Accept Idea workflow action, Project Inventory

Project Template

Enables users to add project templates.

Projects

Enables users to add projects.

Promote Report to Workspace

Enables users to promote a user or project report to a workspace report.

Recalculate Workspace Costs

Enables users to recalculate workspace costs when editing cost information.

Strategies

Enables users to add, edit, or delete strategies.

If you select the add privilege, edit and view are automatically selected and cannot be changed. If you select the delete privilege, add, edit, and view are automatically selected and cannot be changed.

Workspace Aggregate Cost Data

Enables users to view aggregate cost data for all projects and child workspaces within the workspace. If users also have the Project Costs/Financials privilege, they can access CBS costs in the project from the workspace Cost Sheet page.

Workspace Cost Sheet

Enables users to add and edit the workspace cost sheet.

If you select the edit privilege, the edit privilege for CBS is automatically selected and cannot be changed.

Users and Security

Permission Sets

Enables users to add, edit, and delete global, workspace, project, portfolio, file, and report permission sets.

You must assign all security privileges.

User Groups

Enables users to add, edit, and delete user groups for the workspace. Users with this privilege can edit the user groups from the Workspace Summary & Settings or from the User Groups page in Global Admin.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add and edit, are automatically selected and cannot be changed.

Create a Project Permission Set

Create project permission sets to determine a user's level of access to each project. Users can only access projects that they have been assigned.

To create a project permission set:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Permissions**, and then select **Project**.
- 4) On the **Project** permission sets page, select **+ Add**.
- 5) In the **Name** field, enter a unique name.
- 6) In the **Description** field, enter a description of the permission set.
- 7) In the **Privileges** section, expand each category to assign privileges.
- 8) Select **Save**.

9) In the **Summary & Settings** panel, select **✕ Close**.

Notes:

- To assign users to a project permission set, use the **Security** page in the **Project Team** app.
 - To assign a default project permission set to a user group, use the **Default Permissions** tab of the **User Groups** page.
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Tips

- ▶ Provide clear permission set names and descriptions to help you manage permissions.
- ▶ You can duplicate existing permission sets by selecting the **+ Add ▼** menu and selecting **Duplicate**. The Administrator (System) permission set cannot be duplicated.
- ▶ You can delete a permission set by selecting the profile and selecting **✕ Delete**. You can only delete permission sets that are not currently in use. The View Only (System) and Administrator (System) global permission sets cannot be deleted.

Project Security Privileges Definitions

When creating a permission set, use the following definitions to determine the functionality each privilege controls and other privileges that may also be required. Selecting one privilege may automatically select other privileges if they are required for the original privilege to function properly. These other privilege selections cannot be changed without affecting the selection of the original privilege. Any privilege requirements are noted in the definition.

Contract**Contracts**

Enables users to add, edit, delete, or view contracts.

The add and delete privileges for contracts also apply to contract line items.

If you select the add privilege, edit and view are automatically selected and cannot be changed.

If you select the edit privilege, the view privilege is automatically selected and cannot be changed.

If you select the delete privilege, all privileges for Contract Costs/Financials are also automatically selected and cannot be changed.

Contract Costs/Financials

Enables users to edit or view contract costs and financial information associated with contracts.

If you select the edit privilege, the view privilege is automatically selected and cannot be changed. The edit and view privileges for Contracts are also selected and cannot be changed.

Contracts Approval

Enables users to approve and withdraw contracts.

If you enable this option, the privileges to edit and view Contract Costs/Financials are selected and cannot be changed.

Commitments

Enables users to add, edit, delete, or view commitments.

The add and delete privileges for commitments also apply to commitment line items.

If you select the add privilege, edit and view are automatically selected and cannot be changed.

If you select the edit privilege, the view privilege is automatically selected and cannot be changed.

If you select the delete privilege, all privileges for Commitment Costs/Financials are also automatically selected and cannot be changed.

Commitment Costs/Financials

Enables users to edit or view commitment costs and financial information associated with commitments.

If you select the edit privilege, the view privilege is automatically selected and cannot be changed.

Commitments Approval

Enables users to approve and withdraw commitments.

If you enable this option, the privileges to edit and view Commitment Costs/Financials are selected and cannot be changed.

Changes

Enables users to add, edit, delete, and view changes.

If you select the add privilege, edit and view are automatically selected and cannot be changed.

If you select the edit privilege, the view privilege is automatically selected and cannot be changed.

Changes Costs/Financials

Enables users edit and view changes.

If you select the edit privilege, the view privilege is automatically selected and cannot be changed.

These privileges also apply to changes.

Close/Reopen/Void Changes

Enables users to close, reopen, or void changes.

Change Orders

Enables users to add, edit, delete, and view change orders.

The add and delete privileges for change orders also apply to change order line items.

If you select the add privilege, edit and view are automatically selected and cannot be changed.

If you select the edit privilege, the view privilege is automatically selected and cannot be changed.

If you select the delete privilege, all privileges for Change Order Costs/Financials are also automatically selected and cannot be changed.

In order to add change orders, you also need at least the view privilege for contracts or commitments.

Change Order Costs/Financials

Enables users to edit or view change order costs and financial information associated with change orders.

If you select the edit privilege, the view privilege is automatically selected and cannot be changed. The edit and view privileges for change orders are also selected and cannot be changed.

Change Orders Approval

Enables users to approve and withdraw change orders.

If you enable this option, the privileges to edit and view Change Orders are selected and cannot be changed.

Potential Change Orders

Enables users to add, edit, delete, and view potential change orders.

If you select the add privilege, edit and view are automatically selected and cannot be changed.

If you select the edit privilege, the view privilege is automatically selected and cannot be changed.

If you select the delete privilege, all privileges for Potential Change Orders Costs/Financials are also automatically selected and cannot be changed.

Potential Change Orders Costs/Financials

Enables users to edit and view Potential Change Orders Costs/Financials.

These privileges also apply to potential change orders.

Potential Change Order Proposals

Enables users to add, edit, and delete potential change order proposals.

Approve a Proposal and Close the Potential Change Order

Enables users to approve proposals and close potential change orders.

Withdraw a Potential Change Order

Enables users to withdraw potential change orders.

Payment Applications

Enables users to add, edit, delete, and view payment applications.

If you select the add privilege, edit and view are automatically selected and cannot be changed.

If you select the edit privilege, the view privilege is automatically selected and cannot be changed.

If you select the delete privilege, all privileges for Payment Application Costs/Financials are also automatically selected and cannot be changed.

In order to add payment applications, you also need at least the view privilege for contracts or commitments.

Payment Application Costs/Financials

Enables users to edit or view payment application costs and financial information associated with payment applications.

If you select the edit privilege, the view privilege is automatically selected and cannot be changed. The edit and view privileges for payment applications are also selected and cannot be changed.

Payment Applications Approval

Enables users to approve and withdraw payment applications.

If you enable this option, the privileges to edit and view Payment Applications are selected and cannot be changed.

Cost

Accept Proposed Budget and Request Changes

Enables users to accept a proposed budget for a project or request change.

Applies to: Costs and Funds

Actuals

Enables users to add, edit, delete, or view actual project spending. This privilege does not grant users access to the cost and financial information associated with actuals records. For that, the user must have the Actuals Costs/Financials privilege.

If you select the add privilege, edit and view are automatically selected and cannot be changed.

If you select the edit privilege, the view privilege is automatically selected and cannot be changed.

If you select the delete privilege, all privileges for Actuals and Actuals Costs/Financials are also automatically selected and cannot be changed.

Applies to: Costs and Funds

Actuals Costs/Financials

Enables users to edit or view costs and financials associated with actuals records.

If you select the edit privilege, the view privilege is automatically selected and cannot be changed. The edit and view privilege for Actuals is also automatically selected and cannot be changed.

If you select the view privilege, the view privilege for Actuals is automatically selected and cannot be changed.

Applies to: Costs and Funds

Cash Flow Snapshots

Enables users to add, edit, or delete cash flow snapshots.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add and edit are automatically selected and cannot be changed.

Applies to: Costs and Funds

Project Budget

Enables users to add, edit, delete, or view budgets.

If you select the add privilege, the edit and view privileges are automatically selected and cannot be changed. If you select the delete privilege, add and edit are automatically selected and cannot be changed. If you select the edit privilege, view is automatically selected and cannot be changed.

If you select the add, edit, delete, or view privileges, the view privilege for Project Costs/Financials is also selected.

If the Project Costs/Financials view privilege is disabled, the Budget page is restricted.

Applies to: Costs and Funds

Project Budget Approval

Enables users to approve project budgets.

If you select the enable privilege, the Project Budget edit and view privileges are selected and cannot be changed, and the Project Costs/Financials view privilege is selected and cannot be changed.

Applies to: Costs and Funds

Project Cost Sheet

Enables users to add, edit, or delete project CBS codes. It also enables users to select and edit budget sources.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add and edit are automatically selected and cannot be changed.

Applies to: Costs and Funds

Recalculate Project Costs

Enables users to recalculate project, activity, and resource assignment costs when editing cost information. When run from the Costs and Funds app, only the project objects that are selected at run time will be recalculated. This does not include activity and resource assignments costs. Activities and resource assignments are the only objects whose costs are recalculated from the Activities page in the Schedule app.

If you select the enable privilege, the Edit Project privilege, the Edit Project Costs/Financials privilege, and the view Project Costs/Financials privilege are also selected and cannot be changed.

Applies to: Costs and Funds, Schedule

Documents

Custom Log Types

Enables users to add, edit, or delete custom logs in the project Summary & Settings. Users with the Add privilege can also assign a custom log from the workspace or duplicate a custom log. Users with the Delete privilege can also remove custom log assignment. Users with the Edit privilege can also assign and remove configured fields and codes at the project level.

To be able to assign user or user group access to a custom log, or to remove that assignment, a user needs the following permissions: the Edit privilege for Custom Log Type (either in a custom Project Permission Set or by assigning the user the built-in Administrator permission set for the project) AND the built-in Administrator permission set for Custom Logs when the user is assigned to the project or workspace. This also applies to giving users the ability to edit the permissions of custom logs assigned from the workspace.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add and edit are automatically selected and cannot be changed.

Manage Submittal Approvals

Enables users to manage submittal approvals.

If you enable this privilege, the Upload Submittals for My Company privilege is also enabled.

Spec Sections

Enables users to add, edit, or delete spec sections.

If you select the add privilege, edit is automatically selected. If you select the delete privilege, add and edit are automatically selected.

Submittals

Enables users to add, edit, or delete submittals.

If you select the add privilege, edit is automatically selected. If you select the delete privilege, add and edit are automatically selected.

Upload Submittals for All Companies

Enables users to upload submittals for all companies.

Upload Submittals for My Company

Enables users to upload submittals for their associated companies.

Funds

Funding

Enables users to add, edit, delete, and view funds.

If you select the add privilege, edit and view are automatically selected and cannot be changed. If you select the delete privilege, add, edit, and view are automatically selected and cannot be changed. If you select the add, edit, or delete privilege, the edit and view privilege for Funding Costs/Financials are automatically selected and cannot be changed.

Applies to: Costs and Funds

Funding Costs/Financials

Enables users to edit and view funds and financial data.

If you select the edit privilege, view is automatically selected and cannot be changed. If you select the edit or view privilege, the view privilege for Funding is automatically selected and cannot be changed.

Applies to: Costs and Funds

Tasks

Complete Constraints for All Companies

Enables users to enter a delivered date on task constraints regardless of assigned company.

If Enable is selected, the Enable privilege for Complete Constraints for My Company and the Edit privilege for Constraints are also selected and cannot be changed.

Applies to: Tasks

Complete Constraints for My Company

Enables users to enter a delivered date on task constraints that belong to the company to which they are assigned.

If Enable is selected, the Edit privilege for Constraints is also selected and cannot be changed.

Applies to: Tasks

Configure Task Notifications for Others

Enables users to configure task notification preferences on behalf of other users and configure default task notification preferences for all users assigned to at least one task in the project.

Applies to: Tasks

Configure Task Plan

Enables users to add and configure a task plan for a project.

If Add is selected, the user can add a task plan with custom swimlanes and apply it to the Work Plan page.

Applies to: Tasks

Constraints

Enables users to add, edit, and delete task constraints regardless of the user's assigned company. To assign tasks to constraints, or to remove an assignment, the Edit privileges for Tasks for All Companies or Tasks for My Company must also be selected.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, Add and Edit are also selected and cannot be changed.

Applies to: Tasks

Link Constraint to Aconex Package

Enables users to link a task constraint to an Aconex package. To link a task constraint to an Aconex package, the Enable privilege must be selected.

Applies to: Tasks

Manage Commitments and Complete All Company's Tasks

Enables users to commit, recommit, and add reasons to any public task, delete commitments and recommitments on any public task, complete any public task, and complete private tasks that belong to them.

If Enable is selected, the Enable privilege for Manage Commitments and Complete My Tasks and the Edit privilege for Tasks for All Companies are also selected and cannot be changed.

Applies to: Tasks

Manage Commitments and Complete My Company's Tasks

Enables users to commit, recommit, and add reasons to public tasks to the company to which they are assigned, delete commitments and recommitments on public tasks to the company to which they are assigned, complete public and private tasks to the company to which they are assigned, and complete task milestones that belong to the company to which they are assigned.

If Enable is selected, the Manage Commitments and Complete My Tasks privilege is also enabled.

Applies to: Tasks

Manage Commitments and Complete My Tasks

Enables users to commit, recommit, and add reasons to public tasks to which they are assigned, delete commitments and recommitments on public tasks to which they are assigned, complete public and private tasks to which they are assigned, and complete task milestones that belong to the company to which they are assigned.

If Enable is selected, the Edit privilege for Tasks for My Company is also selected and cannot be changed.

Applies to: Tasks

Tasks for All Companies

Enables users to add, edit, and delete any public task regardless of assigned company and any private tasks that belong to them.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, Add and Edit are also selected and cannot be changed. Any privilege selected also selects the corresponding privilege for Tasks for My Company.

Applies to: Tasks, Schedule

Tasks for My Company

Enables users to add, edit, and delete public tasks that belong to the company to which they are assigned and private tasks that belong to them.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, Add and Edit are automatically selected and cannot be changed.

Applies to: Tasks, Schedule

Project

Add WBS from other projects/templates

Enables users to copy WBS nodes and objects within the nodes from a project template or another project. To use this feature, the Add Activities privilege must also be selected.

Applies to: Schedule, Scope

Alerts

Enables users to add, edit, and delete system alerts that appear when thresholds are met on project-level data. Users do not require privileges to subscribe or unsubscribe themselves to an alert.

If you select the add, edit, or delete privilege, all Alerts privileges are also selected and cannot be changed.

Applies to: Costs and Funds, Schedule, Scope

Baselines

Enables users to add, edit, and delete project baselines. To choose or change a baseline type, the Enable Baselines - Set Project Baselines privilege must also be selected. To modify data within a baseline, privileges in the Schedule (Baselines) section must also be selected.

The Add and Edit privileges must be selected together. If Delete is selected, the Add Baselines, Edit Baselines, and Enable Baselines - Set Project Baselines privileges are also selected and cannot be changed.

Applies to: Schedule, Scope

Baselines - Set as Current Schedule

Enables users to set a project baseline as the current schedule. To use this feature, the Add Baselines and Edit Baselines privileges must also be selected.

Applies to: Schedule

Baselines - Set Project Baselines

Enables users to select a baseline type when adding a baseline or change the type of an existing baseline.

If Enable is selected, the Add Baselines and Edit Baselines privileges are also selected and cannot be changed.

Applies to: Schedule, Scope

Calendars

Enables users to add, edit, and delete project-level calendars. To edit a holiday list or promote a calendar to the parent workspace, the Add and Edit Calendars privileges for the parent workspace must be enabled.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, Add and Edit are also selected and cannot be changed.

Applies to: Project-level Calendars dictionary

Close Reporting Periods

Enables users to close the current reporting period to further edits. Closed periods allow for accurate project analysis and reporting.

Applies to: Scope

Codes

Enables users to add, edit, and delete project-level activity codes and code values. To promote a code to the parent workspace, Add, Edit, and the Add Codes privilege for the parent workspace must be enabled.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, Add and Edit are also selected and cannot be changed.

Applies to: Project-level Codes dictionary, Schedule

Companies

Enables users to assign or remove companies from a project and change the color associated with each company.

Applies to: Project Team

Currencies

Enables users to change the project currency and its associated exchange rate.

If Edit is selected, the Edit Project privilege is also selected and cannot be changed.

Applies to: Project Settings

Global Change

Enables users to add, edit, or delete public global changes or private global changes that belong to them. Users must have the Add and Edit privileges to copy global changes from another project.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, Add and Edit are also selected and cannot be changed.

Applies to: Schedule

Global Change - Run

Enables users to run public global changes or global changes that belong to them. Users must have the Edit Activities privilege selected in the Current, Baselines, or Scenarios section of the Schedule privileges to make changes to activities in the current schedule, baseline, or scenario.

If Enable is selected, the Add Global Change and Edit Global Change privileges are also selected and cannot be changed.

Applies to: Schedule

Project

Enables users to edit and delete projects and project templates.

The Edit privilege enables users to edit project and project template data such as project details, codes, and settings. Some data such as alerts, currencies, and dictionaries have their own privileges. The Edit privilege is required to be able to configure the attribute a task is colored by for the project and enables the Color By setting in Project Settings. The Edit privilege is required to be able to move a project to a new destination workspace.

If Delete is selected, Edit is also selected and cannot be changed.

Applies to: Project Inventory, Project Settings

Project Costs/Financials

Enables users to view and edit project cost fields across the application, including at the portfolio and program levels, for pages to which the user has access. Without the Edit privilege, cost fields will be read-only. Without the View privilege, depending on the page, cost fields may be hidden, show a lock icon instead of a value, or the page may be restricted entirely.

Configured fields with a Data Type of Cost for objects in other contexts, objects with their own Cost/Financials privileges (Changes, Change Estimates, Change Order, Contract, Commitments, Fund, Payment Applications, Potential Change Orders, Project Actuals), and the File object are not controlled by the Project Costs/Financials privileges. When the View privilege is selected, the following functionality is enabled:

- ▶ Cost-related field values on the Cost Sheet page are displayed.
- ▶ All fields on the project Cash Flow page are displayed.
- ▶ Cost-related field values on the project Budget page are displayed and editable as long as the project Edit Project Budget and View Project Budget privileges are also enabled.
- ▶ Cost-related project-level field values on the program Summary Cost Sheet page are displayed.
- ▶ Cost-related project-level field values on the portfolio Budget Planning, Published Views, and Scenario Comparison pages are displayed.
- ▶ Cost-related project-level risk field values on the project Risk Register page are displayed.
- ▶ Cost-related project-level risk field values on the program Risk Register page are displayed as long as the program View Risk and project View Risk privileges are also enabled.
- ▶ Cost-related activity and resource assignment field values are displayed.
- ▶ Cost-related scope field values are displayed.
- ▶ The Construction Value field in the project details is displayed.
- ▶ Cost-related field values on the Schedule Comparison page for project activities and resource assignments are displayed.
- ▶ Configured fields with a Data Type of Cost are editable for the following objects as long as the Edit privilege for the corresponding object (Project Budget or Project Cost Sheet) is also enabled: Budget, Budget Changes, Budget Transfers, Project Cost Sheet. These objects do not require the Edit privilege for Project Costs/Financials to be enabled in order to be edited. Cost type configured fields for the Budget Details object can be edited without enabling the Edit privileges for Project Costs/Financials or Project Budget. Cost type configured fields for the Budget Details object are displayed as long as the View Project Costs/Financials and View Project Budget privileges are also enabled.

When the Edit privilege is selected, the following functionality is enabled:

- ▶ All fields on the project Cash Flow page are editable.
- ▶ Cost-related project-level risk fields on the project Risk Register page are editable as long as the project Edit Risk and View Risk privileges are also enabled.
- ▶ Cost-related project-level risk fields on the program Risk Register page are editable as long as the program View Risk, project Edit Risk, and project View Risk privileges are also enabled.

- ▶ Cost-related activity and resource assignment fields are editable as long as the Edit Activities privilege is also enabled.
- ▶ Cost-related scope fields are editable as long as the Edit privilege for an individual scope object is also enabled.
- ▶ Configured fields with a Data Type of Cost are editable for the following objects as long as the Edit privilege for the corresponding object is also enabled: Activity, Custom Log, Project, Resource Assignment, Risk, Scope Assignment, Scope Item, Submittal, Task, WBS, Work Packages.
- ▶ Set up store period performance for a project as long as the Edit Project, Enable Store Period Performance, Add Baseline, Enable Baseline - Set Project Baseline, and Enable Recalculate Project Costs privileges are also enabled.
- ▶ Store period performance for a project as long as the Enable Store Period Performance privilege is also enabled.
- ▶ Recalculate project costs as long as the Enable Recalculate Project Costs privilege is also enabled.

If the Edit privilege is selected, the View Project Costs/Financials and Edit Project privileges are also selected and cannot be changed.

Applies to: Costs and Funds, Project Details, Risk, Schedule, Scope

Project Dashboards

Enables users to add, edit, and delete dashboards at the project level.

If you select the add, edit, or delete privilege, all Project Dashboards privileges are also selected and cannot be changed.

Applies to: Dashboards

Project Integration

Enables users to run project synchronizations between Primavera Cloud and P6 EPPM or Primavera Gateway. To view project synchronizations, the Edit Project privilege must also be selected.

Applies to: Integration

Promote Report to Project

Enables users to promote user type reports to the project type, making them available to other users of the project.

Applies to: Reports

Scenarios

Enables users to add, edit, and delete project scenario details and view scenarios and scenario schedules. To interact with the objects or tools within a scenario, such as activities, leveler, relationships, or scheduler, the corresponding privileges for that object or tool and the View Scenarios privilege must also be selected. If Edit is selected, users can use Get Activities to add activities to the scenario.

If Add is selected, Edit and View are also selected and cannot be changed. If Edit is selected, View is also selected and cannot be changed. If Delete is selected, Add, Edit, and View are also selected and cannot be changed.

Applies to: Schedule

Scenarios - Set as Current Schedule

Enables users to set a project scenario as the current schedule.

If Enable is selected, the Add Scenarios, Edit Scenarios, and View Scenarios privileges are also selected and cannot be changed.

Applies to: Schedule

User Groups

Enables users to add, edit, and delete project-level user groups. Users with the Edit privilege can also edit the permission sets of enabled inherited user groups, assign users to an inherited user group, and remove users from an inherited user group if the user was assigned at the project level. Users with these privileges can configure user groups from the Project Team app or from the User Groups page in Global Admin.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, Add and Edit are also selected and cannot be changed.

Applies to: Global Admin, Project Team

Views

Enables users to add, edit, and delete project-level views and filters. Users do not require privileges to add, edit, or delete personal views or filters.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, Add and Edit are also selected and cannot be changed.

Applies to: Project-level pages that support named views

WBS

Enables users to add, edit, and delete WBS nodes.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, Add and Edit are also selected and cannot be changed.

Applies to: Schedule, Scope

Project Proposals

Project Proposals

Enables users to delete project proposals and edit project proposal data such as project details, codes, and settings. Some data such as alerts, currencies, and dictionaries have their own privileges. Project configured fields with a Data Type of Cost are editable in project proposals as long as the Edit Project Proposals and Edit Project Costs/Financials privileges are enabled. Objects within a project proposal that are not listed here are controlled by the same privileges that control those objects in the project context.

You need this privilege to launch a project proposal workflow. This privilege allows users to add project proposals and launch a workflow even if they do not have the Start Workflows privilege.

Applies to: Project Inventory, Project Settings

Project Proposals and WBS Costs/Financials

Enables users to edit and view cost fields for pages within a project proposal to which the user has access. When the Edit privilege is selected, all functionality for the View Project Costs/Financials privilege is enabled, and all fields on the project proposal Cash Flow page are editable. All other cost fields are controlled by the Project Costs/Financials privileges.

If the Edit privilege is selected, the View Project Costs/Financials and Edit Project Proposals privileges are also selected and cannot be changed.

Applies to: Costs and Funds, Project Details

Resources

Resource Costs/Financials

Enables users to edit and view project-level rates on a project resource or a workspace resource assigned to the project.

If Edit is selected, the View Resource Costs/Financials and Edit Resource privileges are also selected and cannot be changed.

Applies to: Resources

Resource Demand

Enables users to add, edit, and delete resource demands. The Edit privilege also enables users to create demand units from the project schedule and recalculate role costs.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, Add and Edit are also selected and cannot be changed.

Resources

Enables users to add, edit, and delete project-level resources. The Add privilege also enables users to assign a workspace resource to the project level. To promote a resource to the parent workspace, the Add Resource privilege for the parent workspace must be enabled. To assign roles to a resource, the Edit Roles privilege must also be selected. To view and edit project-level rates on a project resource or a workspace resource assigned to the project, the View and Edit privileges for Resource Costs/Financials must also be selected.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, the Add Resources, Edit Resources, Edit Resource Costs/Financials and View Resource Costs/Financials privileges are also selected and cannot be changed.

Applies to: Resources

Role Costs/Financials

Enables users to edit and view project-level rates on a project role or a workspace role assigned to the project.

If Edit is selected, the View Role Costs/Financials and Edit Roles privileges are also selected and cannot be changed.

Applies to: Resources

Roles

Enables users to add, edit, and delete project-level roles. The Add privilege also enables users to assign a workspace role to the project level. To promote a role to the parent workspace, the Add Role privilege for the parent workspace must be enabled. To assign resources to a role, the Edit Resources privilege must also be selected. To view and edit project-level rates on a project role or a workspace role assigned to the project, the View and Edit privileges for Role Costs/Financials must also be selected.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, the Add Roles, Edit Roles, Edit Role Costs/Financials and View Role Costs/Financials privileges are also selected and cannot be changed.

Applies to: Resources

Risk

Risk

Enables users to add, edit, delete, or view risks.

If you select the add privilege, edit and view are automatically selected. If you select the delete privilege, add, edit, and view are automatically selected.

Risk Analysis

Enables users to run risk analysis.

Risk Matrix

Enables users to add, edit, delete, or risk matrixes.

If you select the add privilege, edit is automatically selected. If you select the delete privilege, add and edit are automatically selected.

Schedule (Current)

Activities

Enables users to add, edit, and delete activities in the current schedule. To view or edit activity or assignment costs, the View Project Costs/Financials and Edit Project Costs/Financials privileges must also be selected. Some cost fields may be indirectly modified by editing fields they are connected to, even if Edit Project Costs/Financials is disabled. To manage risks or tasks associated with activities in the current schedule, the appropriate Risk and Tasks privileges must also be selected.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, Add and Edit are also selected and cannot be changed. When an Activities privilege in the Schedule (Current) section is selected, the same Activities privileges in the Schedule (Baselines) and Schedule (Scenarios) sections are also selected and cannot be changed.

Applies to: Schedule

Level

Enables users to level resources and roles in the current schedule. When the leveler is run, the scheduler is also run, and activities may be modified even if Edit Activities is disabled.

If Enable is selected, the Enable Schedule privilege in the Schedule (Current) section and the same Level privileges in the Schedule (Baselines) and Schedule (Scenarios) sections are also selected and cannot be changed.

Applies to: Schedule

Merge Activities to Current Schedule

Enables users to run the merge process for activities in a scenario or baseline to the current schedule from the Schedule Comparison page. Activities with variances will display in the Activities list.

If Enable is selected, the Merge Mode toggle displays on the Schedule Comparison page.

Applies to: Schedule

Relationships

Enables users to add, edit, and delete relationships between activities in the current schedule.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, Add and Edit are also selected and cannot be changed. When a Relationships privilege in the Schedule (Current) section is selected, the same Relationships privileges in the Schedule (Baselines) and Schedule (Scenarios) sections are also selected and cannot be changed.

Applies to: Schedule

Schedule

Enables users to run the scheduler in the current schedule. When the scheduler is run, activities may be modified even if Edit Activities is disabled.

If Enable is selected, the Enable Schedule privileges in the Schedule (Baselines) and Schedule (Scenarios) sections are also selected and cannot be changed.

Applies to: Schedule

Store Period Performance

Enables users to run the store period performance for a schedule.

Applies to: Schedule

Schedule (Baselines)

Activities

Enables users to add, edit, and delete activities in a project baseline. To use this feature, the Add Baselines and Edit Baselines privileges must also be selected. Activities are added to baselines using the Get Activities feature. To view or edit baseline activity or assignment costs, the View Project Costs/Financials and Edit Project Costs/Financials privileges must also be selected. Some cost fields may be indirectly modified by editing fields they are connected to, even if Edit Project Costs/Financials is disabled. To manage risks associated with activities in the baseline, the appropriate Risk privileges must also be selected.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, Add and Edit are also selected and cannot be changed.

Applies to: Schedule

Level

Enables users to level resources and roles in a project baseline. To use this feature, the Add Baselines and Edit Baselines privileges must also be selected. When the leveler is run, the scheduler is also run, and activities may be modified even if Edit Activities is disabled.

If Enable is selected, the Enable Schedule privilege is also selected and cannot be changed.
Applies to: Schedule

Merge Activities to Baseline

Enables users to run the merge process for activities in a scenario, a baseline, or the current schedule to a baseline from the Schedule Comparison page. Activities with variances will display in the Activities list.

If Enable is selected, the Merge Mode toggle displays on the Schedule Comparison page.
Applies to: Schedule

Relationships

Enables users to add, edit, and delete relationships between activities in a project baseline. To use this feature, the Add Baselines and Edit Baselines privileges must also be selected.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, Add and Edit are also selected and cannot be changed.

Applies to: Schedule

Schedule

Enables users to run the scheduler in a project baseline. To use this feature, the Add Baselines and Edit Baselines privileges must also be selected. When the scheduler is run, activities may be modified even if Edit Activities is disabled.

Applies to: Schedule

Schedule (Scenarios)

Activities

Enables users to add, edit, and delete activities in a project scenario. To use this feature, the View Scenarios privilege must also be selected. To view or edit scenario activity or assignment costs, the View Project Costs/Financials and Edit Project Costs/Financials privileges must also be selected. Some cost fields may be indirectly modified by editing fields they are connected to, even if Edit Project Costs/Financials is disabled. To manage risks associated with activities in the scenario, the appropriate Risk privileges must also be selected.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, Add and Edit are also selected and cannot be changed.

Applies to: Schedule

Level

Enables users to level resources and roles in a project scenario. To use this feature, the View Scenarios privilege must also be selected. When the leveler is run, the scheduler is also run, and activities may be modified even if Edit Activities is disabled.

If Enable is selected, the Enable Schedule privilege is also selected and cannot be changed.

Applies to: Schedule

Merge Activities to Scenario

Enables users to run the merge process for activities in a scenario, a baseline, or the current schedule to a scenario from the Schedule Comparison page. Activities with variances will display in the Activities list.

If Enable is selected, the Merge Mode toggle displays on the Schedule Comparison page.

Applies to: Schedule

Relationships

Enables users to add, edit, and delete relationships between activities in a project scenario. To use this feature, the View Scenarios privilege must also be selected.

If Add is selected, Edit is also selected and cannot be changed. If Delete is selected, Add and Edit are also selected and cannot be changed.

Applies to: Schedule

Schedule

Enables users to run the scheduler in a project scenario. To use this feature, the View Scenarios privilege must also be selected. When the scheduler is run, activities may be modified even if Edit Activities is disabled.

Applies to: Schedule

Scope

Approve/Reject Scope Change Requests

Enables users to approve or reject scope change requests, reject individual change items, withdraw approved change requests, and reopen rejected change requests and items. When this privilege is selected, the following add and edit privileges are also selected: Work Packages, Scope Items, Scope Assignments, and Scope Change Requests. The edit and view privileges for Project Costs/Financials are also selected.

PBS

Enables users to add, edit, or delete PBSs.

If you select the add privilege, edit is automatically selected. If you select the delete privilege, add and edit are automatically selected.

Scope Assignments

Enables users to add, edit, or delete scope item assignments. If you have the delete privilege, you can only delete work packages before the baseline is set.

If you select the add privilege, edit is automatically selected. If you select the delete privilege, add and edit are automatically selected.

Scope Change Requests

Enables users to add, edit, or delete scope change requests and pending change items in the Scope Item Changes, Work Package Changes, Scope Item Change Details, and Work Package Change Details pages. This privilege also allows users to add and edit scope items on the Scope Item Change Details page if the user also has the corresponding add and edit Scope Items privileges. Also allows users to add and edit work packages and scope assignments on the Work Package Change Details page if the user also has the corresponding add and edit Work Packages and Scope Assignments privileges.

If you select the add privilege, edit is automatically selected. If you select the delete privilege, add and edit are automatically selected.

Scope Items

Enables users to add, edit, or delete scope items. If you have the delete privilege, you can only delete work packages before the baseline is set.

If you select the add privilege, edit is automatically selected. If you select the delete privilege, add and edit are automatically selected.

Work Packages

Enables users to add, edit, or delete work packages. If you have the delete privilege, you can only delete work packages before the baseline is set.

If you select the add privilege, edit is automatically selected. If you select the delete privilege, add and edit are automatically selected.

Create a Portfolio Permission Set

Create portfolio permission sets to determine a user's level of access to each portfolio. Users can only access portfolios that they have been assigned.

To create a portfolio permission set:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Permissions**, and then select **Portfolio**.
- 4) On the **Portfolio** permission sets page, select **+ Add**.
- 5) In the **Name** field, enter a unique name.
- 6) In the **Description** field, enter a description of the permission set.
- 7) In the **Privileges** section, expand each category to assign privileges.
- 8) Select **Save**.
- 9) In the **Summary & Settings** panel, select **✕ Close**.

Notes:

- To assign users to a portfolio permission set, use the **Security** page in the Portfolio Summary & Settings panel.
- To assign a default portfolio permission set to a user group, use the **Default Permissions** tab of the **User Groups** page.

Tips

- ▶ Provide clear permission set names and descriptions to help you manage permissions.
- ▶ You can duplicate existing permission sets by selecting the **+ Add ▼** menu and selecting **Duplicate**. The Administrator (System) permission set cannot be duplicated.

- ▶ You can delete a permission set by selecting the profile and selecting **×** **Delete**. You can only delete permission sets that are not currently in use. The View Only (System) and Administrator (System) global permission sets cannot be deleted.

Portfolio Security Privileges Definitions

When creating a permission set, use the following definitions to determine the functionality each privilege controls and other privileges that may also be required. Selecting one privilege may automatically select other privileges if they are required for the original privilege to function properly. These other privilege selections cannot be changed without affecting the selection of the original privilege. Any privilege requirements are noted in the definition.

Budget Plan

Approve Budget Scenario

Enables users to approve scenarios associated with budget plans.

Budget Scenarios

Enables users to add, edit, or delete budget scenarios.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add and edit are automatically selected and cannot be changed.

Propose Budget Scenario

Enables users to launch a Propose workflow from the Budget Planning and Selection Analysis views.

This privilege allows a user to launch workflows using the actions button or menu even if they do not have the Start Workflow privilege.

Send Budget Scenario for Approval

Enables users to launch the Send for Approval workflow from the Budget Planning and Selection Analysis views.

This privilege allows a user to launch workflows using the actions button or menu even if they do not have the Start Workflow privilege.

Send Budget Scenario for Review

Enables users to launch the Send for Review workflow from the Budget Planning and Selection Analysis views.

This privilege allows a user to launch a workflow using the action button or menu even if they do not have the Start Workflow privilege.

Funds

Funding

Enables users to add, edit, delete, and view funding for portfolios.

If you select the add privilege, edit and view are automatically selected for both Funding and Funding Costs/Financials and cannot be changed. If you select the delete privilege, add, edit, and view for Funding and Funding Costs/Financials are automatically selected and cannot be changed.

Funding Costs/Financials

Enables users to edit or view funding costs and financials.

If you select the edit privilege, view is automatically selected and view privileges for Funding are also enabled.

Portfolio

Assign Workflows to Portfolios

Enables users to specify which workflows the system initiates when budget plans are set to the Send for Review, Propose, and Send for Approval phases.

Portfolio Costs

Enables users to view or edit portfolio costs.

If you select the edit privilege, view is automatically selected and edit is selected for Portfolios and cannot be changed.

Portfolio Dashboards

Enables users to add, edit, and delete dashboards at the portfolio level.

You must assign all privileges.

Portfolio Thresholds

Enables users to add, edit, or delete portfolio monitoring thresholds.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add, edit, and view are automatically selected and cannot be changed.

Portfolios

Enables users to edit or delete portfolios.

If you select the delete privilege, edit is automatically selected and cannot be changed.

Promote Report to Portfolio

Enables users to promote a user report to portfolio level.

Snapshots

Enables users to add or delete snapshots.

If you select the delete privilege, add is automatically selected and cannot be changed.

Resource Plan

Approve Resource Scenario

Enables users to approve scenarios associated with resource plans.

If you select enable, the edit privilege for Resource Scenarios is automatically selected and cannot be changed.

Propose Resource Scenario

Enables users to launch a Propose workflow from the Resource Planning page.

This privilege allows a user to launch workflows using the actions button or menu even if they do not have the Start Workflow privilege. If you select enable, the edit privilege for Resource Scenarios is automatically selected and cannot be changed.

Resource Scenarios

Enables users to add, edit, or delete resource scenarios.

If you select the add privilege, edit is automatically selected and cannot be changed. If you select the delete privilege, add, and edit are automatically selected and cannot be changed.

Send Resource Scenario for Approval

Enables users to launch the Send for Approval workflow from the Resource Planning page.

This privilege allows a user to launch workflows using the actions button or menu even if they do not have the Start Workflow privilege. If you select enable, the edit privilege for Resource Scenarios is automatically selected and cannot be changed.

Send Resource Scenario for Review

Enables users to launch the Send for Review workflow from the Resource Planning page.

This privilege allows a user to launch a workflow using the action button or menu even if they do not have the Start Workflow privilege. If you select enable, the edit privilege for Resource Scenarios is automatically selected and cannot be changed.

Dictionaries

Workspace-level dictionaries are repositories of items that can be used across the application, without having to create the same items for each object. Workspace-level dictionary items can be used in the projects, portfolios, programs, ideas, and child workspaces within the workspace. Dictionaries provide for efficient reuse of organizational data. For example, you can create multiple calendars or codes in a workspace and then apply them across activities in multiple projects in that workspace.

Analysis Views Overview

Analysis views are dynamic tools portfolio budget planners use to view, compare and analyze budget plan data. Analysis views are built upon customizable layout types, charts, and grids that capture information from budget plan scenarios. Charts provide a visual representation of data, while grids enable planners to view plan values and costs in greater detail.

Create analysis views to simplify scenario comparisons, and speed up the planning process. Budget planners use analysis views along with the portfolios Budget Planning page during selection analysis to determine the best mix of projects for a portfolio budget plan. While the Budget Planning page provides time phased budget data, analysis views provide fast and accurate insights into additional project attributes. Planners use analysis views to get a direct comparison of project data, such as Return on Investment, Net Present Value, and Profitability Index, and to evaluate projects for potential inclusion in a budget plan.

In the **workspace-level settings** (see "**Add an Analysis View to a Workspace**" on page 49), you can create analysis views and then publish them to any portfolio in your workspace. You can also view and edit existing analysis views for the portfolios in your workspace. You can make any analysis view in your workspace available to as many of your portfolios as necessary. In the **portfolio-level settings** (see "**Add an Analysis View to a Portfolio**" on page 93), you can add analysis views or associate an analysis view from the parent workspace or another portfolio in the workspace.

Add an Analysis View to a Workspace

Add an analysis view to create a meaningful display of portfolio budget plan scenario data. When adding an analysis view, you can select a view type to specify the arrangement for the charts and grids included in the view.

After creation, workspace analysis views can be configured and made available to the portfolios in your workspace.

To add an analysis view to a workspace:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Analysis Views**.
- 4) Select **+ Add View** , and select a view type.
- 5) In the **Name** dialog box, enter a unique name for the analysis view.
- 6) Select **OK**.
- 7) Select **Save**.
- 8) In the **Summary & Settings** panel, select **✕ Close**.

Tips

- ▶ When editing an Analysis View, select the **Change Type** menu on the **View** tab, and select a type to change the layout of the analysis view after you have created it.

This setting is used in the following apps:

 **Cost and Funds**

Configure an Analysis View in a Workspace

You can configure charts and grids to tailor them to your analysis views.

At the workspace level, you can choose which portfolios the analysis view should be available to and whether other users have the ability to customize the view.

To configure an analysis view in a workspace:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Analysis Views**.

- 4) Select an analysis view.
- 5) On the **View** tab, select the chart pane or grid pane you would like to modify, and select **Configure**.
- 6) Configure your chart or grid:
 - ▶ If you selected a chart, use the **Configure Chart** wizard to change the properties of the chart.
 - ▶ If you selected a grid, use the grid **Settings** dialog box to change the properties of the grid.
- 7) On the **Settings** tab, configured the following columns:
 - ▶ **Portfolios**: Select a check box to make the current analysis view available to that portfolio.
 - ▶ **Publish View**: Select to enable users to access the analysis view from the **Published Views** page for the portfolio. If disabled, the view will not be displayed. The analysis view must be available to the portfolio before you can publish it.
 - ▶ **User Customization**: Select to allow a user with the appropriate privileges to customize the analysis view while viewing data.
- 8) Select **Save**.
- 9) Select **Save**.
- 10) In the **Summary & Settings** panel, select **✕ Close**.

This setting is used in the following apps:

 **Cost and Funds**

Publish an Analysis View to a Portfolio

Publish analysis views to portfolios to enable planners to evaluate project selection based on key performance indicators and other project attributes. You can publish multiple views to a single portfolio, enabling planners to switch between views and compare data based on different sets of criteria. Analysis views published to portfolios can also be viewed in the portfolio-level settings.

To publish an analysis view to a portfolio:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Analysis Views**.
- 4) Select an analysis view.
- 5) On the **Settings** tab, configured the following columns:
 - ▶ **Portfolios**: Select a check box to make the current analysis view available to that portfolio.
 - ▶ **Publish View**: Select to enable users to access the analysis view from the **Published Views** page for the portfolio. If disabled, the view will not be displayed. The analysis view must be available to the portfolio before you can publish it.

- ▶ **User Customization:** Select to allow a user with the appropriate privileges to customize the analysis view while viewing data.
- 6) Select **Save**.
 - 7) In the **Summary & Settings** panel, select **✕ Close**.

This setting is used in the following apps:

 **Cost and Funds**

Codes Overview

Codes help you categorize your data objects based on characteristics that they share. If you have many instances of an object, codes help you group and filter potentially vast amounts of information spanning different areas of the organization. You can also use codes to arrange objects hierarchically. The application supports an almost unlimited number of codes and values; therefore, you can establish as many as you need to meet the filtering, sorting, and reporting requirements of your organization.

At the workspace level, codes can be created and associated with a wide variety of objects available within the workspace. At the project level, you can create activity and task codes that will only be available to a single project.

Workspace-level codes can be created for the following objects:

- ▶ Activities
- ▶ Commitments
- ▶ Contracts
- ▶ Custom Logs
- ▶ Files
- ▶ Funds
- ▶ Ideas
- ▶ Portfolios
- ▶ Programs
- ▶ Projects
- ▶ RFIs
- ▶ Reports
- ▶ Resources/Roles
- ▶ Risks
- ▶ Scope Assignments
- ▶ Scope Items
- ▶ Strategies
- ▶ Submittals
- ▶ Tasks
- ▶ Task Constraints
- ▶ WBSs
- ▶ Work Packages

Add a Code

Using Colors with Activity Codes Video

Create codes to help categorize and track objects based on attributes they share.

You can apply workspace-level codes to one or more of the following objects: Activities, Custom Logs, Files, Funds, Ideas, Portfolios, Programs, Projects, Reports, Resources/Roles, Risks, Scope Assignments, Scope Items, Strategies, Task Constraints, Tasks, WBSs, and Work Packages.

To add a code to one or more objects:

- 1) **Navigate to the Codes dictionary page** (see page 248).
- 2) In the table, select **+ Add Code** ▼.
- 3) In the new row, in the **Name** and **ID** columns, enter a name and ID for the new code.
- 4) In the **Applies to** panel, select one or more objects to apply the code.
- 5) Save your changes:
 - a. Select **Save**.
 - b. In the **Summary & Settings** panel, select **× Close**.

You can also perform this task on a single object from the Summary & Settings panel in **Primavera Cloud**:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Defaults & Options**.
- 4) Select the object, and then select the **Codes** tab.

Note: To add a code to this object that exists in the current or parent workspace, select **Assign**. Codes that display for the current workspace are the codes assigned to other objects in the workspace. Codes that display from the parent workspace are only the codes that are assigned to the same object type.

Tips

- ▶ Individual activity code values can be associated with a color, which can then be used to color activity bars in the Gantt chart on the **Activities** page.
- ▶ The color associated with code values can be displayed on the **Portfolio Scorecard** page.

This setting is used in the following apps:

 **Cost and Funds**

 **Custom Logs**

 **Dashboards**

 **Files**

 **Portfolio Analysis** **Reports** **Resources** **Risk** **Schedule** **Scope** **Strategic Alignment** **Tasks** **Workflows and Forms**

Add a Value to a Code

Add values to codes so that you can group, sort, and filter objects based on their code values.

To add a code value:

- 1) **Navigate to the Codes dictionary page** (see page 248).
- 2) In the table, select a code or code value.
- 3) Do either of the following:
 - ▶ In the toolbar, select the **+ Add Code ▼** menu, and then select **Add Code Value**. A new value is beneath the selection.
 - ▶ In the table, select the **⚙ Context** menu, and select **Add Code Value**.
- 4) In the **Name** and **ID** columns, enter a name and ID for the code value.
- 5) (Optional) In the **Color** column, select a color for the code value.
 - ▶ Code value colors are used on the **Activities** and **Task List** pages and workspace dashboard charts to color activity bars in the Gantt chart according to each activity's or task's assigned codes and code values.
 - ▶ The color associated with code values can be displayed on the **Portfolio Scorecard** page.
- 6) Save your changes:
 - a. Select **Save**.
 - b. In the **Summary & Settings** panel, select **✕ Close**.

You can also perform this task on a single object from the Summary & Settings panel in **Primavera Cloud**:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select **⚙ Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Defaults & Options**.
- 4) Select the object, and then select the **Codes** tab.

This setting is used in the following apps:

-  **Cost and Funds**
-  **Custom Logs**
-  **Dashboards**
-  **Files**
-  **Portfolio Analysis**
-  **Reports**
-  **Resources**
-  **Risk**
-  **Schedule**
-  **Scope**
-  **Strategic Alignment**
-  **Tasks**
-  **Workflows and Forms**

Update the Owing Workspace of a Code

Update the owning workspace of a code to move it to another workspace that you are assigned. If you move the code to a workspace that is higher in the workspace hierarchy, it will be available to more workspaces.

To update the owning workspace of a code:

- 1) **Navigate to an object configuration page** (see page 249).
- 2) On the object page, select the **Codes** tab.
- 3) On the **Codes** tab, select a code.
- 4) Select the  **Context** menu, and then select **Change Owing Workspace**.
- 5) In the **Select Workspace** dialog box, select the new owning workspace, and select **Select**.
- 6) Save your changes:
 - a. Select **Save**.
 - ▶ In the **Summary & Settings** panel, select **Close**.

This setting is used in the following apps:

-  **Cost and Funds**
-  **Custom Logs**
-  **Dashboards**
-  **Portfolio Analysis**
-  **Reports**

 Resources

 Risk

 Schedule

 Scope

 Strategic Alignment

 Tasks

 Workflows and Forms

Evaluation Categories Overview

Evaluation Overview Video

Define project, program, and idea evaluation categories based off of organizational business drivers. Evaluation categories are grouped into an evaluation matrix, which you can use to rank and assess your projects, programs, and ideas against your company's requirements and standards. In portfolio management, overall project and program evaluation scores are then viewed in the Prioritization Matrix.

Evaluation Matrix Overview

An Evaluation Matrix utilizes evaluation categories and subcategories to assess projects. There is one evaluation matrix per workspace.

Helpful Definitions

Evaluation Categories: User-defined categories that help to assess projects, programs, or ideas in an evaluation matrix and projects or programs in a prioritization matrix.

Evaluation Matrix: Utilizes evaluation categories and subcategories to assess projects.

Evaluation Score: The quantitative score of a project based on the qualitative ranking of projects.

Evaluation Subcategories: Divisions of evaluation categories with assigned ranks, weights, types, and statuses.

Prioritization Matrix: Utilizes evaluation categories and subcategories to assess multiple projects or programs.

Ranks: The rating or position assigned to an evaluation subcategory indicating its relative importance or performance level based on that subcategory's assigned weight.

Weight Percent: The weight percentages for the evaluation ranking.

Evaluation Categories and Subcategories

The evaluation matrix includes evaluation categories, each with their own subcategories. For an Evaluation Matrix to have an Active status, there must be at least one subcategory in each category with a status of Enabled. When all subcategories of a category in an Evaluation Matrix have status Disabled, the Evaluation Matrix will have an Inactive status and will not be usable.

An Evaluation Matrix is inherited from a parent workspace. However, in the inherited evaluation matrix, subcategories can be added, removed, disabled, or their weight adjusted in descendant workspaces. Individual evaluation subcategories can have an owning workspace and are considered a shared data separate from the evaluation matrix. A user with the Edit permission for Evaluation Categories can change the owning workspace for individual evaluation subcategories. This gives users a lot of flexibility in matrix configurations for their workspace.

Subcategory Behavior in Parent and Child Workspaces

Even if a parent and child workspace share subcategories, any changes in the weight of the subcategory in the parent workspace will not update the weight of that same subcategory in the child or any descendant workspaces. When a subcategory is disabled in a workspace, that subcategory is then disabled in descendant workspaces as well. The only way to enable a disabled subcategory is through the workspace where it was originally disabled. You can only delete a subcategory in its owning workspace. Select Used By to see a list of workspaces where the subcategory is currently in use.

Evaluation Matrix Scores and the Prioritization Matrix

Due to the possible independent subcategories and weights depending upon user configuration, the same Evaluation Matrix can result in different scores for two workspaces in the same hierarchy. Multiple project evaluation scores can be compared in the Prioritization Matrix, allowing you to prioritize and select the right project to pursue according to your company's requirements and standards. See Prioritization Matrix for more information.

Add an Evaluation Matrix

There is one evaluation matrix per workspace. The evaluation matrix includes evaluation categories, each with their own subcategories. Add evaluation categories to rank and assess projects, programs, and ideas. See *Evaluation Matrix Overview* (on page 55) for more information.

To add an evaluation matrix:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Evaluation Categories**.
- 4) Select **+ Add**.
- 5) In the new row, complete the following fields for a category:
 - ▶ **Name:** The name of the evaluation category.
 - ▶ (Optional) **Description:** Details describing the evaluation category.
 - ▶ **Weight:** The relative weight of the sibling evaluation node to indicate contribution of a given node to its parent evaluation node.

- ▶ **Weight Percent:** The weight or relative rank of the evaluation node compared to its siblings. This value indicates the percentage that the evaluation node is contributing to the parent strategy. The Weight Percent for all sibling evaluation nodes equals 100. This field is read-only.
- 6) (Optional) Select the  **Context** menu, and select **Add Subcategory**.
 - 7) In the new row, complete the same fields for the subcategory including the following option:
 - ▶ **Type (Optional):** Determines the type of ranking applied to a subcategory. Select **Manual** (Default) or **Thresholds**. When **Thresholds** is selected, you have the option to configure specific fields to associate with each rank.
 - 8) (Optional) In the **Project Thresholds**, **Program Thresholds**, and **Ideas Thresholds** detail windows, configure the ranking for the subcategory when **Thresholds** is selected as the **Type**. Make any of the following modifications:
 - ▶ **Name:** Modify the names as needed. This option is available in the Project Thresholds, Program Thresholds, and Ideas Thresholds details window.
 - ▶ **Description:** Explains the ranking of the subcategory.
 - ▶ **Color:** Select a color representing the evaluation ranking.
 - ▶ **Field:** Determine a specific map to a ranking.
 - ▶ **Operator:** Select an operator to determine how the ranking is applied.
 - ▶ **Value:** Enter a value to determine the evaluation ranking.
 - ▶ **High Value:** Enter a high value to determine the evaluation ranking. This field is only required if the Within or Not Within Range is selected as the Operator.
 - ▶ **Reverse Ranks Order:** Select the icon to reverse the order of the ranks. Weight percentage values remain the same.
 - ▶ **Weight Percent:** The weight percentages for the evaluation ranking. The default values are evenly distributed based on the number of selected ranks. You can manually specify different percentage values.
 - 9) In the **Ranks** detail window, configure the ranking for the subcategory. A scale is preconfigured for you. Make any of the following modifications:
 - ▶ **Scale:** Determine how many options are available on the rating scale. You can display up to 21 options. When increasing or decreasing the scale, you must confirm your selection in the confirmation window. When decreasing the rank scale, additional rank details are deleted, and weight percent values are reset based on the selected rank.
 - ▶ **Reverse Ranks Order:** Select the icon to reverse the order of the ranks. Weight percentage values remain the same.
 - ▶ **Name:** Modify the names as needed. For a scale number greater than 9, a default generic rank name will be added such as Rank 10 and Rank 11.
 - ▶ **Weight Percent:** The weight percentages for the evaluation ranking. The default values are evenly distributed based on the number of selected ranks. When additional ranks are added, the newly created weight percent fields are defaulted to zero. When a rank is removed the weight percent values are reset. You can manually specify different percentage values.
 - ▶ **Color:** Select a color representing the evaluation ranking.
 - ▶ (Optional) **Description:** Details describing the rating. When the scale is increased, new blank description fields are displayed.

10) Select **Save**.

11) In the **Summary & Settings** panel, select **✕ Close**.

Tips

- ▶ If a subcategory is currently in use it cannot be deleted.
- ▶ You can add or disable subcategories in inherited evaluation matrices.
- ▶ For an Evaluation Matrix to have an Active status, there must be at least one subcategory in each category with a status of Enabled. When all subcategories of a category in an Evaluation Matrix have status Disabled, the Evaluation Matrix will have an Inactive status and will not be usable.

This setting is used in the following apps:

 **Portfolio Analysis**

 **Strategic Alignment**

Enable or Disable an Evaluation Matrix Subcategory

An evaluation model may mature over time, especially in complex or long-term projects. Because subcategories currently in use cannot be deleted, you can update your evaluation matrix by enabling or disabling existing subcategories. For more information about Evaluation Matrices, see **Evaluation Matrix Overview** (on page 55).

To enable or disable an existing evaluation matrix subcategory:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Evaluation Categories**.
- 4) Select the  **Context** menu of an existing subcategory, and select **Enable** or **Disable**.
- 5) Select **Save**.
- 6) In the **Summary & Settings** panel, select **✕ Close**.

Note: The weight of the scores is recalculated when subcategories are enabled or disabled.

Tips

- ▶ The **Status** column of the Evaluation Matrix indicates whether the subcategory is enabled or disabled.
- ▶ Select the  **Context** menu of an existing subcategory and select **Used By** to view the list of workspaces currently using the subcategory.
- ▶ Project and Portfolio scores will be recalculated based on updated subcategory status.
- ▶ When a subcategory is disabled, it will not appear in the Portfolio Analysis Prioritization Matrix once scores are recalculated.
- ▶ You can add or disable subcategories in inherited evaluation matrices.

- ▶ For an Evaluation Matrix to have an Active status, there must be at least one subcategory in each category with a status of Enabled. When all subcategories of a category in an Evaluation Matrix have status Disabled, the Evaluation Matrix will have an Inactive status and will not be usable.

This setting is used in the following apps:

 **Portfolio Analysis**

 **Strategic Alignment**

Update the Owing Workspace of an Evaluation Matrix Subcategory

In an Evaluation Matrix, individual evaluation subcategories can have their own owing workspace and are considered a shared data separate from the evaluation matrix. For more information about Evaluation Matrices, see ***Evaluation Matrix Overview*** (on page 55).

You can change a subcategory's owing workspace only under the following conditions:

- ▶ The user has the Edit permission in Workspace > Configuration > Evaluation Categories.
- ▶ Only one subcategory is selected.
- ▶ The current workspace is the owing workspace of the selected subcategory.

To change the owing workspace of an existing evaluation matrix subcategory:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Evaluation Categories**.
- 4) Select the  **Context** menu of an existing subcategory, and select **Change Owing Workspace**.

Note: This option is only available for users who have the Edit permission granted in Workspace > Configuration > Evaluation Categories.

- 5) In the **Select Workspace** dialog box, select the new owing workspace from the list of workspace for the selected subcategory. You can also use the search.

Note: Only workspaces that use the same Evaluation Matrix and workspaces in the hierarchy up to the owing workspace of the subcategory are available for selection.

- 6) Select **Select**.
- 7) Select **Save**.
- 8) In the **Summary & Settings** panel, select  **Close**.

Tips

- ▶ Select **Used By** in the  **Context** menu to see a list of workspaces where the selected subcategory is currently in use.

This setting is used in the following apps:

-  **Portfolio Analysis**
-  **Strategic Alignment**

Measures Overview

Measures are user-defined metrics for quantitatively monitoring the health and performance of your data. You can create separate measures for **portfolios or strategies** (see "**Add a Measure for a Portfolio or Strategy**" on page 61), **programs** (see "**Add a Program Measure**" on page 78), and **projects** (see "**Add a Project Measure**" on page 83). For example, you can create measures to capture the number of on-time projects in your portfolio or program, the return on investment of individual strategies, or the percentage of critical activities in a project. Measures can be added as part of the view on a variety of pages throughout the application.

Depending on the context, different object types are available to be used as the measure's aggregation source, whose data is captured, aggregated, and displayed as the measure's value. The value can be a cost, number, or percentage. Measures have two dimensions: actual and target. The actual value is required, and indicates the current value of the data the measure is defined to track. The target value is optional, and can be used when comparing the measure against a defined threshold that you want to meet. Establish thresholds and indicators to visually represent the status of a measure. Actual and target values can be calculated using a formula or they can be set for manual entry. When defining formulas for the actual or target value, choose whether the expression is based on attributes of the measure's aggregation source object or based on existing measures. Attributes and existing measures cannot be used in the same expression for a measure.

Measures are created at the workspace level and are available to the owning workspace's hierarchy depending on their sharing method. To use a measure for a particular portfolio or strategy within a workspace, the measure must first be associated with that portfolio or strategy. Program and project measures do not need to be associated before they can be used in workspaces where they are available. Use the following table to determine where different measure types are configured, the pages where they are available to be used, and the objects that can be used as an aggregation source.

Configuring Measures

Measure Type	Configuration Location	Available To	Aggregation Source
Portfolio	Workspace Measures Dictionary	<ul style="list-style-type: none"> ▶ Portfolios Inventory ▶ Portfolio: Scorecard ▶ Workspace: Summary Scorecard 	Project
Strategy	Workspace Measures Dictionary	<ul style="list-style-type: none"> ▶ Workspace: Strategy List, Strategy Scorecard 	Project
Program	Program Defaults & Options	<ul style="list-style-type: none"> ▶ Programs Inventory 	Project, Program
Project	Project Defaults & Options	<ul style="list-style-type: none"> ▶ Projects Inventory ▶ Portfolio: Budget Planning, Selection Analysis, Scenario Comparison, Scorecard 	Activity, Risk, Program, Project

Measure tracking is also supported by Primavera Cloud's reporting and dashboard functionality.

Add a Measure for a Portfolio or Strategy

Use the workspace Measures dictionary to add measures for portfolios and strategies. Measures use expressions to quantitatively monitor data important to you. A measure's aggregation source indicates the object type whose data is being captured. Portfolio and strategy measures support projects as an aggregation source and capture data from the projects within a portfolio or associated with a particular strategy node.

The target and actual values used for measures can be configured for manual entry or using a formula. Manual values are entered on pages where the measures appear. Formulas are defined by creating expressions using project attributes or using existing dictionary measures. Project attributes include project-level fields and project measures that exist in the workspace. Measures that use existing measures are called measure-based measures. Measure-based measure expressions can use one or more measures available in the Measures dictionary, or they can use measures referencing specific portfolios or strategies. When choosing a measure, you can select its target or actual expression. Attributes and measure-based measures cannot be used in the same expression.

For information on creating advanced formulas for measures, refer to the *Oracle Primavera Cloud Expression Language Guide on Oracle Help Center*.

After the measure is created, it must be associated with a portfolio or strategy within the workspace before it can monitor project data. See ***Associate a Measure with a Portfolio*** (on page 65) or ***Associate a Measure with a Strategy*** (on page 69) for more information.

To add a measure for a portfolio or strategy:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Measures**.
- 4) Select **+ Add**.
- 5) In the table, complete the following fields:
 - ▶ **Name**: The name of the measure.
 - ▶ (Optional) **Description**: Details about the measure.
 - ▶ **Data Type**: The type of data that the measure generates. Options include Cost, Number, and Percentage.
 - ▶ **Target Type**: Determines whether the Target value of the measure is manually entered or calculated using a formula. Entering a target value is not required.
 - ▶ **Actual Type**: Determines whether the Actual value of the measure is manually entered or calculated using a formula.
 - ▶ **Measure Based**: Determines whether the measure is created using existing measures. This option is available when either Target Type or Actual Type is set to Formula.
 - ▶ **Tracking Frequency**: Determines how frequently you want to monitor the measure. For example, if a formula-based measure's tracking frequency is set to Weekly, it is computed every week. If it is a manual measure with Weekly tracking frequency, you can enter measure values in weekly buckets.
 - ▶ **Aggregation Source**: Determines whether you are capturing project or program data in the measure.
- 6) If **Target Type** or **Actual Type** is set to Formula, select the **Data Source** detail window to configure their formulas.

Note: The Data Source detail window is not displayed if both types are set to Manual.

- 7) In the **Data Source** detail window, select any of the following sections, if applicable:
 - ▶ **Actual**: Formula that calculates the current values for the measure.
 - ▶ (Optional) **Target**: Formula that calculates a value that can be used when setting thresholds to measure against. See ***Set a Threshold for a Portfolio or Strategy Measure*** (on page 64) for more information.
 - ▶ **Base Expression**: The base expression for the Actual or Target formulas when **Percentage** is the selected **Data Type**.
- 8) In the selected section, enter a formula manually or using a formula template.
 - a. To enter a formula manually:

1. Select the **Field** list to locate the field to use in the calculation.
When the **Measure Based** option is selected, the Field list will only show measures available to use in the formula. In the list, select **Referenced Measures** to select measures that are currently assigned to portfolios or strategies.
2. Select **Portfolio** or **Strategy** to specify the context for the measure associated to the formula. You cannot have a mix of portfolio and strategy contexts in a measure.

Note: Portfolio context measures pull values from the projects associated with the portfolio, and Strategy context measures pull from the projects associated with the strategy. If a measure is displayed in a context not specified in the formula, the measure will not display a value.

3. Select **Insert**.
4. Select the mathematical symbols for the expression.
5. Add any other fields or symbols needed for the expression.
- b. To use a formula template:
 1. In the **Aggregation Type** list, select the calculation needed for the formula. The list is only enabled when **Measure Based** is not selected.
 2. Select **Portfolio** or **Strategy** to specify the context for the measure associated to the formula. You cannot have a mix of portfolio and strategy contexts in a measure.

Note: Portfolio context measures pull values from the projects associated with the portfolio, and Strategy context measures pull from the projects associated with the strategy. If a measure is displayed in a context not specified in the formula, the measure will not display a value.

3. Select **Insert**. The formula template appears.
4. To use the template, highlight or delete **Field** or **Filter**, including the angle brackets, select a field from the **Field** list, and select **Insert**. Repeat for any additional fields or fields to filter by.
5. Add any other fields or symbols needed for the expression.
- 9) Select **Validate Formula**.
- 10) Select **Save**.
- 11) In the **Summary & Settings** panel, select **✕ Close**.

Tips

- ▶ After the measures process is complete, you can review the measures log to view details about the process, including process start and finish and what portfolios or strategies were included. You can access the measures log from the **Manage Services** page.
- ▶ Select the  **Context** menu next to an existing measure, and then select **Duplicate** to duplicate the measure. Duplicated measures do not maintain the portfolio or strategy associations of the original measure.

This setting is used in the following apps:

 **Dashboards**

Portfolio Analysis

Strategic Alignment

Set a Threshold for a Portfolio or Strategy Measure

Set thresholds for measures to see the status of measures using visual indicators.

To set a threshold for a portfolio or strategy measure:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Measures**.
- 4) In the table, select the measure.
- 5) Select the **Thresholds** detail window.
- 6) Select **+ Add**.
- 7) In the **Operator** field, select a parameter to use in the threshold calculation.
- 8) In the **Value** field, enter a threshold value to use in the calculation.
- 9) In the **High Value** field, enter the top of the range when the operator is set to Within Range or Not Within Range.
- 10) In the **Indicator Color** field, select a color to visually represent status when the threshold is met.
- 11) In the **Indicator Icon** field, select an icon to visually represent status when the threshold is met.
- 12) In the **Goal** list, select whether a high or low value indicates a positive change in the measure.
For example, High Values would be selected when measuring Net Savings to represent that an increase in value is a positive change.
- 13) In the **Threshold Computation Method**, select how thresholds are calculated using Actual and Target values.
 - ▶ **Actual Value**: The current value. This is the value as calculated by the expression for Actual on the Data Source tab.
 - ▶ **Percent of Target**: The percentage of the actual value compared to the target value.
- 14) Add as many thresholds as necessary for the measure.
- 15) Select **Save**.
- 16) In the **Summary & Settings** panel, select **✕ Close**.

This setting is used in the following apps:

Dashboards

Portfolio Analysis

Strategic Alignment

Associate a Measure with a Portfolio

Before a measure can be used to track data on projects or programs in a portfolio, it must first be associated with the portfolio. This will also make the measure available to add to views on pages where portfolio measures are supported.

To associate a measure with a portfolio:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Measures**.
- 4) In the table, select the measure.
- 5) Select the **Portfolios** detail window.
- 6) Select  **Link**.
- 7) In the **Link Portfolios** dialog box, select one or more portfolios, and then select **Link**.
- 8) Select **Save**.
- 9) In the **Summary & Settings** panel, select **✕ Close**.

You can also perform this task from the Portfolios inventory panel:

- 1) In the object selector, select  **Portfolios**, and then select **View All Portfolios**.
- 2) In the table, select the portfolio, and select the **Measures** detail window.

This setting is used in the following apps:

-  **Portfolio Analysis**
-  **Strategic Alignment**

Working with Measures

Measures are configured metrics used to monitor the health and status of a portfolio, strategy, program, or project. Measures can be created using aggregates of object attributes, by using existing measures, or set for manual entry. Object attributes and existing measures cannot be used in the same expression for a measure.

Measures have two dimensions: actual and target. A target value can optionally be defined to use when setting thresholds for the measure. Thresholds and indicators are defined to visually represent the status of a measure.

Use the workspace Measures dictionary to create portfolio and strategy measures, the Program Defaults & Options page to create program measures, and the Project Defaults & Options page to create project measures. See **Measures Overview** (on page 60) for more information.

For information on creating advanced formulas for measures, refer to the *Oracle Primavera Cloud Expression Language Guide on Oracle Help Center*.

Measures

Name *	Description	Data Type	Target Type	Actual Type	Measure Based	Status
project count measure		Number	Manual	Formula	<input type="checkbox"/>	Enabled
Total Cost		Cost	Formula	Formula	<input type="checkbox"/>	Enabled

Total: 2 [Download](#)

Data Source Thresholds Portfolios Strategies

Aggregation Type: **1** Sum **2** Field: Proposed Role Allocation Cost **3** **4** Validate Formula

Target: 1 sum(object.Project_currentApprovedBudgetBase)

Actual: 1 sum(object.Project_atCompletionCost,object.Project_status=='ACTIVE')

Table of Screen Highlights

Item	Description
1	<p>Aggregation Type: Provides a template for formulas that use Sum, Min, Max, Count, and Average equations. Select the Aggregation Type, and select Insert. For example, the Sum template displays the following:</p> <p>sum(< Field >,< Filter >)</p> <p>Replace <Field> with the name of the field to be summed. Optionally, replace <Filter> with a field that will filter the results by. Add any additional filter requirements using the mathematical symbols provided.</p>
2	<p>Field: Provides all the fields that can be used in formulas.</p> <p>If Measure Based is selected, only existing measures display. Select Referenced Measures in the Field list to view measures that are currently assigned to Portfolios or Strategies. Select either the actual or target value for the measure.</p> <p>Select a field name, and select Insert. The proper formatting for the field displays.</p>
3	<p>Mathematical Symbols: Used when defining formulas manually or when using the aggregation type template.</p>
4	<p>Validate Formula: Verifies the formula works.</p>

The following table provides examples of formulas that can be created. Total Cost is represented in the preceding image.

Table of Measure Examples

Measure Name	Data Type	Target	Actual	Base Expression (Actual)
Total Cost	Cost	sum(object.Project_currentApprovedBudgetBase)	sum(object.Project_atCompletionCost, object.Project_status=='Active')	
Projects on Time	Percentage		count(object.ProjectCode_Code, object.Project_scheduleVariance<10)	count(object.ProjectCode_Code)
Cost/ROI Ratio	Number		object.'PortfolioMeasure_Total Cost'/object.'PortfolioMeasure_Return on Investment' Note: This expression is Measure Based.	
Project Count	Number		count(object.ProjectCode_Code, object.Project_status=='Active')	
Return on Investment	Number		average(object.Project_returnInvestment)	
Net ROI	Number		0.25*Portfolios.get("Consulting", "Consulting Portfolio").'PortfolioMeasure_ROI' + 0.50*Portfolios.get("E&C", "E&C Portfolio").'PortfolioMeasure_ROI' + 0.50*Portfolios.get("Energy", "Energy Portfolio").'PortfolioMeasure_ROI' Note: This expression is Measure Based and references measures from other portfolios.	

Defining Thresholds

The following image provides an example of thresholds that can be set for the Total Cost example. These thresholds are used to determine how status for the measure is visually represented on pages where it is displayed.

Measures

Name *	Description	Data Type	Target Type	Actual Type	Measure Based	Status	Sharing Method	Added By	Owning Workspace
+ Add measure		Number	Formula	Formula	<input type="checkbox"/>	Enabled	Manual		
• Total Cost		Cost	Formula	Formula	<input type="checkbox"/>	Enabled	Manual		
Projects on Time		Number	Formula	Formula	<input type="checkbox"/>	Enabled	Manual		
Project Count		Number	Formula	Formula	<input type="checkbox"/>	Enabled	Manual		
Return on Investment		Number	Formula	Formula	<input type="checkbox"/>	Enabled	Manual		

Total: 4 [Download](#)

Data Sources **Thresholds** Portfolios Strategies

Goal: High Values Threshold Computation Method: Actual Value

Operator *	Value *	High Value	Indicator Color	Indicator Icon
+ Add threshold				
Within Range	50,000.00	750,000.00		!
Is Less Than	50,000.00			✓
Is Greater Than	750,000.00			⚠

Total: 4

Table of Screen Highlights

Item	Description
1	Goal: Determines whether a high or low value indicates a positive change in the measure.
2	Threshold Computation Method: Determines how thresholds are calculated using Actual and Target values. <ul style="list-style-type: none"> ▶ Actual Value: The current value. This is the value as calculated by the expression for Actual on the Data Source detail window. ▶ Percent of Target: The percentage of the actual value compared to the target value.
3	Operator: The operators necessary for comparing values in the thresholds.
4	Value: The values the operators use for comparison.
5	High Value: The top of the range when the operator is set to Within Range or Not Within Range.
6	Indicator Color: The color to visually represent status when the threshold is met.
7	Indicator Icon: The icon to visually represent status when the threshold is met.

Associate a Measure with a Strategy

Before a measure can be used to monitor strategy performance, it must first be associated with a strategy node. This will also make the measure available to add to views on pages where strategy measures are supported.

To associate a measure with a strategy:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Measures**.
- 4) In the table, select the measure.
- 5) Select the **Strategies** detail window.
- 6) Select  **Link**.
- 7) In the **Link Strategies** dialog box, select one or more strategies, and then select **Link**.
- 8) Select **Save**.
- 9) In the **Summary & Settings** panel, select  **Close**.

You can also perform this task from the Strategy List page:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, hover over  **Strategic Alignment**, and select **Strategy List**.
- 3) In the table, select the strategy node, and select the **Measures** detail window.

This setting is used in the following apps:

 **Strategic Alignment**

Defaults & Options

Configuring Defaults and Options Video

The Defaults & Options section specifies the default configuration of settings for each object in a workspace. Each new instance of a particular object in the workspace will inherit the attributes set in Defaults & Options. Settings for each object may include autonumbering defaults, standard and configured fields, object codes, measures, custom workflows, custom forms, and any other default settings applicable to the object. The available configuration options vary by object.

Field Labels Overview

Standard fields are the default fields found in Oracle Primavera Cloud. Fields can be used to store data, provide details, and accept user input. On many pages, fields can be added as columns in a table, used to sort or group data, or used as filters to reduce the number of items displayed on a page. They can also be found in dialog boxes, detail windows, and settings pages. Fields may be associated with a specific object. For example, the activity object is associated with various activity-related fields, such as *Start*, *Finish*, and *Duration*. These fields can be used on pages that support activities.

The Field Labels tab in the Defaults & Options section of the workspace Summary & Settings provides the default column name, column label, data type, and description of each field associated with an object. Labels are the field names displayed throughout the application. Default field labels may not reflect the terminology of your organization or industry. You can customize labels to meet the needs of your organization in any of the twelve supported languages.

Oracle Primavera Cloud documentation uses default field labels. If you change a field label in the application, it will no longer match the label used in documentation. Modified field labels can be reset back to their defaults.

Access a Standard Field Description

You can view the default column name, column label, data type, and description of any standard field in the application. The column label of each field can be modified to match the terminology used by your organization. Fields are associated with objects and can be used in pages that support that object.

To view the details of a standard field:

- 1) **Navigate to an object configuration page** (see page 249).
- 2) On the object page, select the **Field Labels** tab, and view the **Column Name**, **Column Label**, **Data Type**, and **Description** columns.

This setting is used in the following apps:

 **Cost and Funds**

 **Custom Logs**

 **Files**

 **Portfolio Analysis**

 **Resources**

 **Risk**

 **Schedule**

 **Scope**

 **Strategic Alignment**

 **Tasks**

Change a Standard Field Label

Relabel Fields Video

You can update standard field labels in your native language or update labels in the Localization detail window to customize the field label in other languages. In the table of standard fields, the Column Name field specifies the original field name. The Column Label field specifies the custom label, entered by the user. By default it matches the original field name.

Note: Oracle Primavera Cloud documentation uses default field labels. If you follow these steps to change a field label in the application, it will no longer match the label used in documentation.

To change a standard field label:

- 1) **Navigate to an object configuration page** (see page 249).
- 2) On the object page, select the **Field Labels** tab.
- 3) In the table, select a field.
- 4) In the **Column Label** field, enter a new label.
- 5) In the **Localization** detail window, select the **Column Label** field of the language, and enter a new label.
- 6) Save your changes:
 - a. Select **Save**.
 - b. In the **Summary & Settings** panel, select **× Close**.

Tips

- ▶ You can restore the default label of a standard field by selecting the  **Context** menu and then selecting **Reset Label**.
- ▶ New child workspaces inherit the field labels set in the parent workspace. To apply field labels to all existing child workspaces, select one or more fields, select the  **Context** menu, and then select **Apply Label to Child Workspace**.

This setting is used in the following apps:

 **Cost and Funds**

 **Custom Logs**

 **Portfolio Analysis**

 **Resources**

 **Risk**

 **Schedule**

 **Scope**

 **Strategic Alignment**

 **Tasks**

Configured Fields Overview

Creating Configured Fields Video

Configured fields are user-created fields that allow you to define and maintain data specific to your organization. For example, you can track information such as Strategic Importance or Main Stakeholder.

Configured fields are created in the context of an object and can be used in views on pages that support that object. For example, you can create an Activity configured field and use it on the Activities page as a column, grouping band, sorting option, or filter criterion. Configured fields are global, so they can be used across all workspaces, projects, portfolios, programs, and ideas.

Oracle Primavera Cloud fields are categorized by data type, including: Boolean, cost, date, integer, list, number, or text. Multi-currency is supported only for data type cost for formula configured fields. For configured fields of data type cost, you can select the **Currency** tab in  **Settings** to choose which currency to view cost data. For some types of data, you can define a formula or statement to calculate values for a field. For a configured field of data type cost, the cost formula calculation is performed and saved in base currency then converted to project currency. For configured fields that are data type number and integer, using cost fields as part of formulas will only produce one value. This value is always calculated and displayed in base currency. For more information on creating or using custom formulas, consult the *Oracle Primavera Cloud Expression Language Guide* on Oracle Help Center. Configured fields have different character limitations depending on the purpose and type. For example, list configured fields have a character limit of 128, and text configured fields have a character limit of 255.

Documentation on adding a configured field to a specific object can be found under that object.

Restricted Configured Fields

A configured field that is designated as restricted can be viewed by anyone with access to the portfolio, program, or project, but only the users with workspace-level Restricted Configured Fields Edit privilege can edit it. Users with this privilege can restrict any configured field by selecting the Restricted check box when adding or updating a configured field in Summary and Settings for a program, project, or portfolio in a workspace. For example, if a configured field is updated as a result of a workflow decision, you can set the configured field to restricted to prevent users from updating the field. To learn more about permissions, contact your application administrator or see Permission Sets Overview in the Application Administration Guide.

Change a Configured Field Label

You can update configured field labels in your native language or update labels in the Localization detail window to customize the field label in other languages. In the table of configured fields, the View Column Name field specifies the original field name. The Column Label field specifies the custom label, entered by the user. By default it matches the original field name.

To change a configured field label:

- 1) **Navigate to an object configuration page** (see page 249).
- 2) On the object page, select the **Configured Fields** tab.

- 3) In the table, select a field.
- 4) In the **Column Label** field, enter a new label.
- 5) In the **Localization** section, select the **Column Label** field of the language, and enter a new label.
- 6) Save your changes:
 - a. Select **Save**.
 - b. In the **Summary & Settings** panel, select **× Close**.

Tips

- ▶ You can restore the default label of a configured field by selecting the  **Context** menu and then selecting **Reset Label**.
- ▶ New child workspaces inherit the field labels set in the parent workspace. To apply field labels to all existing child workspaces, select one or more fields, select the  **Context** menu, and then select **Apply Label to Child Workspace**.

This setting is used in the following apps:

 **Cost and Funds**

 **Custom Logs**

 **Files**

 **Portfolio Analysis**

 **Resources**

 **Risk**

 **Schedule**

 **Scope**

 **Tasks**

Add a Formula-Based Configured Field: Example

This example demonstrates how to create a configured field to calculate and store the Estimated Final Cost of a project.

Note: For information on creating advanced formulas for measures, refer to the *Oracle Primavera Cloud Expression Language Guide on Oracle Help Center*.

Let us assume that you will define the Estimated Final Cost of a project as Approved Budget plus Proposed Budget.

Creating a Configured Field

- 1) **Navigate to the Project configuration page** (see page 249).
- 2) On the **Project** page, select **Configured Fields**.

- 3) In the table, complete the following fields:
 - a. In the **Column Label** column, enter *Estimated Final Cost*.
 - b. In the **View Column Name** column, enter *EST_FINAL_COST*.
 - c. In the **Data Type** column, select **Cost**.
 - d. In the **Type** column, select **Formula**.
 - e. In the **Summary Calculation** column, select **Sum**.

Defining a Formula

- 1) In the **Formula** detail window, in the **Field** list, select **Approved Budget**, and select **Insert Field**.
- 2) Select **+**.
- 3) In the **Field** list, select **Proposed Budget**, and select **Insert Field**.
- 4) Select **Validate Formula**.
- 5) In the **Formula validation passed** dialog box, select **OK**.
- 6) Save your changes:
 - a. Select **Save**.
 - b. In the **Summary & Settings** panel, select **✕ Close**.

Note: Multi-currency is supported only for data type cost for formula configured fields. For a configured field of data type cost, the cost formula calculation is performed and saved in base currency then converted to project currency. For configured fields that are data type number and integer, using cost fields as part of formulas will only produce one value. This value is always calculated and displayed in base currency.

Tips

- ▶ To delete a configured field, select the field, select **⚙ Context**, and then select **Delete**. You cannot delete a configured field if it is used in a form, workflow, or field mapping.

Update the Owing Workspace of a Configured Field

Update the owning workspace of a configured field to move it to another workspace that you are assigned. If you move the field to a workspace that is higher in the workspace hierarchy, it will be available to more workspaces.

To update the owning workspace of a configured field:

- 1) **Navigate to an object configuration page** (see page 249).
- 2) On the object page, select the **Configured Fields** tab.
- 3) On the **Configured Fields** tab, select **Manage Shared Data**.
- 4) Select the **⚙ Context** menu, and then select **Change Owing Workspace**.
- 5) In the **Select Workspace** dialog box, select the new owning workspace, and select **Select**.
- 6) Save your changes:

- a. Select **Save**.
 - ▶ In the **Summary & Settings** panel, select **✕ Close**.

This setting is used in the following apps:

 **Cost and Funds**

 **Custom Logs**

 **Files**

 **Portfolio Analysis**

 **Resources**

 **Risk**

 **Schedule**

 **Scope**

 **Strategic Alignment**

 **Tasks**

Portfolio

Create and customize field labels, and create codes to assign to portfolios.

Field Labels

Access a Standard Field Description (on page 70)

Change a Standard Field Label (on page 71)

Configured Fields

Add a Portfolio Field (on page 75)

Add a Formula-Based Configured Field: Example (on page 73)

Update the Owing Workspace of a Configured Field (on page 74)

Change a Configured Field Label (on page 72)

Codes

Add a Code (on page 52)

Add a Value to a Code (on page 53)

Update the Owing Workspace of a Code (on page 54)

Add a Portfolio Field

Add custom portfolio fields to enable users to enter or view information which is important to your organization.

Note: On pages that support auto-save, configured field formulas will be automatically recalculated when a change is made that impacts the value of a configured field formula. However, there may be times where the recalculation is not updated in the user interface. When this occurs,

refresh the page to see the recalculated value.

To add a portfolio field:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Defaults & Options**, and then select **Portfolio**.
- 4) On the **Defaults & Options: Portfolio** page, select the **Configured Fields** tab.
- 5) In the table, select **+ Add**.
 - a. In the **Column Label** column, enter a name for the new field.
 - b. In the **View Column Name** column, enter a name for the field as it will be seen in the database when creating reports.
 - c. In the **Data Type** column, select the type for the new field. The choices are: Boolean, Cost, Date, Integer, List, Number, or Text.
 - d. In the **Type** column, select **Manual** if this field will hold data entered by a user or **Formula** if the data it holds will be calculated on the basis of a formula.
 - e. (Optional) If you selected **Text** as the **Data Type**, in the **Field Length** column, enter the maximum number of characters that can be used in the field.
 - f. If you selected **Formula**, configure the **Formula** section.
 - g. (Optional) Select the Restricted check box to designate the field as a restricted field. A configured field that is designated as restricted can be viewed by anyone with access to the portfolio, but only the users with workspace-level Restricted Configured Fields Edit privilege can edit it.
- 6) Select **Save**.
- 7) In the **Summary & Settings** panel, select **✕ Close**.

Tips

- ▶ To delete a configured field, select the field, select  **Context**, and then select **Delete**. You cannot delete a configured field if it is used in a form, workflow, or field mapping.
- ▶ To choose which currency to view cost in configured fields of data type cost, select the **Currency** tab in  **Settings**.
- ▶ Multi-currency is supported only in data type cost for formula configured fields.
- ▶ For a configured field of data type cost, the cost formula calculation is performed and saved in base currency then converted to project currency.
- ▶ For configured fields that are data type number and integer, using cost fields as part of formulas will only produce one value. This value is always calculated and displayed in base currency.
- ▶ Restricted configured fields and non-restricted configured fields can be included in formulas together.

This setting is used in the following apps:

 **Portfolio Analysis**

Program

Set program auto numbering defaults, create and customize field labels, and create new program codes.

Defaults

Configure Auto Numbering Defaults for Programs (on page 77)

Field Labels

Access a Standard Field Description (on page 70)

Change a Standard Field Label (on page 71)

Configured Fields

Add a Program Field (on page 77)

Add a Formula-Based Configured Field: Example (on page 73)

Update the Owing Workspace of a Configured Field (on page 74)

Change a Configured Field Label (on page 72)

Codes

Add a Code (on page 52)

Add a Value to a Code (on page 53)

Update the Owing Workspace of a Code (on page 54)

Configure Auto Numbering Defaults for Programs

- a. Unique IDs are required for objects in the application. The IDs are automatically generated based on the default values set for prefix, starting number, and increment. You can use the defaults set in the application or enter values that represent your numbering system. Setting these at the workspace level will apply the defaults to all programs within the workspace. Defaults can be updated at the program level.

To set the auto numbering defaults for programs:

- 1) ***Navigate to the Program configuration page*** (see page 250).
- 2) Select the **Defaults** tab.
- 3) In the **Auto Numbering** section, define the auto numbering default values.
- 4) Save your changes:
 - a. Select **Save**.
 - b. In the **Summary & Settings** panel, select **✕ Close**.

Add a Program Field

Add custom program fields to enable users to enter or view information that is important to your organization.

To add a program field:

- 1) ***Navigate to the Program configuration page*** (see page 250).

- 2) Select the **Configured Fields** tab.
- 3) In the table, select **+ Add**.
 - a. In the **Column Label** column, enter a name for the new field.
 - b. In the **View Column Name** column, enter a name for the field as it will be seen in the database when creating reports.
 - c. In the **Data Type** column, select the type for the new field. The choices are: Boolean, Cost, Date, Integer, List, Number, or Text.
 - d. (Optional) If you selected **Text** as the **Data Type**, in the **Field Length** column, enter the maximum number of characters that can be used in the field.
 - e. (Optional) Select the Restricted check box to designate the field as a restricted field. A configured field that is designated as restricted can be viewed by anyone with access to the program, but only the users with workspace-level Restricted Configured Fields Edit privilege can edit it.
- 4) Save your changes:
 - a. Select **Save**.
 - b. In the **Summary & Settings** panel, select **× Close**.

Tips

- ▶ To delete a configured field, select the field, select **⊗ Context**, and then select **Delete**. You cannot delete a configured field if it is used in a form, workflow, or field mapping.
- ▶ To choose which currency to view cost in configured fields of data type cost, select the **Currency** tab in **⚙ Settings**.
- ▶ Multi-currency is supported only in data type cost for formula configured fields.
- ▶ For a configured field of data type cost, the cost formula calculation is performed and saved in base currency then converted to project currency.
- ▶ For configured fields that are data type number and integer, using cost fields as part of formulas will only produce one value. This value is always calculated and displayed in base currency.
- ▶ Restricted configured fields and non-restricted configured fields can be included in formulas together.

Add a Program Measure

Program measures are configured at the workspace level and used to monitor project attributes on projects within a program. You can view program measures as columns in the programs inventory panel. For more information about measures, see **Measures Overview** (on page 60).

Measures use expressions to quantitatively monitor data important to you. A measure's aggregation source indicates the object type whose data is being captured. Program measures support projects and programs as aggregation sources and capture data from the projects or programs.

The target and actual values used for measures can be configured for manual entry or using a formula. Manual values are entered on pages where the measures appear. Formulas are defined by creating expressions using project or program attributes or using existing program measures. The project and program attributes include project or program-level fields and project or program measures that exist in the workspace. Measures that use existing measures are called measure-based measures. Measure-based measure expressions can use one or more of the available program measures. When choosing a measure, you can select its target or actual expression. Attributes and measure-based measures cannot be used in the same expression.

For information on creating advanced formulas for measures, refer to the *Oracle Primavera Cloud Expression Language Guide on Oracle Help Center*.

To add a program measure:

- 1) **Navigate to the Program configuration page** (see page 250).
- 2) On the **Measures** tab, select **+ Add**.
- 3) In the table, complete the following fields:
 - ▶ **Name**: The name of the measure.
 - ▶ (Optional) **Description**: Details about the measure.
 - ▶ **Data Type**: The type of data that the measure generates. Options include Cost, Number, and Percentage.
 - ▶ **Target Type**: Determines whether the Target value of the measure is manually entered or calculated using a formula. Entering a target value is not required.
 - ▶ **Actual Type**: Determines whether the Actual value of the measure is manually entered or calculated using a formula.
 - ▶ **Measure Based**: Determines whether the measure is created using existing measures. This option is available when either Target Type or Actual Type is set to Formula.
 - ▶ **Tracking Frequency**: Determines how frequently you want to monitor the measure. For example, if a formula-based measure's tracking frequency is set to Weekly, it is computed every week. If it is a manual measure with Weekly tracking frequency, you can enter measure values in weekly buckets.
 - ▶ **Aggregation Source**: Determines whether you are capturing projects or programs data in the measure.

Note: You can recalculate program measures on demand in the programs inventory panel.

- 4) If **Target Type** or **Actual Type** is set to Formula, select the **Data Source** detail window to configure their formulas.

Note: The Data Source detail window is not displayed if both types are set to Manual.

- 5) In the **Data Source** detail window, select any of the following sections, if applicable:
 - ▶ **Actual**: Formula that calculates the current values for the measure.

- ▶ (Optional) **Target**: Formula that calculates a value that can be used when setting thresholds to measure against. See Set a Threshold for a Program Measure for more information.
 - ▶ **Base Expression**: The base expression for the Actual or Target formulas when **Percentage** is the selected **Data Type**.
- 6) In the selected section, enter a formula manually or using a formula template.
- a. To enter a formula manually:
 1. Select the **Field** list to locate the field to use in the calculation.

When the **Measure Based** option is selected, the Field list will only show measures available to use in the formula.
 2. Select **Insert**.
 3. Select the mathematical symbols for the expression.
 4. Add any other fields or symbols needed for the expression.
 - b. To use a formula template:
 1. In the **Aggregation Type** list, select the calculation needed for the formula. The list is only enabled when **Measure Based** is not selected.
 2. Select **Insert**. The formula template appears.
 3. To use the template, highlight or delete **Field** or **Filter**, including the angle brackets, select a field from the **Field** list, and select **Insert**. Repeat for any additional fields or fields to filter by.
 4. Add any other fields or symbols needed for the expression.
- 7) Select **Validate Formula**.
- 8) Save your changes:
- a. Select **Save**.
 - b. In the **Summary & Settings** panel, select **✕ Close**.

Tips

- ▶ Select the  **Context** menu next to an existing measure, and then select **Duplicate** to duplicate the measure.

This setting is used in the following apps:

 **Dashboards**

 **Reports**

Project

Create and customize field labels, create new codes, and configure project-based measures.

Field Labels

Access a Standard Field Description (on page 70)

Change a Standard Field Label (on page 71)

Configured Fields

Add a Project Field (on page 81)

Add a Formula-Based Configured Field: Example (on page 73)

Update the Owning Workspace of a Configured Field (on page 74)

Change a Configured Field Label (on page 72)

Measures

Add a Project Measure (on page 83)

Set a Threshold for a Project Measure (on page 85)

Codes

Add a Code (on page 52)

Add a Value to a Code (on page 53)

Update the Owning Workspace of a Code (on page 54)

Add a Project Field

Add custom project fields to enable users to enter or view information which is important to your organization.

Note: On pages that support auto-save, configured field formulas will be automatically recalculated when a change is made that impacts the value of a configured field formula. However, there may be times where the recalculation is not updated in the user interface. When this occurs, refresh the page to see the recalculated value.

To add a project field:

- 1) **Navigate to the Project configuration page** (see page 249).
- 2) Select the **Configured Fields** tab.
- 3) In the table, select **+ Add**.
 - a. In the **Column Label** column, enter a name for the new field.
 - b. In the **View Column Name** column, enter a name for the field as it will be seen in the database when creating reports.
 - c. In the **Data Type** column, select the type for the new field. The choices are: Boolean, Cost, Date, Integer, List, Number, or Text.
 - d. In the **Type** column, select **Manual** if this field will hold data entered by a user or **Formula** if the data it holds will be calculated on the basis of a formula.
 - e. (Optional) In the **Summary Calculation** field, specify how the app calculates summary rollup values for the field.

In most tables where you can view a list of similar objects, you can also view the totals for the various values of these objects. For example, on the Activities table for a project, you can view rollup totals for numerical values like Planned Duration and Planned Labor Units at the top of the table.

The **Summary Calculation** field enables you to specify how totals are determined for configured fields.

If you selected **Cost**, **Date**, **Integer**, or **Number** as the **Data Type**, in the **Summary Calculation** column, select a simple calculation like Sum or Average, if applicable.

Alternatively, if you set the **Type** field to **Formula**, you can set the **Summary Calculation** field to **Use Formula**. With this option selected, the app will use the formula defined in the **Formula** field to determine how the total rollup value is calculated for the field.

- f. (Optional) If you selected **Text** as the **Data Type**, in the **Field Length** column, enter the maximum number of characters that can be used in the field.
 - g. (Optional) Select the Restricted check box to designate the field as a restricted field. A configured field that is designated as restricted is viewable by anyone with access to the project, but the field is only editable by users that have Edit selected for the Restricted Configured Fields workspace privilege.
 - h. If you selected **Formula**, configure the **Formula** section. **Note:** When adding a null check to a formula, you must specify the null check at the beginning of the if condition statement.
- 4) Save your changes:
- a. Select **Save**.
 - b. In the **Summary & Settings** panel, select **× Close**.

Tips

- ▶ To delete a configured field, select the field, select  **Context**, and then select **Delete**. You cannot delete a configured field if it is used in a form, workflow, or field mapping.
- ▶ To choose which currency to view cost in configured fields of data type cost, select the **Currency** tab in  **Settings**.
- ▶ Multi-currency is supported only in data type cost for formula configured fields.
- ▶ For a configured field of data type cost, the cost formula calculation is performed and saved in base currency then converted to project currency.
- ▶ For configured fields that are data type number and integer, using cost fields as part of formulas will only produce one value. This value is always calculated and displayed in base currency.

This setting is used in the following apps:

 **Cost and Funds**

 **Files**

 **Portfolio Analysis**

 **Resources**

 **Risk**

 **Schedule**

 **Scope**

 **Strategic Alignment**

 **Tasks**

Add a Project Measure

Add a Project Measure Video

Project measures are configured at the workspace level and used to monitor activity and risk attributes on projects in that workspace. You can view project measures as columns in the projects inventory panel or by adding them to page views throughout the application. For more information about measures, see **Measures Overview** (on page 60).

Measures use expressions to quantitatively monitor data important to you. A measure's aggregation source indicates the object type whose data is being captured. Project measures support activities, risks, and programs as an aggregation source and capture data from the activities and risks within a project and from programs to which the project belongs.

The target and actual values used for measures can be configured for manual entry or using a formula. Manual values are entered on pages where the measures appear. Formulas are defined by creating expressions using activity, risk, or program attributes or using existing project measures. Measures that use existing measures are called measure-based measures. Measure-based measure expressions can use one or more of the available project measures. When choosing a measure, you can select its target or actual expression. Attributes and measure-based measures cannot be used in the same expression.

For information on creating advanced formulas for measures, refer to the *Oracle Primavera Cloud Expression Language Guide on Oracle Help Center*.

To add a project measure:

- 1) **Navigate to the Project configuration page** (see page 249).
- 2) On the **Measures** tab, select **+ Add**.
- 3) In the table, complete the following fields:
 - ▶ **Name:** The name of the measure.
 - ▶ (Optional) **Description:** Details about the measure.
 - ▶ **Data Type:** The type of data that the measure generates. Options include Cost, Number, and Percentage.
 - ▶ **Target Type:** Determines whether the Target value of the measure is manually entered or calculated using a formula. Entering a target value is not required.
 - ▶ **Actual Type:** Determines whether the Actual value of the measure is manually entered or calculated using a formula.
 - ▶ **Measure Based:** Determines whether the measure is created using existing measures. This option is available when either Target Type or Actual Type is set to Formula.
 - ▶ **Tracking Frequency:** Determines how frequently you want to monitor the measure. For example, if a formula-based measure's tracking frequency is set to Weekly, it is computed every week. If it is a manual measure with Weekly tracking frequency, you can enter measure values in weekly buckets.
 - ▶ **Aggregation Source:** Determines whether you are capturing activities, risks, projects, or programs data in the measure.

Note: You can recalculate project measures on demand in the projects inventory panel.

- 4) If **Target Type** or **Actual Type** is set to Formula, select the **Data Source** detail window to configure their formulas.

Note: The Data Source detail window is not displayed if both types are set to Manual.

- 5) In the **Data Source** detail window, select any of the following sections, if applicable:
- ▶ **Actual:** Formula that calculates the current values for the measure.
 - ▶ (Optional) **Target:** Formula that calculates a value that can be used when setting thresholds to measure against. See *Set a Threshold for a Project Measure* (on page 85) for more information.
 - ▶ **Base Expression:** The base expression for the Actual or Target formulas when **Percentage** is the selected **Data Type**.
- 6) In the selected section, enter a formula manually or using a formula template.
- a. To enter a formula manually:
1. Select the **Field** list to locate the field to use in the calculation.
When the **Measure Based** option is selected, the Field list will only show measures available to use in the formula.
 2. Select **Insert**.
 3. Select the mathematical symbols for the expression.
 4. Add any other fields or symbols needed for the expression.
- b. To use a formula template:
1. In the **Aggregation Type** list, select the calculation needed for the formula. The list is not enabled when **Measure Based** or **Project** is selected.
 2. Select **Insert**. The formula template appears.
 3. To use the template, highlight or delete **Field** or **Filter**, including the angle brackets, select a field from the **Field** list, and select **Insert**. Repeat for any additional fields or fields to filter by.
 4. Add any other fields or symbols needed for the expression.
- 7) Select **Validate Formula**.
- 8) Save your changes:
- a. Select **Save**.
 - b. In the **Summary & Settings** panel, select **✕ Close**.

Tips

- ▶ Assign a project measure from a parent workspace to make it available to the current workspace. Update the owning workspace of a measure to make it available to a greater number of workspaces.
- ▶ Select the  **Context** menu next to an existing measure, and then select **Duplicate** to duplicate the measure.

This setting is used in the following apps:

 **Cost and Funds**

 **Dashboards**

 **Portfolio Analysis**

 **Reports**

 **Resources**

Set a Threshold for a Project Measure

Set thresholds for project measures to see the status of measures using visual indicators when monitoring activity attributes in a project.

To set a threshold for a project measure:

- 1) **Navigate to the Project configuration page** (see page 249).
- 2) On the **Measures** tab, in the table, select a measure.
- 3) Select the **Thresholds** detail window.
- 4) Select **+ Add**.
- 5) In the **Operator** field, select a parameter to use in the threshold calculation.
- 6) In the **Value** field, enter a threshold value to use in the calculation.
- 7) In the **High Value** field, enter the top of the range when the operator is set to Within Range or Not Within Range.
- 8) In the **Indicator Color** field, select a color to visually represent status when the threshold is met.
- 9) In the **Indicator Icon** field, select an icon to visually represent status when the threshold is met.
- 10) In the **Goal** list, select whether a high or low value indicates a positive change in the measure.
- 11) In the **Threshold Computation Method**, select how thresholds are calculated using Actual and Target values.
 - ▶ **Actual Value:** The current value. This is the value as calculated by the expression for Actual on the Data Source tab.
 - ▶ **Percent of Target:** The percentage of the actual value compared to the target value.
- 12) Add as many thresholds as necessary for the measure.
- 13) Save your changes:
 - a. Select **Save**.
 - b. In the **Summary & Settings** panel, select **✕ Close**.

This setting is used in the following apps:

 **Cost and Funds**

 **Dashboards**

Portfolio Analysis

Reports

Resources

Resource/Role

Relabel standard fields to meet the needs of your organization, localize names and column labels for supported languages, and create new codes.

Field Labels

Access a Standard Field Description (on page 70)

Change a Standard Field Label (on page 71)

Codes

Add a Code (on page 52)

Add a Value to a Code (on page 53)

Update the Owning Workspace of a Code (on page 54)

Create a Portfolio

Create a portfolio, and then add a combination of projects, programs, and sub-portfolios to the portfolio. Portfolios are created in the Portfolios inventory panel. They can be configured from the Portfolios inventory panel or from the Summary & Settings within the portfolio.

To create a portfolio:

- 1) **Add a Portfolio** (on page 86)
- 2) Add a project, program, or existing portfolio to a portfolio:
 - ▶ **Add a Project to a Portfolio** (on page 87)
 - ▶ **Add a Program to a Portfolio** (on page 87)
 - ▶ **Add a Portfolio to a Portfolio** (on page 88)
- 3) **Set a Portfolio's Project and Program Lists to Refresh Automatically** (on page 89)

Add a Portfolio

Add portfolios to monitor the health and status of groups of related projects, programs, and sub-portfolios. You can also use portfolios to facilitate multi-year budget and resource planning on projects in the portfolio.

To add a portfolio:

- 1) In the object selector, select **Portfolios**, and then select **+ Add Portfolio**.
- 2) In the **Add Portfolio** dialog box, enter a name for the portfolio.
- 3) (Optional) Enter a description.
- 4) Select **Add**.

5) In the inventory panel, select **✕ Close**.

You can also perform this task from the Portfolios inventory panel:

- 1) In the object selector, select **📁 Portfolios**, and then select **View All Portfolios**.
- 2) In the **Portfolios** inventory panel, select **+ Add**.

Tips

- ▶ A portfolio cannot be deleted if the portfolio contains a scenario.

Add a Project to a Portfolio

Projects are added to portfolios using filters. Projects added to a portfolio must belong to the same workspace as the portfolio or a child workspace. Projects can belong to multiple portfolios.

To add a project to a portfolio:

- 1) In the object selector, select **📁 Portfolios**, and then select **View All Portfolios**.
- 2) In the table, select the portfolio.
- 3) Select the **Project List** detail window.
- 4) Select **✎ Edit Filter**.
- 5) In the **Set Filter Criteria** dialog box, select the criteria for including projects in the portfolio.
- 6) Select **Assign**.
- 7) Select **Save**.
- 8) In the inventory panel, select **✕ Close**.

Tips

- ▶ The project list can be manually refreshed by selecting **🔄 Refresh Portfolio**, or it can be **set to refresh automatically** (see "**Set a Portfolio's Project and Program Lists to Refresh Automatically**" on page 89). The list also updates when the filter is modified.
- ▶ If a project no longer meets the filter criteria, but is included in an approved portfolio budget plan, it will continue to be included in the project list for the portfolio.

You can also perform this task from the Summary & Settings panel for the object in **Primavera Cloud**:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, select **⚙ Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Details**.

Add a Program to a Portfolio

Programs can be added to portfolios manually or using filters. Programs added to a portfolio must belong to the same workspace as the portfolio or a child workspace. A program can belong to multiple portfolios.

To add a program to a portfolio:

- 1) In the object selector, select  **Portfolios**, and then select **View All Portfolios**.
- 2) In the table, select the portfolio.
- 3) Select the **Program List** detail window.
- 4) Select **Manage Programs**.
- 5) In the **Manage Programs** dialog box, select one of the following options to define how programs are added to the portfolio:
 - ▶ **Manual Selection:** Manually add programs from the **Available** section to the **Selected** section.
 - ▶ **Filter:** Specify the filtering criteria for including programs in the portfolio.

Note: To search by program name, select Program name from the filter criteria and enter the program name in the text-based search field.

- 6) In the **Manage Programs** dialog box, select **Save**.
- 7) Select **Save**.
- 8) In the inventory panel, select  **Close**.

Tips

- ▶ If programs are added to the portfolio using a filter, you can update the program list manually by selecting  **Refresh**, or by *setting the list to refresh automatically* (see "*Set a Portfolio's Project and Program Lists to Refresh Automatically*" on page 89). The list also updates when the filter is modified.
- ▶ If you switch from using filters to manual selection, you can choose to add the programs previously captured by the filter to the manually selected list.
- ▶ To remove a manually added program from the portfolio, move it from the **Selected** list to the **Available** list in the **Manage Programs** dialog box. To remove all manually added programs from the portfolio, in the **Manage Programs** dialog box, select **Remove**.

You can also perform this task from the Summary & Settings panel for the object in **Primavera Cloud**:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Details**.

Add a Portfolio to a Portfolio

Portfolios can be manually added to portfolios to create a portfolio of portfolios or a portfolio with a combination of projects and portfolios. Portfolios added to a portfolio must belong to the same workspace or a child workspace of the parent portfolio. A portfolio can belong to multiple portfolios.

To add a portfolio to a portfolio:

- 1) In the object selector, select  **Portfolios**, and then select **View All Portfolios**.
- 2) In the table, select the portfolio.

- 3) Select the **Portfolio List** detail window.
- 4) In the **Portfolio List** detail window, select  **Edit**.
- 5) In the **Edit Portfolio List** dialog box, select an available portfolio, and select **OK**.
- 6) Select **Save**.
- 7) In the inventory panel, select  **Close**.

You can also perform this task from the Summary & Settings panel for the object in **Primavera Cloud**:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Details**.

Set a Portfolio's Project and Program Lists to Refresh Automatically

Projects are added to portfolios using filters, and programs can be added manually or using filters. The portfolio's project list and program list (with filters) can be set to refresh automatically on a set schedule. The selected frequency applies to both lists.

To refresh the project and program list in a portfolio automatically:

- 1) In the object selector, select  **Portfolios**, and then select **View All Portfolios**.
- 2) In the table, select a portfolio, and select the **Project List** or **Program List** detail window.
- 3) In the detail window, select  **Settings**.

Note: This option is only visible in the **Program List** detail window if programs are added using filters.

- 4) In the **Settings** panel, on the **Automatic Refresh** tab, select **Automatically Refresh Portfolio** to enable the setting.
- 5) In the **Refresh Frequency** list, select how often the portfolio list should refresh.
- 6) In the **Settings** panel, select **Apply**.
- 7) Select **Save**.
- 8) In the inventory panel, select  **Close**.

Tips

- ▶ To manually refresh the portfolio's lists, in the **Project List** or **Program List** detail window, select  **Refresh**. This will refresh both the project list and program list. The last refresh date is displayed in both detail windows.

You can also perform this task from the Summary & Settings panel for the object in **Primavera Cloud**:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Details**.

Portfolio Settings

Configure settings at the portfolio level.

Assign a Manager to a Portfolio

Assign a manager to a portfolio to identify the portfolio manager or person responsible for managing the portfolio.

By default, the person who created the portfolio is automatically assigned as the manager.

To assign a manager to a portfolio:

- 1) In the object selector, select  **Portfolios**, and then select **View All Portfolios**.
- 2) In the table, locate the portfolio.
- 3) In the **Manager** field, select a manager.
- 4) Select **Save**.
- 5) In the inventory panel, select  **Close**.

Add an Image to a Portfolio

A portfolio image is shown in some areas of the application, such as the Portfolio Home page. You can upload your own image or choose from existing images. You cannot upload an image with a CMYK color format.

To add an image to a portfolio:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Details**.
- 4) Select the **Portfolio** image.
- 5) In the **Select Image for Portfolio** dialog box, select one of the following:
 - ▶ Under the **Upload New Image** section, in the **Image** field, select **... Browse**, and then select an image.
 - ▶ Under the **Choose from Existing** section, select **Gallery** or **Uploaded**, and then select an existing image.
- 6) Select **Select**.
- 7) Select **Save**.
- 8) In the **Summary & Settings** panel, select  **Close**.

You can also perform this task from the Portfolio Home page:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, select  **Home**.

Tips

- ▶ To restore the default portfolio image, select **Reset to Default** in the **Select Image for Portfolio** dialog box.

Configure Settings for a Portfolio Budget Plan

Before you can begin *building your budget plan* (see "**Build a Portfolio Budget Plan**" on page 107), you should configure budget plan options and settings. Choose the number of years of your plan. Set workflows to use in the budget approval process. Create performance thresholds for your portfolio and its projects. When these settings are configured, you can begin building your portfolio budget plan.

To configure settings for a budget portfolio plan:

- 1) **Set the Budget Planning Options for a Portfolio** (on page 91)
- 2) **Create an Analysis View in a Portfolio** (on page 92)
- 3) **Create Thresholds and Alerts for a Budget Plan** (on page 94)
- 4) **Set Workflows for Reviewing, Proposing, and Approving a Budget Planning Scenario** (on page 97)
- 5) **Assign User Roles to a Workspace, Portfolio, or Project** (on page 97)

Set the Budget Planning Options for a Portfolio

Define the number of years to plan for during the budget planning process and configure how cost data will be displayed on the Budget Planning page.

To set the planning period for a portfolio budget plan:

- 1) In the object selector, select  **Portfolios**, and then select **View All Portfolios**.
- 2) In the table, select the portfolio row.
- 3) Select the **Budget Planning** detail window.
- 4) In the **Planning Horizon** field, enter the total number of years to plan out for the projects in a budget plan.

Note: The planning horizon cannot be changed after a budget plan has been added to the portfolio.

- 5) (Optional) In the **Use capital and expense breakdown** section, select **Show capital and expense sub-cost curves** to enable capital and expense sub-curves on the Target, Portfolio Proposed, and Portfolio Approved Budget curves.

In the **Confirm** dialog box, select to associate the existing portfolio data to the **Capital** or **Expense** sub-cost curve.

Note: Capital sub-cost curve is selected by default. This setting can be enabled after a budget plan is created and will apply only to new budget planning years.

- 6) In the **Proposed Budget Link Setting** section, select whether you want the Proposed Budget for projects in each budget plan scenario to be linked to their **Forecast** or **Planned Budget** values, as specified by project managers.

Note: This option can be updated after budget plans are created for the portfolio; however, the change will only impact budget plans created after the update and will not change the existing budget plans.

- 7) Select **Save**.
- 8) In the inventory panel, select **✕ Close**.

Tips

You can also perform this task on a single object from the Summary & Settings panel in **Primavera Cloud**:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, select **⚙ Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Details**.

Related Video Tips

Set Budget Planning Options for a Portfolio Video

Create an Analysis View in a Portfolio

Analysis views are customized layouts of the portfolio Budget Planning page. Create analysis views to analyze important project data while developing the portfolio budget. Analysis views enable you to select the values important for evaluation, such as Return on Investment, Net Present Value, and Internal Rate of Return. Analysis views aid in providing budget planners with concise and clear information when selecting projects for a budget plan. In the portfolio-level settings, you can add analysis views to the portfolio or associate an analysis view from the parent workspace or another portfolio in the workspace.

After analysis views are created, they are opened from the Published Views page and used on the Selection Analysis page. You must have the appropriate security privileges to create an analysis view.

To create an analysis view:

- 1) **Add an Analysis View to a Portfolio** (on page 93)
- 2) **Configure an Analysis View in a Portfolio** (on page 93)

If an analysis view already exists, but is not associated with the portfolio, perform the following task:

- ▶ **Associate an Existing Analysis View** (on page 94)

Add an Analysis View to a Portfolio

Add an analysis view to create a meaningful display of portfolio budget plan scenario data. When adding an analysis view, you can select a view type to specify the arrangement for the charts and grids included in the view. You can associate and use analysis views with any of your budget plans

To add an analysis view to a portfolio:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Analysis Views**.
- 4) Select **+ Add View** , and select a type.

Note: In the **Add View** list, select **Associate Existing View** to associate other analysis views in the workspace with your portfolio.

- 5) In the **Name** dialog box, enter a unique name for the analysis view.
- 6) Select **OK**.
- 7) Select **Save**.
- 8) In the **Summary & Settings** panel, select **✕ Close**.

Tips

- ▶ When editing an analysis view, select the **Change Type** menu on the **View** tab, and select a type to change the layout of the view after you have created it.

This setting is used in the following apps:

Cost and Funds

Configure an Analysis View in a Portfolio

You can configure charts and grids through the chart and grid panes to tailor them to your analysis views.

At the portfolio level, you can choose to publish the view or remove it from use and choose whether other users can customize the view.

To configure an analysis view in a Portfolio:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Analysis Views**.
- 4) Select an analysis view.
- 5) On the **View** tab, select the chart pane or grid pane you would like to modify, and select **Configure**.
- 6) Configure your chart or grid:
 - ▶ If you selected a chart, use the **Configure Chart** wizard to change the properties of the chart.

- ▶ If you selected a grid, use the grid **Settings** dialog box to change the properties of the grid.
- 7) In the **Portfolio Settings** section, configure the following options:
 - ▶ **Publish View**: Select to enable users to access the analysis view from the **Published Views** page for the portfolio. If disabled, the view will not be displayed.
 - ▶ **User Customization**: Select to allow a user with the appropriate privileges to customize the analysis view while viewing data.
- 8) Select **Save**.
- 9) In the **Summary & Settings** panel, select **✕ Close**.

This setting is used in the following apps:

 **Cost and Funds**

Associate an Existing Analysis View

Associating analysis views to your portfolio enables you to use analysis views in the parent workspace or another portfolio in the workspace to view budget plan data. You can disassociate an analysis view from a plan at any time.

To associate an analysis view with a portfolio:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Analysis Views**.
- 4) Select **+ Add View ▼**, and select **Associate Existing View**.
- 5) In the **Globally Defined Views** dialog box, expand the type of the view you want to select, select the view, and select **> Move Right**.
- 6) Select **Save**.
- 7) In the **Summary & Settings** panel, select **✕ Close**.

Tips

- ▶ To disassociate an analysis view from the portfolio, in the **Globally Defined Views** dialog box, select an analysis view in the **Selected** pane, and select **< Move Left**.

This setting is used in the following apps:

 **Cost and Funds**

Create Thresholds and Alerts for a Budget Plan

Create thresholds at the portfolio level to use while monitoring approved budget plans on the Scorecard page. Create notification and email alerts to inform users and groups when a threshold is met.

To create thresholds and alerts:

- 1) **Add a Threshold for a Budget Plan** (on page 95)

- 2) **Configure a Threshold for a Budget Plan** (on page 95)
- 3) **Set Threshold Alert Delivery Options for a Budget Plan** (on page 96)

Add a Threshold for a Budget Plan

Add the project and portfolio key performance indicators (KPIs) that will be used while monitoring approved portfolio budget plans on the Scorecard page.

To set monitoring thresholds for a budget plan:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Thresholds**.
- 4) In the context bar, select the planning period **▼ menu**, and select the planning year, which is either the current year or the subsequent year.
- 5) Select the tab for the type of threshold to create.
 - ▶ **Project Fields:** Fields and indicators that display for projects.
 - ▶ **Project Summary Fields:** Fields and indicators that display for the project summary.
 - ▶ **Portfolio Fields:** Fields and indicators that display at the portfolio level.
- 6) Select **+ Add**.
- 7) In the **Select KPI field** dialog box, select a key performance indicator, and then select **OK**.
- 8) Select **Save**.
- 9) In the **Summary & Settings** panel, select **✕ Close**.

This setting is used in the following apps:

Portfolio Analysis

Configure a Threshold for a Budget Plan

Configure the project and portfolio key performance indicators (KPIs) that will be used while monitoring approved budget plans on the Scorecard page.

To configure a threshold for a portfolio budget plan:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Thresholds**.
- 4) In the context bar, select the planning period **▼ menu**, and select the planning year, which is either the current year or the subsequent year.
- 5) Select the tab for the threshold to configure.
- 6) In the settings pane, under the **Threshold** section, configure the settings:
 - ▶ **Operator:** Select a parameter to use for the threshold.
 - ▶ **Value:** Enter the value to use for the threshold.
 - ▶ **Indicator Icon:** Select a visual indicator to display when the threshold is met.
 - ▶ **Bubble Color:** Select a color to display on a bubble chart when the threshold is met.

- 7) (Optional) In the box for the threshold field, select **+ Add** to add more threshold settings.
- 8) Select **Save**.
- 9) In the **Summary & Settings** panel, select **× Close**.

This setting is used in the following apps:

 Portfolio Analysis

Set Threshold Alert Delivery Options for a Budget Plan

You can assign users and groups to alerts and specify the method of delivery of the message. You can enter a custom message to the user or keep the default message. The message should be appropriate to all recipients. You cannot specify a different message for different recipients. You can, however, specify different methods of delivery for different users and groups.

When a threshold is met, only one alert will be sent. For example, if you set a threshold to alert users when the actuals of a project exceeds a certain amount, one alert will be sent. If the Actuals value continues to increase, additional alerts will not be sent.

To set threshold alert delivery options for a budget plan:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, select **⚙ Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Thresholds**.
- 4) In the context bar, select the planning period **▼ menu**, and select the planning year, which is either the current year or the subsequent year.
- 5) In the settings pane, under the **Alerts** section, select **Assign ▼**, and then select **User** or **Group**.
- 6) In the **Select User** or **Select Group** dialog box:
 - a. Enter part or all of the username, personal name, or group name into the **Search** field.
 - b. Select the name, and select **Select**.
- 7) In the user row, select what type of message should be sent from the following options:
 - ▶ **Notification**: Sends a system notification to the user's Notifications panel.
 - ▶ **Email**: Sends an email to the user's email address stored in the LDAP.
- 8) (Optional) In the **Message** field, enter a message that will be sent to the selected users and groups.
- 9) Select **Save**.
- 10) In the **Summary & Settings** panel, select **× Close**.

This setting is used in the following apps:

 Portfolio Analysis

Set Workflows for Reviewing, Proposing, and Approving a Budget Planning Scenario

Determine the workflows to use when sending a budget plan scenario through the review, propose, and approve processes. For budget planning, you can use the built-in workflows or custom workflows configured by your organization.

To set workflows for a budget planning scenario:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Workflows**.
- 4) In the context bar, select the planning period  **menu**, and select the planning year, which is either the current year or the subsequent year.
- 5) Select a workflow for the **Send for Review**, **Propose**, and **Send for Approval** actions for the given planning period. These actions are performed from the Budget Planning page or from a Selection Analysis view, if configured. If you are using the built-in workflow processes, do not select a workflow.
- 6) Select **Save**.
- 7) In the **Summary & Settings** panel, select  **Close**.

This setting is used in the following apps:

Cost and Funds

Assign User Roles to a Workspace, Portfolio, or Project

Assigning user roles enables you to route portfolio budget and resource planning workflows to specific users. This can be done at multiple levels. Assigning roles at the workspace level is useful if the same people will be assigned the same roles for all projects within the workspace. At the portfolio level, the user role assignments apply to all projects within the portfolio. If assigned at the project level, the user roles will only apply to that project.

The creator of a workspace, portfolio, or project is, by default, assigned to it as a reviewer, approver, and owner. The creator is also assigned as the primary reviewer, primary approver, and primary owner and can assign other users to the object. New projects in any workspace automatically inherit the role assignments from that workspace, but changes to the workspace role assignments do not affect the role assignments of its projects.

To assign user roles to a workspace or portfolio:

- 1) In the object selector, select a workspace or portfolio.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Security**.
- 4) Select  **Edit Roles**.
- 5) In the **Edit Roles** dialog box, in the **Assign Roles** section, select  **Assign Users**.
- 6) In the **Select User** dialog box, enter a username, select the name, and then select **Assign**.
- 7) In the **Edit Roles** dialog box, select the roles you want users to perform:

- ▶ **Reviewer:** The users assigned to the Reviewer role will receive notification when a planner sends a budget or resource plan scenario out for review.
 - ▶ **Approver:** The users assigned to the Approver role will receive notification when a planner sends a budget or resource plan scenario out for approval.
 - ▶ **Owner:** The users assigned to the Owner role in the respective projects will receive notification when a planner shares the projects in a budget or resource plan scenario proposal for negotiations.
- 8) Review the primary roles in the **Set Primary Role Defaults** section and make updates as necessary.
 - 9) Select **Assign**.
 - 10) Select **Save**.
 - 11) In the **Summary & Settings** panel, select **✕ Close**.

To assign user roles to a project:

- 1) In the object selector, select a project.
- 2) In the sidebar, hover over **Project Team**, and select **Security**.

Tips

- ▶ You can also do this in the Workspaces, Portfolios, or Projects inventory panels.

Additional Settings

Some settings may need to be configured in other areas of the application.

Assign a Code to a Project

Assign codes to projects to help track projects based on attributes they share. When managing a large number of projects, project codes enable you to filter and group information across the organization.

To assign a code to a project:

- 1) In the object selector, select **Projects**, and then select **View All Projects**.
- 2) In the table, select a project, and then select the **Codes** detail window.
- 3) Select **Assign**.
- 4) In the **Select Code** dialog box, expand the code, and select the code value.
- 5) Select **Select**.
- 6) Save your changes:
 - a. Select **Save**.
 - b. In the inventory panel, select **✕ Close**.

Assign a Code to a Program

Assign codes to a program to help track programs based on attributes they share. When managing a large number of programs, program codes enable you to filter and group information across the organization.

To add a code to a program:

- 1) **Navigate to the program codes page** (see page 247).
- 2) Select **Assign**.
- 3) In the **Select Code** dialog box, expand the code, and select the code value.
- 4) Select **OK**.
- 5) Save your changes:
 - a. Select **Save**.
 - b. In the **Summary & Settings** panel, select **✕ Close**.

Assign a Code to a Portfolio

Assign codes to portfolios to help track portfolios based on attributes they share. When managing a large number of portfolios, portfolio codes enable you to filter and group information across the organization.

To assign a code to a portfolio:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, select **⚙ Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Codes**.
- 4) Select **Assign**.
- 5) In the **Select Code** dialog box, expand the code, and select the code value.
- 6) Select **OK**.
- 7) Select **Save**.
- 8) In the **Summary & Settings** panel, select **✕ Close**.

Add a Dependency to a Project

Identify relationships between projects using project dependencies. Dependencies are used in portfolio budget planning to ensure all dependent projects are included in a budget planning scenario. The project dependencies supported in the application are Depends On and Supports.

Depends On: A project depends on work being performed in another project. For example, Project A depends on some aspect of Project B and cannot be completed without that work being performed.

Supports: A project is supporting another project. For example, Project B is supporting Project A.

To add a dependency:

- 1) In the object selector, select a project.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Dependencies**.
- 4) Determine whether your project depends on another project or supports another project, and select **Assign**.
- 5) In the **Select Project** dialog box, select a project, and select **OK**.
- 6) Select **Save**.
- 7) In the **Summary & Settings** panel, select  **Close**.

You can also do this in the Projects inventory panel.

- 1) In the object selector, select  **Projects**, and then select **View All Projects**.
- 2) In the table, select the project row, and then select the **Dependencies** detail window.

Plan

Project and Portfolio Evaluation Overview

Project evaluation scores are used to prioritize and select the right projects or proposals for the organization to pursue based on quantitative data. An Evaluation Matrix is used for defining project evaluation categories based off of organizational business drivers for which projects are ranked against.

Use the Prioritization Matrix to view evaluations scores for all projects within the portfolio. Use the project evaluation scores to prioritize and select the right projects or proposals for the organization to pursue based on quantitative data. Before you can view your portfolio's prioritization matrix, you must create evaluation categories and rank your projects or programs against them.

An Investor Map is also available, enabling you to analyze project performance using a customizable bubble chart.

Evaluation Categories Overview

Evaluation Overview Video

Define project, program, and idea evaluation categories based off of organizational business drivers. Evaluation categories are grouped into an evaluation matrix, which you can use to rank and assess your projects, programs, and ideas against your company's requirements and standards. In portfolio management, overall project and program evaluation scores are then viewed in the Prioritization Matrix.

Add an Evaluation Matrix

There is one evaluation matrix per workspace. The evaluation matrix includes evaluation categories, each with their own subcategories. Add evaluation categories to rank and assess projects, programs, and ideas. See *Evaluation Matrix Overview* (on page 55) for more information.

To add an evaluation matrix:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Evaluation Categories**.
- 4) Select **+ Add**.
- 5) In the new row, complete the following fields for a category:
 - ▶ **Name**: The name of the evaluation category.
 - ▶ (Optional) **Description**: Details describing the evaluation category.
 - ▶ **Weight**: The relative weight of the sibling evaluation node to indicate contribution of a given node to its parent evaluation node.
 - ▶ **Weight Percent**: The weight or relative rank of the evaluation node compared to its siblings. This value indicates the percentage that the evaluation node is contributing to the parent strategy. The Weight Percent for all sibling evaluation nodes equals 100. This field is read-only.
- 6) (Optional) Select the  **Context** menu, and select **Add Subcategory**.
- 7) In the new row, complete the same fields for the subcategory including the following option:
 - ▶ **Type (Optional)**: Determines the type of ranking applied to a subcategory. Select **Manual** (Default) or **Thresholds**. When **Thresholds** is selected, you have the option to configure specific fields to associate with each rank.
- 8) (Optional) In the **Project Thresholds**, **Program Thresholds**, and **Ideas Thresholds** detail windows, configure the ranking for the subcategory when **Thresholds** is selected as the **Type**. Make any of the following modifications:
 - ▶ **Name**: Modify the names as needed. This option is available in the Project Thresholds, Program Thresholds, and Ideas Thresholds details window.
 - ▶ **Description**: Explains the ranking of the subcategory.
 - ▶ **Color**: Select a color representing the evaluation ranking.
 - ▶ **Field**: Determine a specific map to a ranking.
 - ▶ **Operator**: Select an operator to determine how the ranking is applied.
 - ▶ **Value**: Enter a value to determine the evaluation ranking.
 - ▶ **High Value**: Enter a high value to determine the evaluation ranking. This field is only required if the Within or Not Within Range is selected as the Operator.
 - ▶ **Reverse Ranks Order**: Select the icon to reverse the order of the ranks. Weight percentage values remain the same.

- ▶ **Weight Percent:** The weight percentages for the evaluation ranking. The default values are evenly distributed based on the number of selected ranks. You can manually specify different percentage values.
- 9) In the **Ranks** detail window, configure the ranking for the subcategory. A scale is preconfigured for you. Make any of the following modifications:
- ▶ **Scale:** Determine how many options are available on the rating scale. You can display up to 21 options. When increasing or decreasing the scale, you must confirm your selection in the confirmation window. When decreasing the rank scale, additional rank details are deleted, and weight percent values are reset based on the selected rank.
 - ▶ **Reverse Ranks Order:** Select the icon to reverse the order of the ranks. Weight percentage values remain the same.
 - ▶ **Name:** Modify the names as needed. For a scale number greater than 9, a default generic rank name will be added such as Rank 10 and Rank 11.
 - ▶ **Weight Percent:** The weight percentages for the evaluation ranking. The default values are evenly distributed based on the number of selected ranks. When additional ranks are added, the newly created weight percent fields are defaulted to zero. When a rank is removed the weight percent values are reset. You can manually specify different percentage values.
 - ▶ **Color:** Select a color representing the evaluation ranking.
 - ▶ (Optional) **Description:** Details describing the rating. When the scale is increased, new blank description fields are displayed.
- 10) Select **Save**.
- 11) In the **Summary & Settings** panel, select **✕ Close**.

Tips

- ▶ If a subcategory is currently in use it cannot be deleted.
- ▶ You can add or disable subcategories in inherited evaluation matrices.
- ▶ For an Evaluation Matrix to have an Active status, there must be at least one subcategory in each category with a status of Enabled. When all subcategories of a category in an Evaluation Matrix have status Disabled, the Evaluation Matrix will have an Inactive status and will not be usable.

This setting is used in the following apps:

 **Portfolio Analysis**

 **Strategic Alignment**

Rank a Project, Program, or Idea Against Evaluation Categories

Rank a project, program, or idea against evaluation subcategories, depending on the applicability of the project, program, or idea to a subcategory, that justifies alignment with the organization.

To rank a project, program, or idea:

- 1) In the object selector, select a project, program, or idea.

- 2) In the sidebar, hover over **📍 Strategic Alignment**, and select **Evaluation**.
- 3) Select a **Rank** for each applicable evaluation subcategory. You can review the ranking descriptions in the **Ranks** detail window.
- 4) Select **Save**.

Note: You can only rank submitted ideas.

Tips

- ▶ If the project or program belongs to a portfolio, this task can also be completed on the **Prioritization Matrix** page at the portfolio level. Values entered on the **Evaluation** page are synchronized with values on the **Prioritization Matrix** page.
- ▶ To quickly clear multiple rank values at the same time, select one or more rank values, and then press **Shift + Delete**.
- ▶ When an evaluation subcategory Source is set to Thresholds, the Rank cell is set to read-only and cannot be edited.

Review Evaluation Scores for a Project, Program, or Idea

Review the individual evaluation category scores and overall score for projects, programs, ideas.

To review evaluation scores:

- 1) In the object selector, select a project, program, or idea.
- 2) In the sidebar, hover over **📍 Strategic Alignment**, and select **Evaluation**.
- 3) Review the evaluation scores.
 - ▶ **Score:** The subcategory score formula is calculated as the selected Rank Weight % multiplied by the given subcategory Weight % divided by 100.
The category score formula is calculated as the sum of the subcategory Scores. If a given subcategory does not have a score, its score is 0.
 - ▶ **Total Score:** The score based off all ranked categories.
- 4) Select **Save**.

Tips

- ▶ If the project or program belongs to a portfolio, its evaluation score can also be reviewed on the **Prioritization Matrix** page at the portfolio level. Values entered on the **Evaluation** page are synchronized with values on the **Prioritization Matrix** page.
- ▶ When an evaluation subcategory Source is set to Thresholds, the Rank cell is set to read-only and cannot be edited.
- ▶ The **⚠ Score is out of sync** icon indicates the evaluation matrix has been updated. Select **🔄 Re-Evaluate Score** to recalculate scores using the updated matrix. If new evaluation categories or subcategories were added, update as needed.

- ▶ To remove all evaluation scores, select the  **Reset Scores** button. You must have the Edit privilege.
- ▶ An Evaluation Matrix must have an Active status to be used for Evaluation. See **Evaluation Matrix Overview** (on page 55) for more information.

Review and Update Evaluation Scores for a Portfolio

Use the Prioritization Matrix to view the overall evaluation scores for all projects and programs within a portfolio and update the individual evaluation category scores as needed.

You can also update evaluation scores using import. See **Create Rank Values by Import** (on page 105) for more information.

To view the prioritization matrix:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Portfolio Analysis**, and select **Prioritization Matrix**.
- 3) In the **Show** list, select one of the following:
 - ▶ **All**: Displays results for all projects and programs in the portfolio.
 - ▶ **Budget Approved**: Displays all projects in the approved budget scenario.
 - ▶ **Resource Approved**: Displays all projects in the approved resource scenario.
- 4) Review the evaluation scores and the category scores.

If the  **Score is out of sync** indicator displays, select  **Re-Evaluate Project Scores** to recalculate any out of sync project or program scores based off the updated matrix.

- 5) Make updates to the subcategories as needed.

Note: **Show Scores** must be disabled to make updates.

- 6) To post a question or review discussions on a project, select  **Discuss**.

Note: If no comments have been posted to the Discussion panel, the  **Discuss** icon is empty.

To post a new comment:

- ▶ In the **Post a comment** field, enter a comment, and select **Post**.

To reply to a comment:

- ▶ Select **Comment**.
- ▶ In the **Post a reply** field, enter a reply, and select **Reply**.

- 7) Select **Save**.

Tips

- ▶ Select **Show Scores** to toggle the display of individual evaluation subcategory scores.
- ▶ Select **Show Cell Color** to toggle the display of ranking colors for each evaluation subcategory.

- ▶ To quickly clear score values from a subcategory, select one or more subcategory values from the same column, and then press **Shift + Delete**.
- ▶ To remove evaluation scores, select the **Reset Scores**. You must have Reset Evaluation Score privilege. **Reset Scores** removes the scores for those objects within the portfolio for which you have Edit privilege.
- ▶ Individual evaluation scores can also be updated on the **Evaluation** page at the project or program level. Values entered on the **Prioritization Matrix** page are synchronized with values on the **Evaluation** page.
- ▶ You cannot edit or delete a posted comment.
- ▶ When an evaluation subcategory Source is set to Threshold, the Rank cell is set to read only and cannot be edited.
- ▶ Workspaces within the hierarchy can contain common evaluation categories, but those categories can have different subcategories. In this case, shared common category scores are displayed on the Portfolio Prioritization Matrix page.

Create Rank Values by Import

Creating and updating prioritization matrix rank values using Microsoft Excel enables you to use data from an outside system which can save you time from manual entry.

Use an Excel template to update evaluation category rank values for the projects and programs in a portfolio, and then import the values to the Prioritization Matrix page. The evaluation scores for each project and program are calculated based on the values entered in the template.

To download and import prioritization matrix rank values:

- 1) **Download an Import Template for Importing Rank Values** (on page 105)
- 2) **Import Rank Values from Microsoft Excel** (on page 106)

Download an Import Template for Importing Rank Values

Download a Microsoft Excel template to use when importing project and program rank values. These values are imported to the Prioritization Matrix page at the portfolio level and are used to update project and program evaluation scores.

To download an import template for importing rank values:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over **Portfolio Analysis**, and select **Prioritization Matrix**.
- 3) Select **Actions** ▼, select **Download Import Template**, and then select one of the following:
 - ▶ **Empty Template**: Use this template to create data.
 - ▶ **Template with Data**: Use this template to update the data that exists in the table.

Tips

- ▶ The import template is downloaded as a Microsoft Excel file.
- ▶ The top two rows of the worksheet are required. Do not change the data in these rows.
- ▶ Review the Instructions worksheet on the first tab of the spreadsheet for helpful tips on populating the import template.

Import Rank Values from Microsoft Excel

You can import prioritization matrix rank values into the application from a Microsoft Excel (.xls or .xlsx) file. After downloading the import template, follow the instructions to create or update project and program rank values in the spreadsheet. Rank values can then be edited for subcategories with Source set as Manual. For subcategories with Source set as Thresholds, the Rank value is set to read-only and cannot be edited on the prioritization matrix. The import will fail if there are any invalid values in the spreadsheet. You can download the spreadsheet file to view and fix the errors indicated in the error column at the end of each worksheet, and then import the file again.

You must have sufficient privileges to perform this task.

To import rank values from Microsoft Excel:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Portfolio Analysis**, and select **Prioritization Matrix**.
- 3) On the **Prioritization Matrix** page, select the **Actions** ▼ menu, and then select **Import**.
- 4) In the **Import Portfolio Prioritization Matrix** dialog box, select **... Browse**, select a file, and then select **Import**.

Analyze Portfolio Performance Using the Investor Map

Use the investor map to assist in prioritizing the projects or portfolios within a portfolio and analyze performance using various project and portfolio dimensions. The map displays a configurable bubble chart. Bubble location, size, and color can be used to measure different attributes of project performance. Additionally, you can enable reference lines to separate the chart into quadrants based on values and performance metrics. All of the information on the page can be saved as part of the view.

To review the investor map:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Portfolio Analysis**, and select **Investor Map**.
- 3) Select Projects or Portfolios to view data for the projects or sub-portfolios in the current portfolio.
- 4) In the Data section:
 - ▶ X Axis and Y Axis: Select project-level or portfolio-level data to analyze across projects or sub-portfolios.
 - ▶ (Optional) Bubble Size: Select data that is used to determine the size of the bubbles.
 - ▶ (Optional) Bubble Color: Select data that displays a color based on criteria.
- 5) In the View section, enable settings including legend, label, and grid line information.
- 6) Select More Options. In the More View Options dialog box, configure the following reference line settings:
 - a. X Axis and Y Axis:
 - Select one or both options to enable axis reference lines.

- Choose a Draw at value on which to draw each line.
 - Select Higher values are desirable if good performance is indicated by a higher axis value. This setting is applied if colors are enabled on the chart.
- b. Select Use colors to depict different sections on the chart to display a different color for each section. Red indicates a poor performance value. Yellow indicates a neutral performance value. Green indicates a good performance value. The color of each section is determined by the number of enabled reference lines and the Higher values are desirable settings.
 - c. Select Apply.
- 7) In the Show list, select one of the following:
 - ▶ All: Displays results for all projects or sub-portfolios in the portfolio.
 - ▶ Budget Approved: Displays results for all projects or sub-portfolios in the approved budget scenario.
 - ▶ Resource Approved: Displays results for all projects or sub-portfolios in the approved resource scenario.
 - 8) Select Save View or Save View As.
 - 9) Hover over the bubbles to view details.

Tips

- ▶ Select the  **Settings** icon to configure **Chart Options** and **Currency** settings in the **Manage Views** panel.

Build a Portfolio Budget Plan

The portfolio-level Costs and Funds app focuses on portfolio budget planning. A portfolio budget plan is created by allocating proposed budgets to each project in a portfolio that you decide to include in the budget plan scenario. Budget planning can only be done on projects in the portfolio. If a portfolio includes another portfolio, that portfolio and its projects are not available on the Budget Planning page.

To perform top-down budgeting, you can directly allocate proposed budgets for each project. To perform bottom-up budgeting, you can link to the values provided by project managers. The total of the proposed budget allocations for each project comprises the scenario and then ultimately the approved plan budget.

Budget planners create scenarios using the Budget Planning and Selection Analysis pages during the planning and selection process to determine the best combination of projects for a budget plan. The Budget Planning page enables budget planners to view and modify time-phased budget data for the entire planning horizon set for the portfolio. You can also allocate funds to the projects in your portfolio. The Selection Analysis page displays an analysis view opened from the Published Views page. Analysis views are customized layouts of the Budget Planning page that budget planners can use to analyze project attributes besides budget, such as Return on Investment, Net Present Value, and Profitability Index.

The instructions below follow the budget planning process from the Budget Planning page. See **Selection Analysis Overview** (on page 129) for the same set of steps from the Selection Analysis page. The same processes can be performed on both pages.

The Scenario Comparison page is also available to enable planners to review the project selection and data at the summary-level for all scenarios created.

Scenarios that are ready for execution can be sent through workflows for review, modification, and approval. You can use built-in or custom workflows for each stage of the process and designate different groups of users to each workflow role. At the end of the process, a single scenario will be approved and ready for use. After it is approved, the scenario serves as a guide for a budget planner to budget the selected projects in accordance with the plan.

Before you can begin portfolio budget planning, ensure that the projects in your portfolio contain appropriate cost data and that you **configure the settings for a portfolio budget plan** (see "**Configure Settings for a Portfolio Budget Plan**" on page 91).

To build a budget plan:

- 1) **Add a Budget Planning Scenario** (on page 109)
- 2) **Set the Target Budget for a Budget Planning Scenario** (on page 110)
- 3) (Optional) **Create Budget Scenario Data by Import** (on page 110)
- 4) **Configure the Budget Planning Page** (on page 112)
- 5) Select projects for inclusion in the budget plan:
 - ▶ **Manually select** (see "**Select Projects for a Budget Planning Scenario**" on page 115) your projects.
 - ▶ Use the **Optimization tool** (see "**Budget Scenario Optimization Overview**" on page 116) for automatic selection.
- 6) Determine the budget and dates for each project in the scenario:
 - ▶ **Link a Project's Proposed Budget with a Forecast or Planned Budget Value** (on page 126)
 - ▶ **Directly Allocate a Proposed Budget and Dates for a Project Within Budget Plan Scenarios** (on page 127)
- 7) (Optional) **Add and allocate funds** (see "**Portfolio Funds Overview**" on page 136) to your portfolio.
- 8) **Compare your scenarios** (see "**Scenario Comparison Overview**" on page 142) by reviewing financial data and other key performance indicators.
- 9) Send one or more scenarios through the **budget plan approval process** (see "**Budget Plan Approval Process Overview**" on page 143).

Budget Planning Overview

Budget Planning Overview Video

The Budget Planning page provides a time-phased view where budget planners can evaluate cost constraints over the entire planning horizon and make the right project selections. This is where the **detailed budget planning** (see "**Build a Portfolio Budget Plan**" on page 107) occurs.

Create a budget plan and select the right projects to execute for a specific planning period or budget cycle. Creating scenarios is a core process of the budget planning process. Scenarios are used to decide the best group of projects for each planning period. Budget planners use scenarios to create multiple what-if options and select different combinations of projects for the plan year.

The Published Views page contains customized layouts of the Budget Planning page so budget planners can focus on project attributes besides budget. Opening a published view display it on the Selection Analysis page. The same processes can be performed on both pages.

Use the Budget Planning page to:

- ▶ Review the time-phased planned budget or forecasted costs entered by the project manager, and choose to link to those costs or propose an alternative budget.
- ▶ Review the Capital and Expense breakdown cost curves associated with each project. These breakdowns can be viewed in both the **Project** and **Program** views on the **Budget Planning** page.
- ▶ Assign and allocate funds to the projects in your portfolio.
- ▶ Review the project start and end dates entered by the project manager, and propose revised dates based on budget allocations.
- ▶ Select the subset of projects for inclusion in the budget plan.
- ▶ Use the Efficient Frontier optimization tool to suggest an optimal selection of projects for inclusion in the budget plan.
- ▶ Create multiple plan scenarios to model a variety of plans based on different sets of criteria.
- ▶ Send scenarios out for review to stakeholders in the planning group to evaluate the mix of projects.
- ▶ Send the candidate scenario to project managers to negotiate the budget and project start and end dates with the project manager for each project.
- ▶ Send the final scenario out for final approval, and then approve the plan.
- ▶ Communicate with the planning group and project managers that have access to the projects within the scenarios.

Add a Budget Planning Scenario

Add a Budget Planning Scenario Video

Create budget planning scenarios to determine the best group of projects to execute under budget constraints for a given planning period budget cycle. One or more scenarios can be created to model the plan using different sets of criteria, enabling you to make more informed decisions.

Scenarios added to the Budget Planning page will also appear in the analysis views on the Selection Analysis page.

To add a scenario:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Budget Planning**.
- 3) In the context bar, select the planning period  **menu**, and select the planning year, which is either the current year or the subsequent year.

- 4) Select the **Actions** ▼ menu, and then select **Add Scenario**.
- 5) In the **Add Scenario** dialog box, enter a name for the scenario, and select **Save**.

Tips

- ▶ All new scenarios have a status of *In Planning*. The status cannot be changed manually.
- ▶ Select **Scenario Options** in the **Actions** ▼ menu to rename, duplicate, hide, and delete budget planning scenarios.
- ▶ To delete a scenario, the scenario must have a status of *In Planning*.

Set the Target Budget for a Budget Planning Scenario

Set the Target Budget for a Scenario Video

Set a target budget for the entire planning horizon. This value is used during the planning and selection process to guide budget planners when selecting projects for inclusion in the budget scenarios on the Budget Planning page and when using Selection Analysis views.

Target Budget values added to a scenario on the Budget Planning page will also appear in the same scenario on the Selection Analysis page.

To set the target budget:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Budget Planning**.
- 3) In the context bar, select the planning period ▼ menu, and select the planning year, which is either the current year or the subsequent year.
- 4) Select the scenario from **Scenario** ▼.
- 5) Select  **Grid** from the **Layout** menu.
- 6) In the **Target Budget** row, enter a value which defines the target budget for the entire planning horizon in the **Total** column.
- 7) Select **Save**.

Create Budget Scenario Data by Import

You can bulk import budget scenario data into an existing scenario using Microsoft Excel. The data available for import includes project selected state, linked budgets, start and finish dates, total cost, and yearly bucket data. Download a pre-formatted template, follow the instructions in the spreadsheet, and then import the complete template into Oracle Primavera Cloud. Using data from an outside system can save you time from manual entry.

Download an Import Template for Importing Budget Scenario Data

Download a pre-formatted Microsoft Excel template to use when importing budget scenario data. After you download the template, enter the name and ID of each project in the scenario, and then enter budget scenario details, including selected state, total cost, and spread cost data. When you are finished, you can import the updated template to create the data in Oracle Primavera Cloud.

To download an import template:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Budget Planning**.
- 3) Select **Actions** ▼, and then select **Download Import Template**.

Note: This option is only available if the current scenario is *In Planning*.

Tips

- ▶ The import template is downloaded as a Microsoft Excel file with the default file name ScenariosImportTemplate
- ▶ The top two rows of each worksheet are required when importing resources from a spreadsheet. You can delete unused optional columns, but do not change the data in these rows.
- ▶ Only one scenario can be imported per template.
- ▶ Review the Instructions worksheet on the first tab of the spreadsheet for helpful tips on populating the import template.

Import Budget Scenario Data from Microsoft Excel

You can bulk import budget scenario data into an existing scenario from a Microsoft Excel (.xls or .xlsx) file. After downloading the import template, follow the instructions to enter data in the spreadsheet. The import will fail if there are any invalid values in the spreadsheet. You can download the spreadsheet file to view and fix the errors indicated in the error column at the end of each worksheet, and then import the file again.

You must have sufficient portfolio privileges to import budget scenario data from Microsoft Excel.

To import budget scenario data from Microsoft Excel:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Budget Planning**.
- 3) Select the scenario where you want to import the budget scenario data.
- 4) In the **Project View**, select the **Actions** ▼ menu, and then select **Import**.

Note: This option is only available if the current scenario is *In Planning*.

- 5) In the **Import Project Budget** dialog box, select **... Browse**, select a file, and select **Import**.

Tips

- ▶ Only one scenario can be imported per template.
- ▶ During the import process, the page is read-only. When the process is complete, you will receive a system notification with a link to the **Budget Planning** page.

Configure the Budget Planning Page

Configure, manage, and save a variety of view settings on the Budget Planning page to display the tools most important to your budget planning process. A Standard view is available that displays default columns and cost curves.

To configure the Budget Planning page:

- ▶ **Configure the Budget Planning Page Grid** (on page 112)
- ▶ **Configure the Budget Planning Page Chart** (on page 112)
- ▶ **View Project Dependencies on the Budget Planning Page** (on page 113)
- ▶ **Configure the Waterline View on the Budget Planning Page** (on page 114)

Configure the Budget Planning Page Grid

Configure the Budget Planning grid to view important information while working out the budget for the portfolio budget plan.

To configure the grid view:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Budget Planning**.
- 3) On the **Budget Planning** page, select  **Grid** from the **Layout** menu.

Note: The default view for the **Grid** is the **Project View**. The **Project View** shows all projects that are in the portfolio on the **Budget Planning** page. You can also select **Program View** to view the budget plans at the program level. The **Program View** shows projects grouped by their primary program and summarizes the project data at the program level. Projects that do not have a primary program are not grouped and are displayed separately.

- 4) Select  **Settings** to add or remove columns, filter project data, group projects by specific criteria, display additional cost curves including capital and expense breakdowns, modify waterline options, or set formatting options.
- 5) Select **Apply**.

Tips

- ▶ A **Standard** view is available from the **View** ▾ menu that displays default columns and cost curves.

Configure the Budget Planning Page Chart

Budget Planning Page Chart Video

Configure the budget planning chart to view cost spread visualizations while working out the budget for the budget plan.

To configure the chart:

- 1) In the object selector, select a portfolio.

- 2) In the sidebar, hover over  **Cost and Funds**, and select **Budget Planning**.
- 3) On the **Budget Planning** page, select  **Chart** from the **Layout** menu.
- 4) Select **All** to view cost spreads at the budget plan level.
Customize the view:
 - ▶ From the **Show** menu, select the projects to display.
 - **All**: All projects included in the portfolio.
 - **Included**: Projects selected for inclusion in the budget plan scenario.
 - **Not Included**: Projects that have not been selected for the budget plan scenario.
 - ▶  **Settings**: Select to filter project data or display additional cost curves including capital and expense breakdowns.
 - ▶ **Chart Data: Incremental** and **Cumulative**: Select to view incremental bars, cumulative cost curves, or both.
 - ▶ **Timescale**: Slide the handles on the timescale to zoom in or out on a time frame.
- 5) Select **By Project** to view which projects are contributing the most to the selected cost curve cost in a given time frame.

Customize the view:

- ▶ From the **Show** menu: Select the projects to display.
 - **All**: All projects included in the portfolio
 - **Included**: Projects selected for inclusion in the budget plan scenario.
 - **Not Included**: Projects that have not been selected for the budget plan scenario.
- ▶ **Secondary Axis**: Select the Secondary Axis toggle to compare cost curves to the Scenario Planned Budget on a second Y-axis to the right of the chart.
- ▶ **Cost Curve**: Select a cost curve to view on the chart. This list includes the cost curves for Portfolio Proposed Budget, Forecast, Planned Budget, Portfolio Approved Budget, Benefits, and Actuals.
- ▶ **Project Count**: Select the number of top contributing projects to display in the chart for the selected cost curve within the selected time frame.
- ▶ **From** and **To**: Select the time frame for which you want to view the top contributing projects. After making a selection, click **Apply**.
- ▶ **Chart Options**: Select to view cost curves in a Line, Line Area Stacked, or Stacked Histogram chart.
- ▶ **Timescale**: Slide the handles on the timescale to zoom in or out on a time period.

View Project Dependencies on the Budget Planning Page

It is important to review projects that depend on or support the projects being selected for budget plans during project selection.

To view project dependencies:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Budget Planning**.
- 3) On the **Budget Planning** page, from the **Layout** menu, select  **Unmet Dependencies**.

Note: The **Unmet Dependencies** option is not available for **Program View**.

- 4) Select a project to view whether it supports or depends on another project.

Tips

- ▶ A **Standard** view is available from the **View** ▾ menu that displays default columns and cost curves.

Configure the Waterline View on the Budget Planning Page

Display a waterline to help analyze the project group within the portfolio to assist you in making decisions on selecting projects for the budget plan. A waterline sorts projects in the portfolio into two separate groups based on the defined constraint limit. Projects above the waterline are those that collectively meet the constraint limit value; all other projects appear below the waterline.

To configure the waterline view:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Budget Planning**.
- 3) From the **Layout** menu, select  **Waterline View**.

Note: When Waterline View is enabled for Program View, the waterline level will include both projects and programs in the criteria. Programs (including all projects in the program) will compete against other programs and those projects not included in a program. Sorting applies to projects and programs together.

- 4) In the grid toolbar, select  **Settings**.
- 5) In the **Settings** panel, select the **Waterline Options** tab.
- 6) In the **Waterline Level** section:
 - a. Select options for the following fields to configure the waterline level:
 1. **Limit:** The field used as a parameter when setting the waterline level limit.
 2. **Is:** Determines the logical relationship between the Limit field and your entry in the associated Value field.
 3. **Value:** The limit used to determine which projects and programs meet the defined parameter value and which do not meet the parameters and therefore fall below the waterline.
 - b. Select **Only include above waterline level projects automatically** to automatically select only the projects that meet your waterline preference in your budget planning scenario. When this option is selected, you cannot select any projects that fall below the waterline unless you force them in. You also cannot unselect any projects that are above the waterline unless you force them out.

Note: When selected for the Program View, **Only include above waterline level projects automatically** applies to all projects in a

program; projects are selected or unselected as part of the program.

- 7) In the **Sort By** section, specify the first and optionally second and third fields used to rank and sort the projects.
- 8) Select **Apply**.

Tips

- ▶ You can also update **Waterline Options** by selecting the  icon on the waterline.
- ▶ A **Standard** view is available from the **View** ▼ menu that displays default columns and cost curves.
- ▶ If a project or program does not meet the waterline criteria, but must be included in the budget plan, select  **Forced In**. Conversely, if it has been determined that a project or program will not be included in the budget plan even though it does meet the waterline criteria, select  **Forced Out**.
- ▶ If a program contains both forced in and forced out projects, the program and all projects in the program will be forced out.

Select Projects for a Budget Planning Scenario

Select projects to include in budget plan scenarios using tools available on the Budget Planning page.

To select projects for a budget plan scenario:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Budget Planning**.
- 3) On the **Layout** menu, select  **Grid**.
- 4) (Optional) To view waterline or unmet dependency information, select  **Waterline View** or  **Unmet Dependencies** from the **Layout** menu.

Note: The **Unmet Dependencies** option is not available for **Program View**.

- 5) To include a project in a budget plan scenario, in the table, select the **Project State** field to display the  **Selected** state or  **Forced In** state. To add multiple projects at once, use Ctrl + click to highlight each project. On the **Actions** ▼ menu, select **Include**, and then select **Highlighted Projects**.

Note: The **Forced In** and **Forced Out** states are useful if you have predetermined whether projects are included in the budget plan. These states are also useful if you are using the **Waterline View** and you want to include or exclude the project in the scenario whether or not the project meets the selected criteria.

The **Proposed Budget** row now includes the total cost for the project, and the value of the included projects field has increased. As you make selections, the **Difference** row displays the difference between the **Target Budget** and the **Proposed Budget**, which is based on the totals for the selected projects.

6) Select **Save**.

Tips

- ▶ Select **Refresh** to run the portfolio filter to ensure all projects are included in the scenario. Refresh the filter on each scenario if you have multiple scenarios.
- ▶ In the table, expand individual projects to view specific cost curve data such as **Capital Portfolio Proposed Budget** and **Expense Portfolio Proposed Budget**.

Budget Scenario Optimization Overview

The Optimization tool enables portfolio managers to make optimal project selections for their portfolios by taking into account both total and time-phased budget constraints. Given a set of constraints and specified objectives, the tool simulates the selection of different combinations of projects, and suggests the optimal set of projects for inclusion in a budget scenario to realize the maximum portfolio value.

During the optimization process, the tool maximizes a primary objective value based on the input cost constraints. For example, you may want to maximize the Evaluation Score or Net Savings of your portfolio while applying budget constraints to your Planned Budget or Proposed Budget. Optionally, you can maximize or minimize a secondary objective value to further refine your optimization results. For example, you might select a primary objective which maximizes the Evaluation Score of your portfolio and a secondary objective that minimizes the Total Cost value.

Cost constraint fields and values are typically input manually, but you can also use portfolio funds as your constraints. Portfolio managers often have different sources available to fund the projects in their portfolios. Funds can have their own total and yearly cost constraints, as well as restrictions on the types of projects they can be used to fund. After adding funds to your portfolio, run Optimization with fund constraints to generate an optimal selection that meets your objective and adheres to all fund restrictions. With funds as your constraints, the Optimization process automatically assigns funds to your projects and allocates total and time-phased cost values to each fund. You can use the tool to view how your funds might be distributed in an optimized scenario.

Optimal project selections for both total and time-phased cost constraint values are visually represented on an efficient frontier analysis curve, an additional aid in the decision-making process for project selection. The Total Cost Constraint line shows the best possible project selection using only a total cost constraint. The Total & Time-phased Cost Constraint line shows the best possible selection of projects using all possible cost constraints. After running the optimization process, project selections are made automatically that represent the primary and secondary objective values within the given constraint limits. An Optimal Selection point is drawn on the chart that reflects the total cost value and total objective values of the projects selected.

If possible, the Optimization tool also generates alternative constraint solutions that may achieve greater value than your current selection. The tool suggests different possible distributions of your time-phased constraints that would allow for a greater portfolio value at the same or lower total cost. Review up to two recommended solutions and use the values to overwrite an existing scenario or create a scenario. Recommendations are not generated when using funds as constraints.

Working with the Budget Scenario Optimization Tool

Use the Optimization tool on the Budget Planning page to generate a selection of projects that maximizes the portfolio value under a given set of project and cost constraints. Specify cost constraints and objective values, and then run the optimization to view the optimal selection.

The screenshot displays the Budget Planning tool interface. On the left is a table of projects with columns for Name, Start, Finish, Evaluation Score, Distributed, Total, and year-based costs (2023-2027). On the right is the Efficient Frontier chart, which plots Evaluation Score against Proposed Budget. The chart includes a 'Total Cost Constraint' line, a 'Total & Time-phased Cost C.' line, and an 'Optimal Selection' point. The interface also features a 'Recommendations' panel with an 'Apply Optimization' button and a 'Constraints' panel with a 'Constraint Field' dropdown.

Name	Start	Finish	Evaluation Score	Distributed	Total	2023	2024	2025	2026	2027
Target Budget				\$750,000	\$750,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
Proposed Budget (8 of 13)	01-Jan-23	31-Dec-28		\$696,000	\$760,000	\$126,000				
Difference				\$54,000	(\$10,000)	\$24,000				
125 Market Replacement	01-Jan-23	01-Dec-24	94%	\$40,000	\$60,000	\$10,000	\$11,000			
Wide Network Load Bal...	01-Jan-23	01-Dec-25	96%	\$75,000	\$75,000	\$15,000	\$15,000	\$15,000		
Document Management	01-Jan-23	01-Dec-27	92%	\$100,000	\$100,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
Airport - Terminal 99	01-Jan-23	31-Dec-27	68%	\$85,000	\$85,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000
Bare Metal Research Proj...	01-Jan-23	31-Dec-27	73%	\$35,000	\$35,000	\$5,000	\$6,000	\$7,000	\$8,000	\$9,000
RAD Monitor Improve...	01-Jan-23	01-Dec-24	69%	\$225,000	\$225,000	\$45,000	\$45,000			
Eastern Ave Viaduct Impr...	01-Jan-23	31-Dec-27	81%	\$150,000	\$150,000	\$20,000	\$25,000	\$30,000	\$35,000	\$40,000
101 Bldg Mid-Rise & Hg...	01-Jan-23	01-Dec-25	96%	\$50,000	\$50,000	\$10,000	\$10,000	\$10,000		
One Foot in the Sand Co...	01-Jan-23	31-Dec-27	68%	\$60,000	\$60,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000
ERP Final Upgrade	01-Jan-23	31-Dec-27	90%	\$40,000	\$40,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000
Downtown Office Buildin...	01-Jan-23	31-Dec-27	65%	\$70,000	\$70,000	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000
Feng Shui Corporate Park	01-Jan-23	31-Dec-27	96%	\$65,000	\$65,000	\$13,000	\$13,000	\$13,000	\$13,000	\$13,000
Cooling Coil Upgrade	01-Jan-24	30-Dec-24	67%	\$16,000	\$80,000		\$16,000			

Table of Screen Highlights

Item	Description
1	Objectives: Select a Primary Objective field whose value you want to maximize. Optionally, maximize or minimize a Secondary Objective field value to further refine optimization results.

Item	Description
2	Constraints: Configure cost constraints manually or, if fund data has been entered, ⇌ Switch to Funds Constraints to specify funds constraints. To configure manual cost constraints, select Edit to choose the cost constraint field, enter a total cost constraint value, and enter time-phased cost constraint values. Time-phased constraint values can only be entered for Planned Budget, Proposed Budget, and Forecast fields.
3	Cost Constraint Lines: The Total Cost Constraint line considers the specified total cost constraint only. The Total & Time-phased Cost Constraints line considers the total cost constraint and the specified time-phased cost constraints. Both lines also consider project budget constraints, project dependencies, and any projects with Forced In or Forced Out states.
4	Selection Points: The Optimal Selection point represents the total cost value and total objective value of the optimal set of projects selected by the tool. If you manually select any projects, a Current Selection point is plotted to represent the total cost value and total objective value of the manual selection.
5	Apply Optimization: Select Apply Optimization to apply the optimized project selection on the scenario.
6	Recommendations: Review alternative time-phased cost distribution scenarios that may achieve greater value for your portfolio.
7	Selected Projects: After applying optimization, the State field is highlighted green for projects that have been selected, red for projects that have been deselected, and not highlighted for projects whose state did not change.

Use Optimization to Select Projects for a Budget Planning Scenario

Use the Optimization tool to simulate different project selection scenarios. Specify project and cost constraints, choose primary and secondary objective fields, and run the analysis to generate the optimal selection of projects.

To select projects using Optimization:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Budget Planning**.
- 3) Select  **Scenario Optimization** to display the **Optimization** panel.

Note: In the **Optimization** panel, select  **Expand** to view the panel in full-screen mode.

- 4) Specify Optimization parameters. In the **Constraints** section, configure cost constraints manually or, if fund data has been entered, select ⇌ **Switch to Funds Constraints** to specify your method of input.

- ▶ To configure manual cost constraints:
 - a. Select  **Edit** to configure total and time-phased cost constraints.
 - b. In the **Constraints** dialog box, choose a **Constraint Field** value, add a **Total Cost** value, and add time-phased cost values at a yearly level.
- ▶ If you selected **Funds Constraints**:
In the **Funds Constraints** field list, select a field against which you want to allocate your funds. Cost constraints amounts are determined using fund availability values.

Notes:

- Select the  **Context** menu, and then select **Copy from Target Budget** to copy the values from the Target Budget row into the **Total Cost** and time-phased yearly cost fields. Select **Clear Values** to clear all numeric values in the dialog box.
- Time-phased constraint values can be entered for the **Planned Budget**, **Proposed Budget**, **Proposed Fund**, and **Forecast** fields.
- Fund data must exist to see the  **Switch to Funds Constraints** option.

- a. Select **Save**.
- 5) In the **Primary Objective** section, select the objective field that you want to maximize.
- 6) (Optional) In the **Secondary Objective** section, select **Maximize** or **Minimize**, and then select a secondary objective field.

Note: If you do not want to include a secondary objective in the optimization, select **None** to disable the field.

- 7) Select **Optimize**.

The optimization process runs in the background. The scenario on which the optimization is being done is read-only while the optimization process runs.

Note: You can only rename or duplicate the scenario while the optimization is in progress.

- 8) You receive a notification in the Notifications panel when the process is complete. Select **View Scenario** from the notification to view the optimized scenario.
- 9) Review optimization results.
 - ▶ The  **Efficient Frontier** chart displays results for the most recent optimization:
 - Hover over the **Current Selection** data point to view the optimal objective values based on the specified constraints.
 - The selection of projects in the table is the suggested selection based on the optimization results.
 - If you selected  **Switch to Funds Constraints** for your constraint input, you can also view the funds and fund values automatically allocated to your projects.

- ▶ In the table, the **State** field is highlighted green for projects that have been selected, red for projects that have been deselected, and not highlighted for projects whose state did not change.

10) Select **Apply Optimization** to apply the optimized project selection on the scenario.

11) Make any necessary adjustments to the project selection.

12) Select **Save**.

Tips

- ▶ If you choose to manually select projects in the table, the **Current Selection** data point is based on your selections, and an **Optimal Selection** data point is based on optimization results.
- ▶ In the **Constraints** and **Objectives** sections, select **Default** to reset the constraint and objective fields to their default values.
- ▶ If the Optimization tool generates alternative distribution recommendations, select  **Recommendations** to review them. Recommendations are not generated when using funds as constraints.
- ▶ This can also be done from the **Selection Analysis** page.
- ▶ If you modify any constraints or objectives, select **Reoptimize** to run the optimization process again.

Use Optimization Recommendations in a Budget Planning Scenario

The budget scenario Optimization tool generates an optimal selection of projects based on given total and time-phased cost constraints. If possible, the tool also creates up to two alternative cost distribution scenarios that may offer a greater value than your current selection of projects. Each recommendation suggests a different distribution of time-phased constraints that achieves one or both objective values at the same or lower total cost. In the Recommendations dialog box, compare the total cost and objective values of any generated recommendations to your current optimization results. The Constraint Distribution detail window displays the total and time-phased constraints of your current distribution and selected recommendation. You can apply the selected recommendation's values to the current scenario or create a new one.

Notes:

- Recommendations are only possible in scenarios with time-phased budgetary constraint values.
 - Recommendations are not generated when using funds as constraints.
-

To review optimization recommendations:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Budget Planning**.
- 3) Select  **Scenario Optimization** to display the **Optimization** panel.
- 4) In the **Constraints** and **Objectives** sections, configure your constraint and objective parameters, and then select **Optimize**.

The optimization process runs in the background. The scenario on which the optimization is being done is read-only while the optimization process runs.

Note: You can only rename or duplicate the scenario while the optimization is in progress.

- 5) You receive a notification in the Notifications panel when the process is complete. Select **View Scenario** from the notification to view the optimized scenario.
- 6) Review optimization results.
- 7) Select **Apply Optimization** to apply the optimized project selection on the scenario.
- 8) Select **Recommendations** to view alternative time-phased cost distribution scenarios that may offer a greater value than your current selection of projects.
- 9) In the recommendations dialog box, use the chart, grid, and Constraint Distribution detail window to compare recommendation values with the results of your current selection of projects.
- 10) In the grid, select a scenario recommendation.
- 11) Select one of the following:
 - ▶ **Apply to Current Scenario:** Applies and saves the selected recommendation's project selections and cost constraint data to the current scenario.
 - ▶ **Create New Scenario:** Creates a new scenario based on the project selections and cost constraint data of the currently selected scenario. After you receive confirmation that the scenario has been created, select **OK**, and then select **Close**.

Tips

- ▶ If there are two recommendations in the dialog box, you can select both and then select **Create New Scenario** to create a scenario for each recommendation.
- ▶ In the **Optimization** panel, select  **Expand** to view the panel in full-screen mode.
- ▶ This can also be done from the **Selection Analysis** page.

Understanding Budget Scenario Optimization Calculations

The Optimization tool simulates different project selection scenarios to find the optimal selection of projects that meets your desired objective values. The optimal selection may be limited by project and cost constraints to meet budgetary or other cost requirements. After running the tool, two lines are generated:

- ▶ **Total Cost Constraint:** This line includes the total cost constraint value only. The purpose of this curve is to show the best possible project selection using only a total cost constraint.
- ▶ **Total & Time-phased Cost Constraint:** This line includes the total cost constraint value and time-phased cost constraint values. The purpose of this curve is to show the best possible project selection using all possible cost constraints.
- ▶ Both lines also consider project budget constraints, project dependencies, and any projects with Forced In or Forced Out states.

The following examples demonstrate how the budget planning Optimization tool generates an optimized project selection result.

Note: The following examples are specific to manually input cost constraints, not portfolio funds.

Example 1

Example 1 only considers a total cost constraint value to determine a project selection that maximizes total project value while minimizing total project cost.

Project	Cost	2017	2018	2019	2020	Project Value
A	\$400	\$100	\$200	\$100		\$1000
B	\$300	\$50	\$100	\$100	\$50	\$400
C	\$200	\$0	\$50	\$100	\$50	\$400
Total	\$900	\$150	\$350	\$300	\$100	\$1800

If you consider a total cost constraint value of \$500, the possible project selection scenarios are as follows:

- ▶ Project A
- ▶ Project B
- ▶ Project C
- ▶ Project B and Project C

Each of these selections meets the \$500 total cost constraint. The selection that maximizes your Project Value is **Project A**, with a value of \$1000 and a cost of \$400.

Example 2

Example 2 considers a total cost constraint value as well as time-phased cost constraints. We will also see how the optimal project selection may vary based on changes to the input cost constraint values.

Project	Cost	2017	2018	2019	2020	Project Value
A	\$400	\$100	\$200	\$100		\$1000
B	\$300	\$50	\$100	\$100	\$50	\$400
C	\$200	\$0	\$100	\$100	\$50	\$400
Total	\$900	\$150	\$300	\$300	\$100	\$1800

Constraint Set 1	\$500	\$50	\$250	\$200	\$100	
Constraint Set 2	\$500	\$100	\$200	\$200	\$100	

Consider **Constraint Set 1**. The possible combinations of projects are as follows:

- ▶ Project B
- ▶ Project C
- ▶ Project B and Project C

Each of these combinations not only meets the \$500 total cost constraint, but also the time-phased cost constraints for each yearly period. The combination that maximizes the Project Value is **Project B** and **Project C**, with a total value of \$800.00, at a total cost of \$500.00.

Consider **Constraint Set 2**. Although similar to Constraint Set 1, the time-phased total cost values for 2017 and 2018 have both been modified. The possible combinations of projects that meet the constraint values in Constraint Set 2 are as follows:

- ▶ Project A
- ▶ Project B
- ▶ Project C
- ▶ Project B and Project C

Each of these combinations meets the \$500 total cost constraint and each time-phased total cost constraint. The combination that maximizes Project Value is **Project A**, with a total value of \$1000.00, at a total cost of \$400.00.

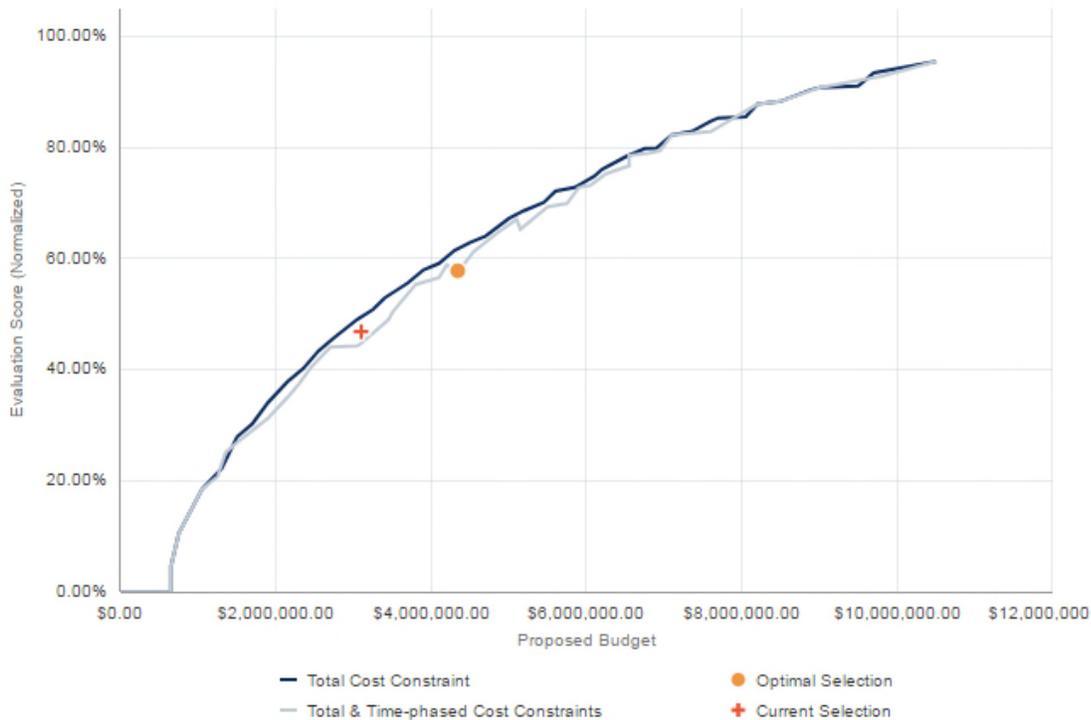
The modification of the time-phased cost constraints has resulted in a greater possible Project Value.

Understanding Budget Scenario Optimization Results

The Optimization tool plots an Efficient Frontier chart that shows possible project selection scenarios in terms of total project cost and value. A point on the Efficient Frontier represents the optimal project selection for the input cost constraints - primary and secondary objective values for the minimal total cost value. Two Efficient Frontier lines are drawn to connect the points plotted in the chart:

- ▶ **Total Cost Constraint:** This line connects all plot points that consider the lump-sum cost constraint value only.
- ▶ **Total Cost & Time-phased Constraints:** This line connects all plot points that consider the lump-sum cost constraint and time-phased cost constraint values.

The following example may help you to understand the different results generated by the Optimization tool.



Selection Points

The Optimal Selection point represents the total cost value and total objective values of the optimal set of projects selected by the tool. If you manually select any projects, a Current Selection point is plotted to represent the total cost value and total objective values of the manual selection.

The position of the Current Selection point in the chart is determined by one of the following cases:

- ▶ **Below both lines:** The current selection is not optimal.
- ▶ **On the inner line:** When manually selecting projects, only the total cost constraint value is considered. A current selection point on the inner line does not necessarily indicate an optimal selection.
- ▶ **Between the lines:** The current selection meets the total time constraint value, but does not meet one or more time-phased constraint values.
- ▶ **On the outer line:** The current selection is optimal, considering only the total cost constraint value.
- ▶ **Above both lines:** The State of a project has been changed since last optimization, or project dependencies have been modified. The Optimization points were plotted using outdated information. Optimization should be run again.

When using funds as constraints, the Optimal Selection point may lie below both lines if there are allocation rules defined for at least one fund. If no allocation rules are present, the Optimal Selection point will lie on the Efficient Frontier.

Line Kinks

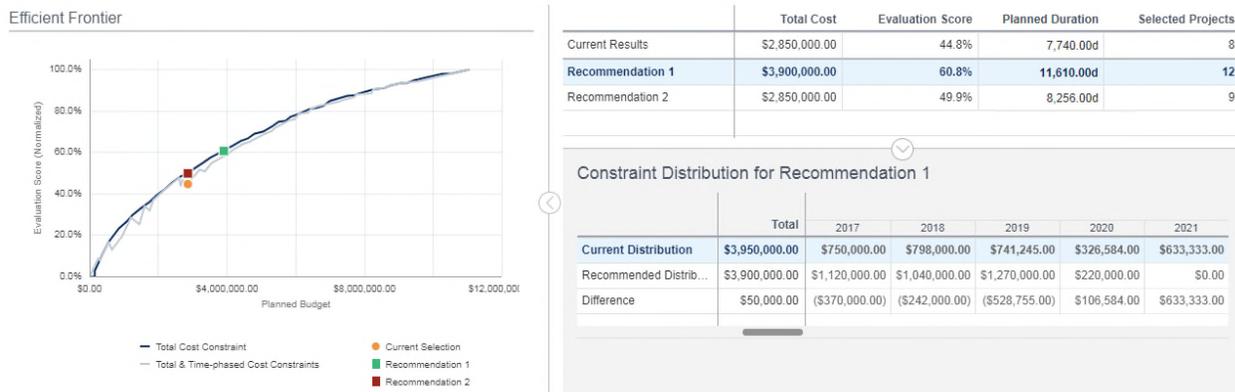
A "kink" in an Efficient Frontier line indicates that the total value decreased as the total cost increased from one set of selected projects to the next. The Optimization tool plots points on the chart that represent total objective and total cost values for different selections of projects. One selection of projects will have a specific total cost and specific total value, which is plotted as a point on the chart. It is possible that a different selection of projects with a higher cost but lower value may be plotted as the next point in the chart. This scenario is depicted in the chart above in the Total & Time-phased Cost Constraints line between the \$4,000,000.00 and \$6,000,000.00 axis lines. Kinks may be present if time-phased constraints are entered. If only a total cost constraint is entered, kinks would not be observed.

Line Shifts

Line shifts have two possible causes. A horizontal shift occurs when one or more projects have Forced In states. The minimum total cost value represents the sum total cost of all forced in projects at the time of optimization. There can be no project selection solution with a total cost less than this value. A vertical shift occurs when one or more projects have Forced Out states. When projects are forced out, the upper limit of either constraint line cannot reach 100% of the objective value.

Optimization Recommendation Cases

Note: Recommendations are not generated when using funds as constraints.



The Optimization tool may recommend up to two alternative cost distribution solutions that achieve better objective values than your current selection. In the Recommendations dialog box on the Budget Planning page, you can compare the total and time-phased cost constraint values and objective values of each recommendation with your current selection.

The top table in the graphic above contains total cost values, primary and secondary objective values, and the number of selected projects in the current results and one or both recommended selection of projects. The Total Cost column refers to the total cost value of the current and recommended solutions for the constraint field you selected during optimization. These values are created during the optimization process.

The Constraint Distribution detail window in the bottom of the graphic lists the total and time-phased constraint values that you entered during the optimization process, the total cost and time-phased constraint values suggested for the selected recommendation, and the difference in values for each column.

The following examples explain the different cases in which a recommendation is generated:

Better Objective Values Can Be Achieved at Same Total Constraint Cost

Recommendation 1 shows that a higher Evaluation Score can be achieved at the same Total Constraint Cost as the Current Results when the time-phased constraint values are redistributed. A better objective value may be possible for a primary objective, for either the primary or secondary objective when both are set to maximize, or for either the primary objective set to maximize or the secondary objective set to minimize.

Better Objective Values Can Be Achieved at Same Total Project Cost

Recommendation 2 shows that a higher Evaluation Score can be achieved at the same Total Cost as the Current Results when the time-phased constraint values are redistributed. A better objective value may be possible for a primary objective, for either the primary or secondary objective when both are set to maximize, or for either the primary objective set to maximize or the secondary objective set to minimize.

Better Objective Values Can Be Achieved at Lower Total Project Cost

An optimized project solution plotted on a "kink" may occur when the time-phased constraint values yield a lower objective value. In this case, a recommendation may be generated that achieves better objective values at a lower cost than the optimized solution. This case would be covered by Recommendation 2.

Same Objective Value Can Be Achieved at Lower Total Project Cost

A recommendation may be generated if the same primary or secondary objective value can be achieved at a lower project cost. This case would be covered by Recommendation 2.

Fund Allocation Results

When using portfolio funds as constraints for Optimization, the tool generates the optimal selection of projects that meet all fund requirements. Funds are automatically assigned to the selected projects, with total and time-phased fund values allocated to the funds in a specific order. The tool is designed to completely allocate all the money in a fund before assigning another fund. If there are restricted funds with allocation rules defined, the tool allocates all of the money in the restricted funds before looking for money from unrestricted funds, if applicable. The assignment process selects funds in the order in which the funds were created.

Link a Project's Proposed Budget with a Forecast or Planned Budget Value

You can link a project's Forecast or Planned Budget values from the Cash Flow page to the proposed budget values on the Budget Planning page. Link date and cost fields, including Start, Finish, and Total Cost, to use in your budget plan scenarios.

To link scenario date and cost fields to the values proposed by the project manager:

- 1) In the object selector, select a portfolio.

2) In the sidebar, hover over  **Cost and Funds**, and select **Budget Planning**.

3) To link one project, select  **Link**.

To link multiple projects, use Ctrl+click to select each project. On the **Actions** ▼ menu, select **Link**, and then select **Highlighted Projects**.

Note: You cannot edit the Start, Finish, Total Cost, or time-phased cost fields when the link is enabled.

4) Select **Save**.

Directly Allocate a Proposed Budget and Dates for a Project Within Budget Plan Scenarios

As a budget planner, you can choose to link to the budget values and project dates as defined by the project manager, or you can propose different values.

To propose a budget and start and end dates for a project:

1) In the object selector, select a portfolio.

2) In the sidebar, hover over  **Cost and Funds**, and select **Budget Planning**.

3) In the table, expand a project to view the values entered by the project manager. Determine whether to link to these values or propose new values.

4) To use the values entered by the project manager as a starting point, on the row with the project name, select  **Link** to bring in the project manager's values, then select  **Unlink** to edit those values.

5) On the row with the project name, enter the proposed **Total Cost** for the project within the planning horizon.

Notes:

- This amount appears in the **Undistributed** field until costs are allocated by time period.
 - If you see values in the **Past** or **Future** fields for the **Forecast** or **Planned Budget**, this is the budget for the project that extends beyond the current planning horizon.
-

6) To allocate the budget per time period, select the time period and enter an amount.

Note: The total allocated budget values for all time periods are calculated in the **Distributed** field.

7) To enter the **Start** and **Finish** dates, select the field and use the calendar selector to select a date.

Note: If the start date of a distribution is updated, a new finish date is calculated so that the total cost, duration, and cost spread values are maintained. For example, if the start date is delayed by one month, the

finish date will be delayed by one month, but the total and spread cost values will remain the same.

- 8) Select **Save**.

Assign a Portfolio Fund to a Project

After you have added your portfolio-level funds and defined their allocation rules, you can assign them to projects during the budget planning process.

Fund cannot be assigned from the **Selection Analysis** page.

To assign a portfolio fund to a project:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Budget Planning**.
- 3) On the **Budget Planning** page, select a scenario from **Scenario** ▾.
If the scenario is associated with a portfolio that has funds, the **Funds View** is visible on this page.
- 4) From **Layout** ▾, select  **Funds**.
- 5) In the table, highlight the row that represents the project to which you want to assign the fund.
The **Fund Availability** detail window shows you which funds are available.
- 6) By the project row, select  **Context** and then select **Assign Fund**.
- 7) In the **Assign Funds** dialog box, select a fund, and then select **OK**.
Only funds that are eligible for use on the highlighted project are available here.
In the **Funds View**, notice that the project row is accompanied by a row for the fund. This new fund row represents the fund's use in that project.
- 8) In the fund row, in the **Total Cost** column, enter a **Proposed Fund** value.
This value represents how much of the total fund will be available across the project's lifecycle. You can compare it against the **Variance** value at the project level to see how much more money is required to fund the given project.
- 9) For each time period column, enter a **Proposed Fund** value.
- 10) In the **Fund Availability** detail window, select one of the following tabs:
 - ▶ **Fund Availability Grid**: Displays cumulative data for all funds in the portfolio.
 - ▶ **Surplus/Deficit Chart**: Displays a graphical representation of the surplus and deficit values for each fund for each time period.
 - ▶ **Stacked Histogram**: Displays totals for each fund. Totals for each project for each time period are stacked vertically.

Select **Show only Highlighted Funds** to display funds that are highlighted in the top table.

Select  **Settings** to update data displays on the Fund Availability tabs, including stacked histogram chart settings.

The values you enter on this page are reflected in the totals shown in the **Fund Availability** detail window. You can try different combinations of fund assignments and select or deselect projects to make sure you are getting the most from your funds.

Select **Check Funds Validity** to see if there are any allocation rules or irregularities that make funds unavailable for allocation in the portfolio.

When the scenario is approved, the fund assignments and their proposed values are allocated to their respective projects. You can see the proposed fund values in the Total column in project fund sheet.

Portfolio Budget Plan Status Reference

The status that displays for the budget plan is set automatically until it is time to close the plan.

- ▶ **In Planning:** The budget plan is currently going through the planning process and contains one or more scenarios in planning. This status is set based on the status of scenarios within the plan and cannot be edited manually.
- ▶ **Revising:** The budget plan currently has one scenario with a status of approved and another with a status of **Under Review**, **Proposed**, or **Under Approval**. This status is set based on the status of scenarios within the plan and cannot be edited manually.
- ▶ **Approved:** The budget plan contains a scenario that has gone through the approval process and been approved. This status is set based on the status of scenarios within the plan and cannot be edited manually.

Selection Analysis Overview

Selection Analysis Overview Video

Selection Analysis is the process of selecting the best group of projects in a portfolio to execute based on the analysis of a variety of financial attributes. While the Budget Planning page enables planners to select the right projects to execute based on budget constraints, the Selection Analysis page enables planners to analyze project attributes besides budget, such as Return on Investment, Net Present Value, and Profitability Index. The same processes can be performed on both pages.

One or more analysis views can be configured to graphically represent project data by different sets of criteria using a variety of charts and a grid. The charts are interactive based on the project selection in the grid.

Note: Analysis views are created in the settings and opened from the Published Views page. Opening an analysis view displays it on the Selection Analysis page. Analysis views are only available from the Published Views page if they have been created and associated to the portfolio.

Use the Selection Analysis page to:

- ▶ Review the planned budget or forecasted costs entered by the project manager, and choose to link to those costs or propose an alternative budget.

Note: Only total financial values are available from the Selection Analysis page. To view or enter time-phased data, use the Budget Planning page.

- ▶ Review the project start and end dates entered by the project manager, and propose revised dates based on budget allocations.
- ▶ Select the subset of projects for inclusion in the budget plan.
- ▶ Use the Efficient Frontier optimization tool to suggest an optimal selection of projects for inclusion in the budget plan.
- ▶ Create multiple plan scenarios to model a variety of plans based on different sets of criteria.
- ▶ Send scenarios out for review to the planning group to evaluate the mix of projects.
- ▶ Send the candidate scenario to project managers to negotiate the budget and project start and end dates with the project manager for each project.
- ▶ Send the final scenario out for final approval.
- ▶ Communicate with the planning group and project managers that have access to the projects within the scenarios.

Add a Budget Plan Scenario on the Selection Analysis Page

Create budget plan scenarios to determine the best group of projects to be included in the budget plan. One or more scenarios can be created to model the plan using different sets of criteria, enabling you to make more informed decisions when selecting projects for the plan.

Scenarios added to the Selection Analysis page will also appear on the Budget Planning page.

To add a scenario on the Selection Analysis page:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Published Views**.
- 3) In the table, select the name of the analysis view to open it on the **Selection Analysis** page.
- 4) Select **+ Add Scenario**.
- 5) In the **Add Scenario** dialog box, enter a name for the scenario, and select **Save**.

Tips

- ▶ All new scenarios have a status of *In Planning*. The status cannot be changed manually.
- ▶ Select  **Manage Scenarios** to open the **Manage Scenarios** dialog box. Use the dialog box to add, rename, duplicate, hide, and delete budget and resource planning scenarios. You can also perform these actions from the page toolbar by selecting the menu next to the open scenario.
- ▶ To delete a scenario, the scenario must have a status of *In Planning*.

Set the Target Budget on the Selection Analysis Page

Set a target budget for the entire planning horizon. This value is used during the planning and selection process to guide budget planners when selecting projects for inclusion in the budget scenarios on the Budget Planning page and when using Selection Analysis views.

Target Budget values added to a scenario on the Selection Analysis page will also appear in the same scenario on the Budget Planning page.

To set the target budget on the Selection Analysis page:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Published Views**.
- 3) In the table, select the name of the analysis view to open it on the **Selection Analysis** page.
- 4) In the context bar, select the planning period **▼ menu**, and select the planning year, which is either the current year or the subsequent year.
- 5) Select the scenario.
- 6) In the **Target Budget** row, enter a value which defines the target budget for the entire planning horizon in the **Total** column.
- 7) Select **Save**.

Create Budget Scenario Data by Import on the Selection Analysis Page

You can bulk import budget scenario data into an existing scenario using Microsoft Excel. The data available for import includes project selected state, linked budgets, start and finish dates, total cost, and yearly bucket data. Download a pre-formatted template, follow the instructions in the spreadsheet, and then import the complete template into Oracle Primavera Cloud. Using data from an outside system can save you time from manual entry.

Download an Import Template for Importing Budget Scenario Data on the Selection Analysis Page

Download a pre-formatted Microsoft Excel template to use when importing budget scenario data. After you download the template, enter the name and ID of each project in the scenario, and then enter budget scenario details, including selected state, total cost, and spread cost data. When you are finished, you can import the updated template to create the data in Oracle Primavera Cloud.

Note: Download and import functionality is available on Grid & Chart, Grid (Top) & 2 Charts (Bottom), and Grid Only analysis view types.

To download an import template on the Selection Analysis page:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Published Views**.
- 3) In the table, select the name of the analysis view to open it on the **Selection Analysis** page.
- 4) Select **Actions ▼**, and then select **Download Import Template**.

Note: This option is only available if the current scenario is *In Planning*.

Tips

- ▶ The import template is downloaded as a Microsoft Excel file with the default file name ScenariosImportTemplate

- ▶ The top two rows of each worksheet are required when importing resources from a spreadsheet. You can delete unused optional columns, but do not change the data in these rows.
- ▶ Only one scenario can be imported per template.
- ▶ Review the Instructions worksheet on the first tab of the spreadsheet for helpful tips on populating the import template.

Import Budget Scenario Data from Microsoft Excel on the Selection Analysis Page

You can bulk import budget scenario data into an existing scenario from a Microsoft Excel (.xls or .xlsx) file. After downloading the import template, follow the instructions to enter data in the spreadsheet. The import will fail if there are any invalid values in the spreadsheet. You can download the spreadsheet file to view and fix the errors indicated in the error column at the end of each worksheet, and then import the file again.

You must have sufficient portfolio privileges to import budget scenario data from Microsoft Excel.

Note: Download and import functionality is available on Grid & Chart, Grid (Top) & 2 Charts (Bottom), and Grid Only analysis view types.

To import budget scenario data from Microsoft Excel on the Selection Analysis page:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Published Views**.
- 3) In the table, select the name of the analysis view to open it on the **Selection Analysis** page.
- 4) Select the scenario where you want to import the budget scenario data.
- 5) Select the **Actions** ▼ menu, and then select **Import from Excel**.

Note: This option is only available if the current scenario is *In Planning*.

- 6) In the **Import Project Budget** dialog box, select **... Browse**, select a file, and select **Import**.

Tips

- ▶ Only one scenario can be imported per template.
- ▶ During the import process, the page is read-only. When the process is complete, you will receive a system notification with a link to the **Budget Planning** page.

Configure the Selection Analysis Page

Configure a variety of view settings on the Selection Analysis page to display the tools most important to your budget planning process. Some of the following steps may not apply to your analysis view depending on its configured layout.

To configure the Selection Analysis page:

- ▶ **Configure a Selection Analysis View** (on page 133)
- ▶ **View Project Dependencies on the Selection Analysis Page** (on page 133)
- ▶ **Configure the Waterline View on the Selection Analysis Page** (on page 133)

Configure a Selection Analysis View

You can configure Selection Analysis views to determine the budget plan data displayed during selection analysis. You can only configure charts using data types assigned to the chart when it was created. You can update grids to show different columns.

To configure an analysis view, the **User Customization** option must be enabled in the analysis view settings. See **Configure an Analysis View in a Portfolio** (on page 93) for more information.

To configure the Selection Analysis view:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Published Views**.
- 3) In the table, select the name of the analysis view to open it on the **Selection Analysis** page.
- 4) Select  **Settings** for the chart or grid you would like to modify.
- 5) Configure your chart or grid:
 - ▶ If you selected a chart, use the tabs in the **Chart Options** dialog box to change the properties of the chart. Select **Apply**.
 - ▶ If you selected a grid, use the tabs available in the **Settings** dialog box to add or remove columns, filter project data, group projects by specific criteria, display additional cost curves, modify waterline options, or set formatting options. Select **Apply**.

View Project Dependencies on the Selection Analysis Page

It is important to review projects that depend on or support the projects being selected for a budget plan during project selection.

To view project dependencies on the Selection Analysis page:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Published Views**.
- 3) In the table, select the name of the analysis view to open it on the **Selection Analysis** page.
- 4) At the bottom of the grid, select **Show Unmet Dependencies**.
- 5) Select a project to view whether it supports or depends on another project.

Configure the Waterline View on the Selection Analysis Page

Display a waterline to help analyze the project or program group within the portfolio to assist you in making decisions on selecting projects for the budget plan. A waterline sorts projects and programs in the portfolio into two separate groups based on the defined constraint limit. Projects and programs above the waterline are those that collectively meet the constraint limit value; all others appear below the waterline.

To configure the waterline view on the Selection Analysis page:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Published Views**.
- 3) In the table, select the name of the analysis view to open it on the **Selection Analysis** page.
- 4) Select **Waterline View**.

- 5) In the grid toolbar, select  **Settings**.
- 6) In the **Settings** panel, select the **Waterline Options** tab.
- 7) In the **Waterline Level** section:
 - a. Select options for the following fields to configure the waterline level:
 1. **Limit**: The field used as a parameter when setting the waterline level limit.
 2. **Is**: Determines the logical relationship between the **Limit** field and your entry in the associated **Value** field.
 3. **Value**: The limit used to determine which projects and programs meet the defined parameter value and which do not meet the parameters and therefore fall below the waterline.
 - b. Select **Only include above waterline level projects automatically** to automatically select only projects that meet your waterline preference in your budget planning scenario. When this option is selected, you cannot select any projects that fall below the waterline unless you force them in. You also cannot unselect any projects that are above the waterline unless you force them out.
- 8) In the **Sort By** section, specify the first and optionally second and third fields used to rank and sort the projects.
- 9) Select **Apply**.

Tips

- ▶ If a project does not meet the waterline criteria, but must be included in the budget plan, select  **Forced In**. Conversely, if it has been determined that a project will not be included in the budget plan even though it does meet the waterline criteria, select  **Forced Out**.
- ▶ The **Show Unmet Dependencies** and **Waterline View** options cannot both be enabled at the same time. Selecting one option will disable the other.

Select Projects for a Budget Plan Scenario on the Selection Analysis Page

Select projects to include in a budget plan scenario using the customized charts and grids available in Selection Analysis views. Each view includes a grid that you can use to select or remove projects from a budget plan scenario. If charts are used to present project data, the charts will be updated based on the projects selected in the grid.

To select projects for a budget plan scenario on the Selection Analysis page:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Published Views**.
- 3) In the table, select the name of the analysis view to open it on the **Selection Analysis** page.
- 4) To include a project in a budget plan scenario, in the table, select the **Project State** field to display the  **Selected** state or  **Forced In** state. To add multiple projects at once, use Ctrl + click to select each project. Select the **Actions**  menu, select **Include**, and then select **Highlighted Projects**.

Note: The **Forced In** and **Forced Out** states are useful when it has been predetermined whether projects are included in the budget plan.

These states are also useful when using the **Waterline View**, on selection analysis views that have a table-only format or on the **Budget Planning** page, and you want to include or exclude the project in the scenario whether or not the project meets the selected criteria.

You will notice the **Proposed Budget** row for the plan now includes the total cost for the project and adds the project to the number of included projects.

5) Select **Save**.

Tips

- ▶ Select  **Refresh** to run the portfolio filter to ensure all projects are included in the scenario. Refresh the filter on each scenario if you have multiple scenarios.

Link a Project's Proposed Budget with a Forecast or Planned Budget Value on the Selection Analysis Page

You can link a project's Forecast or Planned Budget values including additional sub-cost curve values from the Cash Flow page to the proposed budget values on the Selection Analysis page. Link date and cost fields, including Start, Finish, and Total Cost, to use in your budget plan scenarios.

To link scenario date and cost fields to the values proposed by the project manager:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Published Views**.
- 3) In the table, select the name of the analysis view to open it on the **Selection Analysis** page.
- 4) To link one project, in the table, select  **Link**.

To link multiple projects, in the table, use Ctrl+click to select each project. On the **Actions** ▼ menu, select **Link**, and then select **Highlighted Projects**.

Note: You cannot edit the Start, Finish, Total Cost, or time-phased cost fields when the link is enabled.

5) Select **Save**.

Directly Allocate a Proposed Budget and Dates for Projects Within Budget Plan Scenarios on the Selection Analysis Page

As a budget planner, you can choose to link to the budget values and project dates as defined by the project manager, or you can propose different values.

From the Selection Analysis page, you can propose a total cost, but you cannot distribute the costs across the planning horizon. Use the Budget Planning page to distribute the costs.

To propose a budget and start and end dates for a project on the Selection Analysis page:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Published Views**.

- 3) In the table, select the name of the analysis view to open it on the **Selection Analysis** page.
- 4) Expand a project to view the values entered by the project manager. Determine whether to link to these values or propose new values.
- 5) To use the values entered by the project manager as a starting point, on the row with the project name, select  **Link** to bring in the project manager's values, then select  **Unlink** to edit those values.
- 6) On the row with the project name, enter the proposed **Total Cost** for the project within the planning horizon.

Note: This amount appears in the **Undistributed** field until costs are allocated by time period, which must be done on the **Budget Planning** page.

- 7) To enter the **Start** or **Finish** dates, select the field, and use the calendar selector to select a date.

Note: If you brought in the project manager's dates and costs and you change the dates, be sure to redistribute the costs per time period. Do this on the **Budget Planning** page. Review the **Undistributed** field to determine the amount of costs to be distributed. If there is an amount in parentheses, your distributed costs exceed the amount in the **Total Cost** field.

- 8) Select **Save**.

Portfolio Funds Overview

Portfolio Funds Overview Video

In some organizations, funding for projects comes from many sources, including endowments, donations, and grants. This funding needs to be carefully monitored to make sure the money from each source is spent on the right projects.

For example, say you work for a city government, which is responsible for all kinds of civic projects. If your city receives a federal grant to replace old insulation in schools, then you need to make sure the money from this grant only goes toward projects that involve replacing old insulation in schools.

That's where the portfolio-level Fund Sources page comes in. It helps you create and manage portfolio-level funds, which you can then use for projects in the budget planning process.

The Fund Sources page covers the three main steps of fund management: allocation, appropriation, and consumption.

Allocation is how money from a fund becomes available to a project. In Primavera Cloud, there are three ways this can happen: Money can be allocated to a project from a fund in a workspace, an entire fund can be added directly to a project, or a fund in a portfolio can be allocated to a project in that portfolio during the budget planning process.

In addition to being allocated to projects, money from funds can be allocated from one workspace to a child workspace or a portfolio in that workspace. When funds are allocated to a workspace or portfolio, they can be further allocated to projects in the workspace or portfolio.

When money from a fund is allocated, you can say that it's been reserved or set aside for a specific project, workspace, or portfolio.

Appropriation is how money that has been allocated to a project, workspace, or portfolio becomes committed to work related to the project, workspace, or portfolio.

Consumption shows how money from a fund has been used by a project, workspace, or portfolio.

To summarize, allocation is how much money has been given to a project. Appropriation is how much of that money you've agreed to use on the project. And consumption is how much money was actually used on the project.

Add a Fund to a Portfolio

You can add funds with a Distribution Type value of Yearly (and only Yearly) to portfolios, where they can then be allocated to projects during the budget planning process.

After the fund is created, **define allocation rules** (see "**Define a Portfolio Fund Allocation Rule**" on page 138) to make sure it is used on the right projects.

To add a fund to a portfolio:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Fund Sources**.
- 3) Select the **Funds** tab.
- 4) On the **Funds** tab, select **+ Add**.
- 5) In the new row, complete the following fields:
 - ▶ **Name:** The name of the fund.
 - ▶ **ID:** A unique ID for the fund.
 - ▶ **Total:** The total amount of money in the fund.
- 6) Complete the other fields as necessary.
Refer to **Fund Sources Fields** (on page 138) for information on each field.
- 7) Select **Save**.

Tips

- ▶ To add and remove columns on this view, select  **Settings**.
- ▶ You can allocate a time-phased fund for each period of its lifecycle on the **Time Phase** view.
- ▶ To choose which currency to view funds, go to  **Settings** and select the **Currency** tab.

Define a Portfolio Fund Allocation Rule

After you have created a portfolio-level fund, you should define its allocation rules to make sure it is used on the right projects. For example, you may want to limit the projects where the fund can be used to projects with a certain Department value.

To define the portfolio-level allocation rules for a fund:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Fund Sources**.
- 3) Select the **Funds** tab.
- 4) In the table, select a fund.
- 5) In the **Allocation Rules** detail window, select **+ Add Allocation Rules**.
- 6) In the **Add Allocation Rules** panel, select the filters that you want to apply.
Alternatively, if you want to create a new filter, find the location where you want to add the new filter, select the  **Context** menu, and then select **Add**. In the New Filter area, add all new filter criteria.
- 7) Select **Save**.

Fund Sources Fields

Dates

End Date

The date when money in the fund will no longer be available.

Start Date

The date when money in the fund will start being available.

Financial

Allocated

The portion of the fund that has been distributed to projects, programs, or other workspaces.

Appropriated

The portion of the fund that has been committed to work on a project.

Consumed

The portion of the fund that has been spent to complete work on a project.

Distributed

The amount of money that has been distributed for the fund.

Remaining

The portion of the fund that has not been consumed.

Total

The amount of money granted for the fund.

Unallocated

The portion of the fund that has not been reserved for work on projects, programs or in other workspaces.

Unappropriated

The portion of the fund that has not yet been committed to actual work.

Undistributed

The amount of money that has not been distributed for the fund.

General

Allocation Source

The project, workspace, or portfolio from which the fund was allocated to the open project, portfolio, or program.

The Allocation Source value is not necessarily the same as the original owner of the fund, since a fund can be distributed through multiple allocations.

Distribution Type

How often money in a fund can be distributed during its lifetime. This can be set to Yearly, Quarterly, Monthly, or Lump Sum.

For example, if you set the Distribution Type value to Monthly, then you can specify Total, Consumed, and Appropriated values for each month that the fund is active.

Status

Either Active or Inactive. Inactive funds cannot be allocated or appropriated. They can only be consumed for projects or programs.

Add a File in a Files Detail Window

Use the Files detail window to add relevant files that support your data. For example, you might add architectural drawings, pictures, or product specifications to activities on the Activities page.

The following objects support the Files detail window:

- ▶ Activities
- ▶ Funds
- ▶ Logs
- ▶ PBSs
- ▶ Portfolio Funds
- ▶ Projects
- ▶ Project Funds
- ▶ Risks
- ▶ Scope Assignments
- ▶ Scope Items
- ▶ Strategies

- ▶ Submittals
- ▶ Tasks
- ▶ Task Constraints
- ▶ WBSs
- ▶ Work Packages

To add a file in a Files detail window:

- 1) Navigate to a page whose object supports files.
- 2) In the table, select an object row, and then select the **Files** detail window.

Note: A screen reader will read the Files detail window as **File Attachments**.

- 3) In the **Files** detail window, select **+ Add**.
- 4) In the **Add File** dialog box, in the **Select Folder** section, select a folder in the project library.
- 5) In the **File** field, select **... Browse**, and then select one or more files. There is no limit to the number of files that can be stored for a given project.
- 6) Select **Upload**. Individual files cannot exceed 2GB.

Tips

- ▶ Use the projects inventory panel to add files at the project level. This enables you to link a file to one or more objects in the project, such as activities, WBSs, or risks.
- ▶ Files that you add in the **Files** detail window can also be accessed from the project **File List** page.
- ▶ Built-in virus scanning functionality automatically scans your files during upload and check in. If an issue is detected with a file, you are notified and the contents of the file are deleted from the database. You can upload another version of the file that is not corrupted. You can't preview a file until virus scanning is completed and you refresh the page.

Link a File to an Object

You can link existing files to objects contained within a project instead of adding them to each object. Linking ensures the same version of a file is used everywhere that it is linked. The application enables you to associate files in the Files detail window of the object. The files are still available from the File List page at the project level.

The following objects support the Files detail window:

- ▶ Activities
- ▶ Funds
- ▶ Logs
- ▶ PBSs
- ▶ Portfolio Funds
- ▶ Projects
- ▶ Project Funds
- ▶ Risks
- ▶ Scope Assignments

- ▶ Scope Items
- ▶ Strategies
- ▶ Submittals
- ▶ Tasks
- ▶ Task Constraints
- ▶ WBSs
- ▶ Work Packages

To link a file to an object:

- 1) Navigate to a page whose object supports files.
- 2) In the table, select an object row, and then select the **Files** detail window.

Note: A screen reader will read the Files detail window as **File Attachments**.

- 3) In the **Files** detail window, select  **Link**.
- 4) In the **Link File** dialog box, select a file, and select  **Add from Available**.
You can select one or more files to link.
- 5) Select **OK**.

Tips

- ▶ Use the projects inventory panel to add files at the project level. This enables you to link a file to one or more objects in the project, such as activities, WBSs, or risks.
- ▶ To remove a linked file, select the file, select the  **Context** menu, and select **Unlink**.

Download a File

Download files from the application to work with them offline. Changes that you make to downloaded files that are not checked out will not be reflected in the application. You can download a file from the File List page or a Files detail window.

Note: Files that are still pending virus scan can be downloaded or checked out. The application will ask you to confirm before you download or check out an unscanned file.

To download a single file:

- ▶ In a file row, select the  **Context** menu, and then select **Download**.

To download one or more files in a zip file:

- 1) Use **Ctrl + Click** to select one or more file rows. If you want to download a folder and its contents, select the folder row.
- 2) On one of the selected rows, select the  **Context** menu and then select **Download as .zip**.

Scenario Comparison Overview

Scenario Comparison Overview Video

The Scenario Comparison page enables portfolio managers, budget planners, and other stakeholders to view and compare summary-level information about the scenarios during the planning and selection process for a given planning year. Portfolio managers and budget planners use this page to review scenarios while determining which projects to include in the scenarios, and stakeholders use this page during the review process. All groups can collaborate on the scenario using the discussions feature.

Summary-level data may include allocation dates, total role costs, earned value, budget values, and key performance indicators (KPIs). View scenario summaries side-by-side to analyze how the data values change with the selection of projects within each scenario or how the KPIs are performing against target values.

Budget planners and stakeholders can view how a project's proposed budget is allocated in each scenario side-by-side in a bar chart. By selecting a project name, a dialog box appears with a bar chart displaying the proposed budget allocation for the entire planning horizon of the portfolio. The timescale slider can be moved to adjust the bar chart to display only a certain time period.

Configure the Scenario Comparison Page

Configure the Scenario Comparison page to view information that is important during the process of creating and reviewing scenarios.

Choose which fields to view at a scenario summary-level and a project summary-level.

To configure the Scenario Comparison page:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds** or  **Resources**, and select **Scenario Comparison**.
- 3) In the context bar, select the planning period  **menu**, and select the planning year, which is either the current year or the subsequent year.
- 4) To configure the view at the scenario summary-level (top of page):
 - a. In the **Show** list, select one of the following:
 - **All**: Displays all scenarios in the portfolio that are not hidden.
 - **Budget Scenarios**: Displays all budget scenarios in the portfolio that are not hidden.
 - **Resource Scenarios**: Displays all resource scenarios in the portfolio that are not hidden.
 - b. Select the **Status** list and select to view scenarios of a particular status. For example, you can view all scenarios that are **Under Review**.
 - c. Select the check box next to the scenario name to view the projects included in each scenario at the project summary-level. Hover over a scenario icon to view the scenario type.
 - d. Configure additional columns to display.

- 5) To configure the view at the project summary-level (bottom of page):
 - a. Select **Show** and select to filter the projects that display.
 - b. Configure additional columns to display.

Note: These configuration steps do not apply to the project dialog box that appears when you select a project name. The project dialog box displays the fields configured at the scenario summary-level at the top of the page.

Compare Scenarios

Compare scenarios to view summary-level information about the scenarios and their projects during the selection analysis process.

To compare scenarios:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds** or  **Resources**, and select **Scenario Comparison**.
- 3) In the context bar, select the planning period ▼ **menu**, and select the planning year, which is either the current year or the subsequent year.
- 4) Review the data shown for each scenario.
- 5) Select the check box next to the scenario name to view the projects included in each scenario at the project summary-level.
- 6) To review project summary-level information per scenario, select a project name.
- 7) In the project dialog box:
 - a. Review the data available in the scenario summary for each project.
 - b. View the **Proposed Budget Allocation Per Scenario** chart. To view a specific time period, slide the handles on timescale.
 - c. Select **Close**.

Tips

- ▶ To choose which currency to view cost data, go to  **Settings** and select the **Currency** tab.

Budget Plan Approval Process Overview

Budget Plan Approval Process Overview Video

After one or more portfolio budget plan scenarios have been created by the budget planner, the planner typically sends one or more unapproved plan scenarios out for review to stakeholders, sends proposed project allocations to project managers for budget negotiations, and then sends the final plan scenario out for approval. There are default workflows built into the application to accommodate these processes. If your organization created custom workflows to follow your required business practices, then the process described here might be different for you.

Before the process begins, you should **set the workflows** (see "**Set Workflows for Reviewing, Proposing, and Approving a Budget Planning Scenario**" on page 97) for each stage of the process and **assign users** (see "**Assign User Roles to a Workspace, Portfolio, or Project**" on page 97) to the various approval process roles.

Scenarios can be sent for review and approval by the budget planner from either the Budget Planning page or from the Published Views page. There are four options for reviewing or approving a scenario. Send for Review, Propose, and Send for Approval are optional steps.

- ▶ **Send for Review:** The scenario is sent to users assigned the Reviewer role at the portfolio level. These users are typically a committee of people from different departments in the organization that review proposed scenarios before approval, referred to as stakeholders. The reviewers receive notifications about one or more scenarios that include a link to the Scenario Comparison page. On the Scenario Comparison page, reviewers can analyze the data, compare scenarios, and give feedback to the budget planner per scenario using the Discussions panel for each scenario.
- ▶ **Propose:** The scenario is sent to users assigned the Owner role (typically project managers) for each project listed in the budget plan. This action is typically done when the budget planner has completed the what-if and scenario planning, has had a stakeholder review that resulted in narrowing down to one scenario to be proposed, and is ready to negotiate with the project owner the project dates and proposed budget allocation. The project owners receive notifications about the scenario that include a link to the Cash Flow page. On the Cash Flow page, the project owners can review the dates and proposed budget allocations from the budget planner and have the option to accept the budget or request changes.
- ▶ **Send for Approval:** The scenario is sent to users assigned the Approver role at the portfolio level. The approvers receive notification about the scenario that includes a link to the scenario on the Budget Planning page. On the Budget Planning page, the approver can review the data in the scenario and provide any final comments and notify the budget planner of approval of the scenario by entering comments in the Discussion panel for the scenario.
- ▶ **Approve:** After final comments have been received from the reviewers, the budget planner can mark this plan as approved. If the scenario does not require an approval process, the budget planner can select to approve the scenario without having it routed to anyone.

When a budget plan scenario is approved, the proposed budgets become the approved budget values for each project, and the approved scenario becomes the budget plan for the planning period.

Send a Portfolio Budget Plan Scenario for Review

Budget plan scenarios are sent to stakeholders for review after the budget planner has selected projects and proposed budget and dates for the projects in one or more scenarios.

When a budget planner begins a review, the reviewers are sent notification of the review and are provided a link to the Scenario Comparison page. Review comments are handled through the Discussion panel.

Note: Before sending the scenario for review, select  **Refresh** to run the portfolio filter to ensure all projects are included in the scenario.

To send a budget plan scenario for review:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, select **Budget Planning** or **Published Views**, and then select an analysis view.
- 3) Select the scenario ▼ **menu**, and select **Send for Review**.
- 4) In the **Send for Review** dialog box, view the list of reviewers, and select **Send for Review**.

Tips

- ▶ After a budget plan scenario is sent for review, the status, as shown on the scenario tab, is automatically set to *Under Review*.
- ▶ When the status of a scenario is *Under Review*, the scenario cannot be updated. To make changes to the scenario, the status must be set back to *In Planning* by selecting the scenario ▼ **menu**, and selecting **Plan**.

Review a Portfolio Budget Plan Scenario Sent for Review

Budget planners send budget plan scenarios out for review after projects have been selected and budgets have been proposed.

Reviewers receive notification when a scenario is ready for review. Scenarios are accessed by selecting the link provided in the Notifications panel, or by navigating to the Scenario Comparison page for the portfolio. Reviewers cannot update data on this page. Feedback on the scenario is provided through the Discussions panel for the scenario. The budget planner uses this feedback when adjusting the plan scenario before it is approved.

To review a budget plan scenario:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds** or  **Resources**, and select **Scenario Comparison**.
- 3) In the **Status** list, select **Under Review**.
Only the scenarios sent to you for review display.
- 4) Select the check box next to the scenario name to view the projects included in each scenario at the project summary-level.
- 5) To review which projects are included in the scenario, review the project table in the lower pane. Use the **Show** list to display included or excluded projects. Use  **Search** to find specific projects within the portfolio.
- 6) To review project summary-level information per scenario, select a project name.
- 7) In the project dialog box:
 - a. Review the data available in the table for each scenario.

- b. View the **Proposed Budget Allocation Per Scenario** chart. To view a specific time period, slide the handles on timescale.
 - c. Select **Close**.
- 8) Provide feedback or review feedback others have provided on each scenario sent for review.
- ▶ Select **Discuss** to open the Discussion panel.

Note: If no comments have been posted to the Discussion panel, the **Discuss** icon is empty.

To post a new comment:

- ▶ In the **Post a comment** field, enter a comment, and select **Post**.

To reply to a comment:

- ▶ Select **Comment**.
- ▶ In the **Post a reply** field, enter a reply, and select **Reply**.

Tips

- ▶ You cannot edit or delete a posted comment.

Monitor a Portfolio Budget Plan Scenario Review

Monitor review comments during the budget plan scenario review process using the Budget Planning page or a Selection Analysis view. Review comments are captured in the Discussion panel that belongs to each scenario.

To monitor a budget plan scenario review:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over **Cost and Funds**, select **Budget Planning** or **Published Views**, and then select an analysis view.
- 3) Select the scenario.
- 4) Select **Discuss** to open the Discussion panel.

Note: If no comments have been posted to the Discussion panel, the **Discuss** icon is empty.

To post a new comment:

- ▶ In the **Post a comment** field, enter a comment, and select **Post**.

To reply to a comment:

- ▶ Select **Comment**.
- ▶ In the **Post a reply** field, enter a reply, and select **Reply**.

Tips

- ▶ You cannot edit or delete a posted comment.

Propose a Portfolio Budget Plan Scenario

Budget plan scenario proposals are shared with the project managers, who may also be referred to as project owners, during the budget negotiation process.

When a budget planner sends a scenario proposal, the project manager for each project selected for inclusion in the budget plan scenario is sent notification and is provided with a link to the Cash Flow page.

Note: Before sending the scenario for review, select  **Refresh** to run the portfolio filter to ensure all projects are included in the scenario.

To send a budget plan scenario proposal:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, select **Budget Planning** or **Published Views**, and then select an analysis view.
- 3) Select the scenario  **menu**, and select **Propose**.
- 4) In the **Propose Scenario** dialog box, view the list of project owners that will receive notification, and select **Propose**.

Tips

- ▶ After a budget plan scenario proposal is sent, the status, as shown on the scenario tab, is automatically set to *Proposed*.
- ▶ When the status of a scenario is *Proposed*, the scenario cannot be updated. To make changes to the scenario, the status must be set back to *In Planning* by selecting the scenario  **menu** and selecting **Plan**. If the scenario is set back to *In Planning*, project managers will not be able to view the proposed values. The scenario must be shared again to continue with budget negotiations.
- ▶ Only one scenario can be shared at a time.

Review a Proposed Budget for a Project in a Shared Budget Plan Scenario

Budget planners share the proposed budgets for projects within a budget plan scenario during budget negotiations.

Typically, there is one project manager who has privileges to request and accept budget changes. Other managers only have the privileges to provide budget feedback.

Project managers receive notification when the proposed budget for a project is ready for negotiations. They review the proposed budget on the Cash Flow page and can access this page from the link provided in the Notifications panel, or by navigating to the Cash Flow page for the project.

To review the proposed budget:

- 1) In the object selector, select a project.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Cash Flow**.

- 3) On the **Cash Flow** page, review the **Portfolio Proposed Budget** row, and compare it against the **Planned Budget** or **Forecast** rows.

Note: If the budget for the project has been approved and is being revised, you can also review against the approved values in the **Portfolio Approved Budget** row. You can also review the additional cost curve breakdowns for capital and expense in the **Proposed Budget** row, **Planned Budget** row, **Forecast** row, and **Available** row on the **Cash Flow** page.

- 4) Review feedback others have provided or add your own feedback.

- ▶ Select  **Discuss** to open the Discussion panel.

Note: If no comments have been posted to the Discussion panel, the  **Discuss** icon is empty.

To post a new comment:

- ▶ In the **Post a comment** field, enter a comment, and select **Post**.

To reply to a comment:

- ▶ Select **Comment**.
- ▶ In the **Post a reply** field, enter a reply, and select **Reply**.

- 5) To indicate you have changes:

- a. Select **Request Changes**.
- b. In the **Request Changes** dialog box, enter change request details.
- c. Select **Save**.

Note: The message is posted to the Discussion panel for the project on the Cash Flow page and for the project in the shared scenario on the Budget Planning page.

- 6) To accept the budget:

- a. Select **Accept Budget**.
- b. In the **Accept Budget** dialog box, optionally enter comments.
- c. Select **Save**.

Note: The message is posted to the Discussion panel for the project on the Cash Flow page and for the project in the shared scenario on the Budget Planning page.

Tips

- ▶ You cannot edit or delete a posted comment.

Monitor Budget Negotiations for a Proposed Budget Plan Scenario

Monitor the status of the budget negotiations with the project managers for each project in the budget plan scenario using the Budget Planning page. Comments are captured in the Discussion dialog box and change requests and approvals are indicated in the Budget Review Status column as well as in the Discussion dialog box for each project.

To monitor a budget plan scenario review:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, select **Budget Planning** or **Published Views**, and then select an analysis view.
- 3) Select the shared scenario.
- 4) In the **Show** list, select **Included Projects**.
- 5) View the **Budget Review Status** column to review the status of the budget negotiations for each project. The values are Pending, Changes Requested, or Accepted.
- 6) Select  **Discuss Budget** for the project to open the Discussion panel for the project.

Tips

- ▶ When the status of a scenario is *Proposed*, the scenario cannot be updated. To make changes to the scenario, the status must be set back to *In Planning* by selecting the scenario  menu and selecting **Plan**. If the scenario is set back to *In Planning*, project managers will not be able to view the proposed values. The scenario proposal must be shared again to continue with budget negotiations.

Send a Portfolio Budget Plan Scenario for Approval

A budget plan scenario can be approved by the budget planner or by the designated reviewer, depending on your organizational practices.

When a planner sends the chosen scenario for approval, the designated approver is sent notification and is provided with a link to the Budget Planning page.

Note: Before sending the scenario for review, select  **Refresh** to run the portfolio filter to ensure all projects are included in the scenario.

To send a budget plan for approval:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, select **Budget Planning** or **Published Views**, and then select an analysis view.
- 3) Select the scenario  menu, and select **Send for Approval**.
- 4) In the **Send for Approval** dialog box, view the name of the user assigned the approver role on the budget plan who will receive notification, and select **Send for Approval**.

Tips

- ▶ After a budget plan scenario is sent for approval, the status, as shown on the scenario tab, is automatically set to *Under Approval*.
- ▶ When the status of a scenario is *Under Approval*, the scenario cannot be updated. To make changes to the scenario, the status must be set back to *In Planning* by selecting the scenario ▼ menu and selecting **Plan**.

Approve a Portfolio Budget Plan Scenario

A budget plan scenario can be sent for approval or approved by the budget planner without being sent for approval.

To approve a budget plan scenario:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, select **Budget Planning** or **Published Views**, and then select an analysis view.
- 3) Select the scenario for approval.
- 4) Select the scenario ▼ menu, and select **Approve**.

Tips

- ▶ In scenarios with a large number of projects, the approval may run as a background process. During the process, the scenario will become read-only. When the process is complete, you will receive a system notification with a link to the approved scenario.
- ▶ When the status of a scenario is *Approved*, the scenario becomes the approved budget plan and cannot be updated.
- ▶ Scenarios that were not selected as the final plan, will remain in the **Budget Planning** page and the **Published Views** page. If you do not need to refer back to these plans, you can delete the scenarios or hide them. To delete the scenarios, select the scenario ▼ menu, and select **Delete**. To hide the scenarios, select  **Manage Scenarios** and select **Hidden** for each scenario you do not want to view.
- ▶ The discussions for the approved budget plan are stored in the discussions for the plan.

Update an Approved Portfolio Budget Plan

When it is determined that an approved portfolio budget plan must be revised, a new scenario can be created by duplicating the approved plan. The new scenario can then be sent through the same review, propose, and approval processes as needed. The approved plan will remain in the *Approved* state until the new scenario has been approved.

To update an approved budget plan:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds**, select **Budget Planning** or **Published Views**, and then select an analysis view.
- 3) If you selected **Budget Planning**:

- ▶ From **Scenario** ▾, select the approved scenario.
- ▶ From the **Actions** ▼ menu, go to **Scenario Options** and select **Duplicate**.

If you selected **Published Views**:

- ▶ Select the approved scenario ▾ menu, and select **Duplicate**.
- 4) In the **Duplicate Scenario** dialog box, select the Scenario Type, enter a name for the updated plan, and select the Planning Period.

Note: When duplicating across types, resource to budget or conversely, the default displayed planning year is the current planning year.

- 5) Select **Duplicate**.
- 6) Update the scenario.
- 7) Send the scenario through the Review, Propose, or Approval processes, if required.

Tips

- ▶ When the status of the new scenario is set to *Approved*, the original approved budget plan is set to *Retired*.
- ▶ An approved budget plan can also be updated by selecting **Revise Budget Plan** from the **Scorecard** or **Spending** pages.

Portfolio Budget Plan Scenario Status Reference

The status that displays for each scenario is automatically assigned during difference phases of the selection process.

- ▶ **In Planning:** Default for all new scenarios.
- ▶ **Under Review:** Set when the scenario is sent for review.
- ▶ **Proposed:** Set when the scenario proposal is shared.
- ▶ **Under Approval:** Set when the scenario is sent for approval.
- ▶ **Approved:** Set when the scenario is approved. An approved scenario becomes the approved portfolio budget plan.
- ▶ **Retired:** Only set when a scenario was approved in the past and another scenario is approved after it.

Build a Portfolio Resource Plan

The portfolio-level Resources app focuses on portfolio resource planning. Resource constraints such as time, cost, and availability can prevent all of the projects in your portfolio from being executed. The objective of portfolio resource planning is to select the right combination of projects to execute that maximizes a portfolio's value while still meeting the resource constraints present in an organization or department.

In Primavera Cloud, enter labor demands on workspace-level roles assigned to the projects within a portfolio. At the portfolio level, review the labor demands and develop different role allocation scenarios, choosing the scenario that maximizes the portfolio's value without overallocating the roles in the selected projects.

To create the best possible scenario, you can manually allocate labor units to roles, modify role allocation dates, analyze labor costs, and include or exclude projects from the plan. You can also use the Optimization tool to automatically select projects according to input constraints. Create as many scenarios as necessary to determine the best mix of projects for a resource plan.

When multiple scenarios have been created, you can compare the financial data and other key performance indicators across the projects in the scenarios you created. This process enables you to develop the most realistic scenarios for approval and execution.

Scenarios that are ready for execution can be sent through workflows for reviews, proposals, and approvals. You can designate different groups of users to each workflow role. At the end of the process, a single scenario will be approved and ready for use.

After it is approved, the scenario serves as a guide for a resource planner to commit units to the selected projects in accordance with the plan. Portfolio resource planning can only be done on projects in the portfolio. If a portfolio includes another portfolio, that portfolio and its projects are not available on the Resource Planning page.

Before you can begin resource planning, you must first create and assign workspace-level roles to the projects in your portfolio. These roles will be used to create high-level demand requirements.

To build a resource plan:

- 1) **Add a Resource Planning Scenario** (on page 153)
- 2) **Configure the Resource Planning Page** (on page 154)
- 3) Select projects for inclusion in the plan:
 - ▶ Use a variety of **manual methods** (see "**Select Projects for a Resource Planning Scenario**" on page 155) to select your projects.
 - ▶ Use the **Optimization tool** (see "**Resource Scenario Optimization Overview**" on page 159) for automatic selection.
- 4) **Compare your scenarios** (see "**Scenario Comparison Overview**" on page 142) by reviewing allocation and other role-related data.
- 5) Send one or more scenarios through the **resource plan approval process** (see "**Resource Plan Approval Process Overview**" on page 172).

Resource Planning Overview

The Resource Planning page provides a time-phased view where portfolio managers can evaluate resource constraints and make the right project selections. This is where the high-level **resource planning** (see "**Build a Portfolio Resource Plan**" on page 151) occurs.

Use the Resource Planning page to:

- ▶ Create multiple scenarios to model a variety of resource plans based on different sets of criteria.
- ▶ View individual role demands by project, and analyze role availability issues using charts, histograms, and tables.
- ▶ Allocate labor units and revise allocation start dates to resolve role availability issues.

-
- ▶ View total and time-phased costs for demand, allocation, and committed role units to aid your project selection decisions.
 - ▶ Select a subset of projects for inclusion in the resource plan that satisfy all of your resource constraints.
 - ▶ Use the resource planning optimization tool to suggest an optimal selection of projects for inclusion in the resource plan.
 - ▶ Send resource planning scenarios out for review to stakeholders in the planning group to evaluate the mix of projects.
 - ▶ Send the proposed scenario to project managers to negotiate the role allocation demand with the project manager for each project.
 - ▶ Send the final scenario out for final approval, and approve the plan to commit allocations to roles.

Understanding Role Availability

You can enter units in time-phased intervals on the timescale as job-hours or as full-time equivalent (FTE) values. FTE represents the number of full-time employees needed to complete the work in a specified time period. Planning units using FTE values makes it easy to compare work requirements across time intervals with different durations (such as months) and manage multiple roles that may all have different calendar availabilities. Depending on your user preferences, FTE can be entered as units/duration (whole numbers and decimals) or as percentages. Use the following guidelines to fill in the FTE value:

- ▶ If only one full time employee is needed to complete the work for the time period specified, enter a value of 1.0 (or 100%) for the FTE.
- ▶ If more than one full time employee is needed to complete the work, enter a value that equals the number of employees needed. For example, if four full time employees are needed to complete the work, enter a value of 4.0 (or 400%) for the FTE.
- ▶ If the work can be done by part time employees or full time employees working less than the number of hours expected for the time period, you can enter the FTE in decimals to indicate the percentage of the time period that needs to be worked. For example, if you only need a part time employee working half of the hours expected for the time period, you can enter an FTE of 0.5 (or 50%). Or, for example, if the role needs to be done by a full time employee working full time and an additional part time employee working half of the hours, then you can enter an FTE of 1.5 (or 150%).

Add a Resource Planning Scenario

Create resource planning scenarios to determine the best group of projects to execute under resource constraints for a given planning period. One or more scenarios can be created to model the plan using different sets of criteria, enabling you to make more informed decisions.

To add a scenario:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Resources**, and select **Resource Planning**.
- 3) In the context bar, select the planning period  **menu**, and select the planning year, which is either the current year or the subsequent year.

- 4) Select **+ Add Scenario**.
- 5) In the **Add Scenario** dialog box, enter a name for the scenario, and select **Save**.

Tips

- ▶ All new scenarios have a status of *In Planning*. The status cannot be changed manually.
- ▶ Select **⚙ Manage Scenarios** to open the **Manage Scenarios** dialog box. Use the dialog box to add, rename, duplicate, hide, and delete budget and resource planning scenarios. You can also perform these actions from the page toolbar by selecting the menu next to the open scenario.
- ▶ To delete a scenario, the scenario must have a status of *In Planning*.

Configure the Resource Planning Page

Configure the resource planning page to view information that is important to you while building the portfolio resource plan.

To configure the resource planning page:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over **🔗 Resources**, and select **Resource Planning**.
- 3) Select an in-progress scenario.
- 4) In the **Show** list, display projects according to their state:
 - ▶ **All Projects**: All projects in the portfolio.
 - ▶ **Included Projects**: All projects with the Selected or Forced In state.
 - ▶ **Not included Projects**: All projects with the Unselected or Forced Out state.
- 5) Select **📊 Grid** to display time-phased work units for the roles assigned to the projects in your portfolio.

Select **📅 Gantt** to display a graphical representation of allocation and project dates across a timeline.

- 6) Select **🔄 Refresh** to run the portfolio filter to ensure all projects are included in the scenario. Refresh the filter on each scenario if you have multiple scenarios.
- 7) To configure the table:
 - ▶ Select **⚙ Settings**, select Columns, Filtering, Grouping, Timescale, Spreadsheet Rows, and Formatting options, and then select **Apply**.

Note: For the duration of a portfolio resource plan, the Hours per Time Period setting in **🌐 Global Admin** is used to convert the hourly demand for a role to its equivalent in work days. See *Configure the Time Periods Settings* for how to configure this setting.

- 8) To view a specific date, in the **Go to** field, select a date.
- 9) In the **Role Availability** detail window, select **⚙ Settings** to configure additional role availability information.

- ▶ On the **Filtering** tab, select **Show roles only for projects present in the view** to only display roles for projects that are visible in the current filter. Select **Show demand only for roles present in the view** to filter roles from the top table that do not meet the Role Availability detail window filter parameters.
- ▶ On the **Chart Settings** tab, choose **Allocation Cost**, **Demand Cost**, or **Committed Cost** to view time-phased role costs in the Stacked Histogram. Choose **Allocation**, **Demand**, or **Committed** to view time-phased role availability in the Stacked Histogram.

Tips

- ▶ Select **Highlight Deficits** to highlight allocation values in the table that exceed a role's availability for the time period. Select **FTE** to display role units in the full-time equivalent values of the timescale interval.
- ▶ Hover over bars in the **Gantt** view to view date information about each project.
- ▶ You can also change the timescale interval by right-clicking on the timescale in the table and selecting an option.

Select Projects for a Resource Planning Scenario

In the portfolio planning process, it may not be possible to execute all of the projects in your portfolio due to budgetary, resource, or other types of constraints. The Resource Planning page enables you to analyze all of the projects in your portfolio for role availability restrictions and select the best combination of projects to execute.

Before selecting projects, first ensure assigned roles are available to perform the work. Review the role work demands created by a resource planner, and resolve availability issues by allocating work units to individual roles. Adjust project and role allocation start dates to spread role requirements over a less demanding period of time. To further aid you in the selection process, you can view total and time-phased role costs for the demand, allocation, and committed units for each project. Include or exclude projects in the scenario to view the impact on role availability. Prioritize projects to ensure the most important ones are included in the plan.

You can use some or all of these methods to create the ideal resource planning scenario. Create multiple scenarios to simulate different allocations and different selections of projects. When finished, you can compare your scenarios and approve the best scenario for execution.

To select projects:

- ▶ **Allocate Role Units on the Resource Planning Page** (on page 155)
- ▶ **Modify Allocation Dates on the Resource Planning Page** (on page 157)
- ▶ **Monitor Role Costs on the Resource Planning Page** (on page 158)
- ▶ **Prioritize Projects for Execution on the Resource Planning Page** (on page 158)

Allocate Role Units on the Resource Planning Page

Before you approve a resource plan, ensure that work requirements for the projects you choose to execute will be fulfilled. While more detailed resource assignments take place during the project planning process, you can make high-level role allocations during the portfolio analysis phase. This ensures that there will be a sufficient number of resources to perform the work on your projects.

Use the Resource Planning page to review and allocate units against individual role demands created by a resource planner. The table contains all of the projects in your portfolio and their role assignments. View role allocation start and finish dates, and demand and allocation values. The Highlight Deficits feature highlights time periods where a role's allocation exceeds its availability. These are the time periods where work units must be reallocated. In the Role Availability detail window, highlighted Surplus/Deficit values measure the number of units by which a role is overallocated for a time period. To resolve allocation issues, enter units by time period for a role or by Total Allocation. Values entered in the Total Allocation field are spread along the timescale in accordance with the role's allocation dates, duration, and calendar.

While you are allocating work units to project roles, consult the Role Availability detail window for additional time-phased role information. Updates you make in the table are reflected in the spreadsheet and charts in the Role Availability detail window.

To allocate work units to roles:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Resources**, and select **Resource Planning**.
- 3) Select an in-progress scenario.
- 4) In the table, expand a project, and then select a role.
- 5) To allocate units to roles, do one of the following:
 - ▶ In the **Total Allocation** field, enter the total number of work units to allocate to the role.
 - ▶ In the **Allocation** spreadsheet row, enter work units to allocate to the role for the time period.
- 6) In the **Role Availability** detail window, select one of the following:
 - ▶  **Grid**: Displays cumulative role data for all projects in the portfolio. For each role, view **Max Capacity**, **Availability**, **Surplus/Deficit**, and **Committed** values.
 - ▶  **Surplus/Deficit Chart**: Displays a color-coded graphical representation of **Surplus/Deficit** values for each role. Toggle individual roles to view fewer bars in the chart.
 - ▶  **Stacked Histogram**: Displays total selected role data by project. In the **Group By** list, select a field by which to group the data in the histogram. Select **Legend** to view grouping details.
 - ▶ Select  **Settings** in the detail window to configure Grid columns, filter the number of roles visible in the detail window, and choose which cost or unit field to display in the Stacked Histogram.
- 7) Select **Save**.

Tips

- ▶ Select **Highlight Deficits** to highlight allocation values in the table that exceed a role's availability for the time period. Select **FTE** to display role units in the full-time equivalent values of the timescale interval. To use these options, the  **Grid** view must be selected in the table.
- ▶ Select **Show only Highlighted Roles** in the **Role Availability** detail window to only display roles that are highlighted in the top table. Highlight a project row to display all roles in that project.

- ▶ Hover over bars in the **Role Availability** detail window to view date and allocation or cost information about each project or role.
- ▶ The **Max Capacity** line on the **Stacked Histogram** chart represents the maximum availability of the selected roles.

Modify Allocation Dates on the Resource Planning Page

Role allocation values are spread across a time period according to the role's allocation start and finish dates and allocation duration. These values roll up to the project summary level. Deficits occur when role allocation values exceed availability. You may be able to create additional role availability by adjusting the dates in which the role is scheduled to work. This may help to spread a role's allocation over a time period where there is less demand.

You can modify a role's allocation start date to shift the work period earlier or later. You can also modify a project's allocation start date to change the allocation start date of all roles assigned to that project. When updating a role's allocation start date, all existing allocations move along the timescale in accordance with the date. For example, if you move a role's allocation start date one week earlier, the role's existing allocations will also move earlier. However, if you enter allocation units in a time period earlier than the allocation start date, the allocation start date will update, but existing allocations will not move.

Use the Role Availability detail window on the Resource Planning page to monitor the effects of your modifications.

To modify allocation dates:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Resources**, and select **Resource Planning**.
- 3) Select an in-progress scenario.
- 4) In the table, expand a project to view individual role data.
- 5) Select  **Gantt** to display a graphical representation of allocation and project dates across a timeline.

Note: You can change the timescale interval by right-clicking on the timescale in the table and selecting an option.

- 6) To view a specific date, in the **Go to** field, select a date.
- 7) To edit role or project allocation dates:
 - ▶ Select a role or project. In the **Allocation Start** field, select a date for the allocation start.
- 8) Select **Save**.

Tips

- ▶ Select **Highlight Deficits** to highlight allocation values in the table that exceed a role's availability for the time period. Select **FTE** to display role units in the full-time equivalent values of the timescale interval. To use these options, the  **Grid** view must be selected in the table.
- ▶ Hover over bars in the **Gantt** view to view date information about each project.

- ▶ Select **Show only Highlighted Roles** in the **Role Availability** detail window to only display roles that are highlighted in the top table. Highlight a project row to display all roles in that project.

Monitor Role Costs on the Resource Planning Page

View role costs on the Resource Planning page to gain a better understanding of the labor costs associated with the projects in your portfolio. Role rates are defined for individual roles at the workspace level and can be set to change over time. During the resource planning process, monitor total and time-phased role costs for role demand, proposed allocation, actual allocation, and committed values. Role costs are calculated using the current role rate and time-phased labor units. Compare demand costs against allocated costs to view the impact specific roles will have on your projects. Modify role units to view the effects on the corresponding role cost field. Cost values are updated after saving your changes.

To monitor role costs:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Resources**, and select **Resource Planning**.
- 3) Select a scenario.
- 4) Select  **Settings** to add role cost columns and spreadsheet rows to the table.
- 5) Select **Apply**.
- 6) Use the added columns to view total role costs by project and by role. Use the added spreadsheet rows to view time-phased role costs by project and by role.

Note: Individual role rates may change over time. To ensure the current scenario is displaying the most up-to-date role costs, select **Actions** ▼, and then select **Recalculate Role Cost**. You can also recalculate role costs for multiple scenarios at a time in the **Manage Scenarios** dialog box.

- 7) In the **Role Availability** detail window, select  **Stacked Histogram** to view role costs by project. To change the field displayed in the histogram, select  **Settings**, and then select a field on the **Chart Settings** tab.

Prioritize Projects for Execution on the Resource Planning Page

During the resource planning process, allocating work units to project roles may not be able to resolve all availability constraints. Excluding lower priority projects from the scenario may help to create additional role availability for the higher priority projects in your portfolio.

Use the Resource Planning page to include and exclude projects from your scenario. View the effects on role availability in the table and in the charts and histograms in the Role Availability detail window. In the Stacked Histogram, colored segments in each bar represent the total allocation of a specific project. Bars that exceed the Max Capacity line in the histogram have exceeded the total role capacity for that time period. Exclude one or more projects or adjust role allocations to satisfy the capacity limit.

To prioritize projects for execution:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Resources**, and select **Resource Planning**.
- 3) Select an in-progress scenario.
- 4) To include a project in a resource plan scenario, in the table, select the **State** field to display **Selected** or  **Forced In**. To add multiple projects at once, use Ctrl + click to highlight each project. Select the **Actions**  menu, select **Include**, and then select **Highlighted Projects**.

Note: If a project must be included in the resource plan, select  **Forced In**. Conversely, if it has been determined that a project will not be included in the resource plan, select  **Forced Out**.

- 5) In the **Role Availability** detail window, select  **Stacked Histogram** to view the effects of including or excluding a project. To change the field displayed in the histogram, select  **Settings**, and then select a field on the **Chart Settings** tab.
- 6) Select **Save**.

Tips

- ▶ Select **Highlight Deficits** to highlight allocation values in the table that exceed a role's availability for the time period. Select **FTE** to display role units in the full-time equivalent values of the timescale interval. To use these options, the  **Grid** view must be selected in the table.
- ▶ Select **Show only Highlighted Roles** in the **Role Availability** detail window to only display roles that are highlighted in the top table. Highlight a project row to display all roles in that project.
- ▶ The **Max Capacity** line on the **Stacked Histogram** chart represents the maximum availability of the selected roles.

Resource Scenario Optimization Overview

The Resource Scenario Optimization tool enables portfolio managers to make optimal project selections for their portfolios by analyzing role availability and role demand or role allocation. The tool simulates the selection of different combinations of projects and suggests the optimal set of projects for inclusion in a resource planning scenario to realize the maximum portfolio value.

During the optimization process, the tool maximizes a primary objective value based on the weekly availability and demand or allocation values of the roles in your portfolio. For example, you may want to maximize the Evaluation Score of your portfolio without overallocating your assigned roles. Optionally, you can maximize or minimize a secondary objective value to further refine your optimization results. For example, you might select a primary objective which maximizes the Evaluation Score of your portfolio and a secondary objective that minimizes the Planned Duration value. The tool also enables you to constrain your optimization calculations by selecting planning horizon start and finish dates. Optimization is only run on dates within the horizon.

Resource scenario optimization selects projects that maximize your portfolio value without overallocating your roles. You can also run optimization with a specified percentage of acceptable overallocation. When this value is set, the optimization tool runs additional calculations using weekly role availability values increased by the specified overallocation percentage. The tool determines if there is a project selection scenario that increases your portfolio value given an increase in role availability. The increased values are used during optimization calculations, but do not overwrite the current role availability values. The results of this process may help you decide whether to hire additional roles to realize an increased portfolio value.

The optimal project selection with 0% role overallocation is plotted as a point in a chart, enabling you to view the total demand or total allocation units and the objective values for the selection. If you run optimization with an allowable percentage of role overallocation, an additional point is also plotted in the chart. Use the chart to compare selection results and determine the additional demand or allocation units necessary to realize the increased portfolio value.

Working with the Resource Scenario Optimization Tool

Use the Optimization tool on the Resource Planning page to generate an optimal selection of projects under role availability constraints. Specify objective values, an amount of allowable overallocation, and a planning horizon period, and then run the optimization to view the optimal selection.

Figure 1: Working with the Resource Scenario Optimization Panel

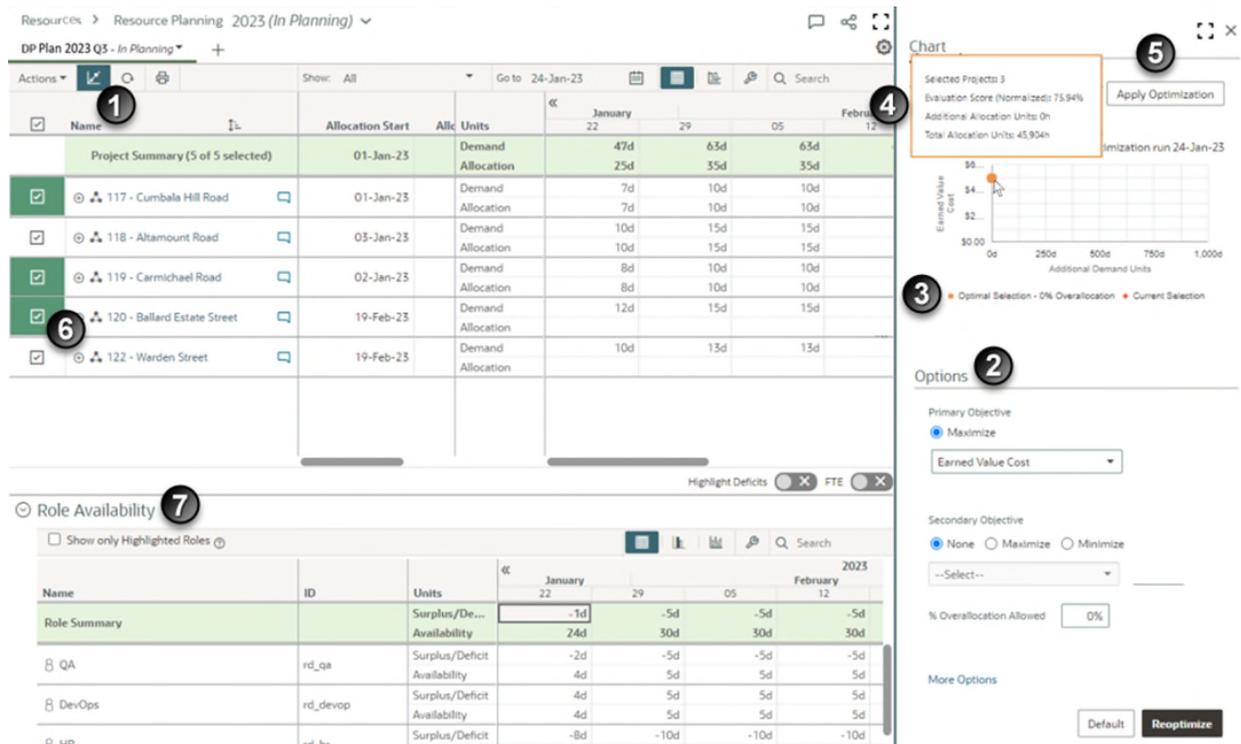


Table of Screen Highlights

Item	Description
1	Scenario Optimization: Select the Scenario Optimization button to open the scenario optimization panel on the Resource Planning page.
2	Options: Select a primary objective field whose value you want to maximize. Optionally, maximize or minimize a secondary objective field value to further refine optimization results. Specify % Overallocation Allowed to run optimization with increased role availability values. In the More Options dialog box, choose to run optimization against role demand or role allocation. Constrain calculations to a specific period of time by selecting planning horizon start and finish dates.
3	Selection Points: The Optimal Selection - 0% Overallocation point represents the optimal selection of projects that achieves your objectives without overallocating your roles. A second point is plotted if you input a value in the % Overallocation Allowed field. This point represents the optimal selection of projects if role availability values are increased by the given percentage. If you manually select any projects, a Current Selection point is plotted to represent the unit and objective values of the projects in the manual selection.
4	Selection Details: Hover over the Optimal Selection - 0% Overallocation point in the chart to view the number of selected projects in the solution, the values of the chosen objective fields, and the total number of demand or allocation units in the selection. If an additional point was plotted for allowable overallocation, hover over the point to view the additional number of demand or allocation units necessary to achieve the increased objective values.
5	Apply Optimization: Select Apply Optimization to apply the optimized project selection scenario.
6	Selected Projects: After applying optimization, the State field is highlighted green for projects that have been selected, red for projects that have been deselected, and not highlighted for projects whose state did not change.
7	Role Availability: Use the detail window to view cumulative role data for all projects in the portfolio, a surplus/deficit chart to measure over- and under-allocations, and a stacked histogram to view selected role data by project.

Use Optimization to Select Projects for a Resource Planning Scenario

Use the Optimization tool to simulate different project selection scenarios. Specify primary and secondary objective fields, an allowable percentage of role overallocation, and start and finish dates for the planning horizon. Run the analysis to generate the optimal selection of projects.

To select projects using resource scenario optimization:

- 1) In the object selector, select a portfolio.

- 2) In the sidebar, hover over **Resources**, and select **Resource Planning**.
- 3) Select the **Scenario Optimization** button to open the scenario optimization panel.
- 4) Specify Optimization parameters.
 - a. In the **Options** section, configure the following fields:
 - **Primary Objective:** Select the objective field that you want to maximize.
 - (Optional) **Secondary Objective:** Select **Maximize** or **Minimize**, and then select a secondary objective field.

Note: If you do not want to include a secondary objective in the optimization, select **--Select--** to disable the field.

- (Optional) **% Overallocation Allowed:** Select as a percent value the acceptable amount of increase in each role's weekly availability. The increased values are used during optimization calculations, but do not overwrite the current role availability values.
 - Select **More Options** to modify optimization unit preferences and horizon dates:
 - **Optimize Against:** Choose to run the optimization process against assigned role **Demand Units** or **Allocation Units**.
 - **Horizon Start:** Select a start date for the time period in which optimization calculations will be run.
 - **Horizon Finish:** Select a finish date for the time period in which optimization calculations will be run.
 - Select **Save**.
- 5) Select **Optimize**.

The optimization process runs in the background. The scenario on which the optimization is being done is read-only while the optimization process runs.

Note: You can only rename or duplicate the scenario while the optimization is in progress.

- 6) You receive a notification in the Notifications panel when the process is complete. Select **View Scenario** from the notification to view the optimized scenario.
- 7) Review optimization results.
 - ▶ The **Chart** section displays results for the most recent optimization:
 - Hover over the **Optimal Selection - 0% Overallocation** data point to view the optimal selection, objective, and demand or allocation unit values based on role availability.
 - If you specified a **% Overallocation Allowed** value, the chart also displays an optimal selection point based on that value. Hover over the point to view the additional demand or allocation units necessary to achieve the increased objective values.
 - The selection of projects in the table is the suggested selection based on the optimization results. If two points are plotted, the selection is based on the optimal selection in which additional overallocation is allowed.

- ▶ In the table, the **State** field is highlighted green for projects that have been selected, red for projects that have been deselected, and not highlighted for projects whose state did not change.
- 8) Select **Apply Optimization** to apply the optimized project selection on the scenario.
 - 9) Make any necessary adjustments to the project selection.
 - 10) Select **Save**.

Tips

- ▶ If you manually select projects in the table, a **Current Selection** data point is plotted based on your manual selections.
- ▶ In the **Options** section, select **Default** to reset input fields to their default values.

Understanding Resource Scenario Optimization Calculations

The Optimization tool simulates different project selection scenarios to determine the optimal selection of projects that meets your desired objective values. After running the tool, two points are generated:

- ▶ **Optimal Selection - 0% Overallocation:** This point represents the optimal selection of projects that maximizes your portfolio value without overallocating project roles.
- ▶ **Optimal Selection - n% Overallocation:** This point represents the optimal selection of projects that maximizes your portfolio value given an acceptable amount of role overallocation. Use the % Overallocation Allowed field in the Options section to specify an acceptable percentage increase of the weekly Availability value of each role. Use this point to determine the amount of additional role demand or allocation units that are necessary to achieve a greater portfolio value.

The following example demonstrates how the resource planning Optimization tool generates an optimized project selection result. The example optimizes against role demand units, but you can also choose to run optimization against role allocation units.

In this example, a portfolio contains three projects, each with the same assigned roles. Each assigned role has a weekly role demand of 120h, 40h for each project. Weekly role availability values specify the total amount of work each role can perform without being overallocated. Each role has a weekly role availability of 80h. The objective of the optimization is to select projects that maximize total value without overallocating project roles.

	May 1st	May 8th	May 15th	May 22nd
Project A - Value: \$100				
Architect	40h	40h	40h	40h
Carpenter	40h	40h	40h	40h
Plumber	40h	40h	40h	40h
Project B - Value: \$50				

Architect	40h	40h	40h	40h
Carpenter	40h	40h	40h	40h
Plumber	40h	40h	40h	40h
Project C - Value: \$75				
Architect	40h	40h	40h	40h
Carpenter	40h	40h	40h	40h
Plumber	40h	40h	40h	40h
Role Availability				
Architect	80h	80h	80h	80h
Carpenter	80h	80h	80h	80h
Plumber	80h	80h	80h	80h

Scenario 1: 0% Allocation Allowed

Given the total availability of the roles assigned to the projects, an optimal selection scenario with 0% overallocation is as follows:

- ▶ Project A
- ▶ Project C

This scenario maximizes overall portfolio value (\$175) without overallocating any roles. The total weekly role demand of the selected projects is 240h. The total weekly role availability of the selected roles is 240h.

Scenario 2: 50% Overallocation Allowed

If you consider a % **Overallocation Allowed** value of 50%, an optimal project selection scenario is as follows:

- ▶ Project A
- ▶ Project B
- ▶ Project C

This scenario maximizes overall portfolio value (\$225) by allowing for a 50% increase in the weekly Availability value of each role. This means that the Optimization calculation uses a weekly Availability value of 120h for each role. In this scenario, the total weekly role demand of the selected projects is 360h (three projects each with 120h of total weekly role demand). The total weekly role availability of the selected roles is 360h (120h + 120h + 120h). Increasing the role availability allows for a greater potential portfolio value.

You can use the Optimization tool to identify areas in your portfolio where hiring additional roles may help you realize greater portfolio value.

Understanding Resource Scenario Optimization Results

The Resource Scenario Optimization tool displays a chart that plots possible project selection scenarios as points. Each point represents an optimal project selection solution that maximizes a primary objective field and meets role availability constraints. The calculations performed during the process consider the availability and demand or allocation of the roles in your portfolio. This example uses demand units. Depending on your specified options, up to two points may be plotted:

- ▶ **Optimal Selection - 0% Overallocation:** This point represents a project selection scenario that maximizes the specified primary objective without overallocating any of the roles assigned to the selected projects. Hover over the point to view the number of selected projects in the solution, the maximized objective value, and the total number of demand or allocation units of the selected projects.

- ▶ **Optimal Selection - n% Overallocation:** This point represents an optimal project selection scenario given an acceptable amount of role allocation. The % Overallocation Allowed field in the Options section specifies the allowable percentage increase of the weekly Availability value of each role. Use this point to determine the amount of additional role demand or allocation units necessary to achieve a greater portfolio value.



Figure 2: Displays the difference in projects selected, and objective and unit values between an optimal selection with 0% overallocation allowed and an optimal selection with n% overallocation allowed.

Resource Planning Fields

Depending on your settings, the following fields might appear on the page as table columns, spreadsheet rows, or in detail windows. Fields that are generic across the application, such as Name, may not be included here.

Date

Actual Finish

The Actual Finish displays the date on which a project is considered complete.

This value can be entered manually or can be imported.

Actual Start

The Actual Start indicates the date work on the project began.

This value can be entered manually or can be imported.

Actuals Effective Date

The month in which an actuals value was last added to the project.

Actuals Finish

The finish date for the project actuals.

Actuals Start

The start date for the project actuals.

Allocation Finish

The end date for the role allocation.

Allocation Start

The start date for the role allocation.

Data Date

The progress point, or "as-of date", for activities in the project. Project status is up-to-date as of the data date. You can set the data date when you schedule the project, or you can set it manually.

The data date is also used for updating the dates of scope assignments and work packages when they are not linked to activities.

Forecast Finish

The planned finish date of a project's remaining Forecast cost.

Forecast Start

The planned start date of a project's remaining Forecast cost.

Project Finish

The date on which all project work is complete.

This value can be entered manually or can be imported.

Project Planned Finish

The finish date for the time phased Planned Budget of the project.

Planned Budget cost spread will adjust when this date is changed.

Project Planned Start

The start date for the time phased Planned Budget of the project.

Planned Budget cost spread will adjust when this date is changed.

The Project Planned Start also represents the earliest date that activities can occur within a project schedule.

Project Start

The date on which work on the project starts.

This value can be entered manually or can be imported.

Proposed Role Allocation Finish

The finish date of the proposed role allocations.

Proposed Role Allocation Start

The start date of the proposed role allocations.

Role Committed Finish

The finish date of the allocation commitment.

Role Committed Start

The start date of the allocation commitment.

Role Demand Finish

The finish date for the demand.

Calculated as Start plus Total Demand.

Role Demand Start

The start date for the demand.

Schedule Must Finish By Date

The latest date on which the scheduled activities must be complete for a project.

Scheduled Finish Date

The calculated latest early finish date, which is based on the schedule most recently generated for the project.

Durations

Allocation Duration

The total duration of the role allocation.

Actual Duration

The Actual Duration represents the total working time between the project Actual Start and Actual Finish for a project.

This value can be imported. The Actual Duration field is not editable.

Committed Duration

The total duration of the commitment.

Role Demand Duration

The total expected duration of the demand.

Planned Duration

The duration between Project Planned Start and Project Planned Finish.

This value can be entered manually or can be imported.

Remaining Duration

The duration between the Project Start and Project Finish.

This value can be entered manually or can be imported.

Variance - Finish Date

The duration between the project's finish date and the baseline's finish date.

When the field value is generated through a P6 EPPM connection, then it represents the duration between the finish date in the current project and the baseline finish date.

This value can only be imported.

Variance - Start Date

The duration between the project's start date and the baseline's start date.

When the field value is generated through a P6 EPPM connection, then it represents the duration between the start date in the current project and the baseline start date.

This value can only be imported.

General

FTE - Allocation

The total allocated FTE for a single role.

Calculated as Total Allocation divided by Allocation Duration.

FTE - Committed

The total committed FTE for a single role.

Calculated as Total Committed divided by Role Committed Duration.

FTE - Role Demand

The total demand FTE. Calculated as total demand units divided by total demand duration.

Percentages

Evaluation Score

The quantitative score of a project based on the qualitative ranking of projects against different evaluation categories. This value is used by portfolio managers to prioritize projects.

Percent Complete

The estimated percentage of work that has been completed on the project. This value is entered by the user.

Units

Past Committed

The total units previously committed to a role.

Allocation Units

The total units allocated to a single role.

Committed Units

The total units committed to a single role.

Role Demand

The sum of the demand units entered for a single role.

Total Variance

The difference between the **Total Allocation** and the **Total Demand**.

Undistributed Allocation

The total allocated units which are not distributed into any time intervals.

Spreadsheet Rows

Role Allocation Units

The allocation units entered for a single role.

Role Allocation FTE

The allocation FTE entered for a single role.

Role Committed Units

The committed units entered for a single role.

Role Committed FTE

The committed FTE entered for a single role.

Demand

The demand units entered for a single role.

Demand (FTE)

The demand FTE entered for a single role.

Variance (Allocation - Demand)

The difference between the Allocation units and the Demand units for a single role.

Variance (Allocation - Demand) (FTE)

The difference between the Allocation FTE and the Demand FTE for a single role.

Role Availability Detail Window

Max Capacity

The maximum availability of a single role.

Surplus/Deficit

Calculated as **Allocation** minus **Availability** for a single role.

Availability

Calculated as **Max Capacity** minus **Committed** units for a single role.

Role Committed Units

The committed units entered for a single role.

Scenario Comparison Overview

Scenario Comparison Overview Video

The Scenario Comparison page enables portfolio managers, budget planners, and other stakeholders to view and compare summary-level information about the scenarios during the planning and selection process for a given planning year. Portfolio managers and budget planners use this page to review scenarios while determining which projects to include in the scenarios, and stakeholders use this page during the review process. All groups can collaborate on the scenario using the discussions feature.

Summary-level data may include allocation dates, total role costs, earned value, budget values, and key performance indicators (KPIs). View scenario summaries side-by-side to analyze how the data values change with the selection of projects within each scenario or how the KPIs are performing against target values.

Budget planners and stakeholders can view how a project's proposed budget is allocated in each scenario side-by-side in a bar chart. By selecting a project name, a dialog box appears with a bar chart displaying the proposed budget allocation for the entire planning horizon of the portfolio. The timescale slider can be moved to adjust the bar chart to display only a certain time period.

Configure the Scenario Comparison Page

Configure the Scenario Comparison page to view information that is important during the process of creating and reviewing scenarios.

Choose which fields to view at a scenario summary-level and a project summary-level.

To configure the Scenario Comparison page:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds** or  **Resources**, and select **Scenario Comparison**.
- 3) In the context bar, select the planning period  **menu**, and select the planning year, which is either the current year or the subsequent year.
- 4) To configure the view at the scenario summary-level (top of page):
 - a. In the **Show** list, select one of the following:
 - **All**: Displays all scenarios in the portfolio that are not hidden.
 - **Budget Scenarios**: Displays all budget scenarios in the portfolio that are not hidden.
 - **Resource Scenarios**: Displays all resource scenarios in the portfolio that are not hidden.
 - b. Select the **Status** list and select to view scenarios of a particular status. For example, you can view all scenarios that are **Under Review**.
 - c. Select the check box next to the scenario name to view the projects included in each scenario at the project summary-level. Hover over a scenario icon to view the scenario type.
 - d. Configure additional columns to display.
- 5) To configure the view at the project summary-level (bottom of page):
 - a. Select **Show** and select to filter the projects that display.

- b. Configure additional columns to display.

Note: These configuration steps do not apply to the project dialog box that appears when you select a project name. The project dialog box displays the fields configured at the scenario summary-level at the top of the page.

Compare Scenarios

Compare scenarios to view summary-level information about the scenarios and their projects during the selection analysis process.

To compare scenarios:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds** or  **Resources**, and select **Scenario Comparison**.
- 3) In the context bar, select the planning period ▼ **menu**, and select the planning year, which is either the current year or the subsequent year.
- 4) Review the data shown for each scenario.
- 5) Select the check box next to the scenario name to view the projects included in each scenario at the project summary-level.
- 6) To review project summary-level information per scenario, select a project name.
- 7) In the project dialog box:
 - a. Review the data available in the scenario summary for each project.
 - b. View the **Proposed Budget Allocation Per Scenario** chart. To view a specific time period, slide the handles on timescale.
 - c. Select **Close**.

Tips

- ▶ To choose which currency to view cost data, go to  **Settings** and select the **Currency** tab.

Resource Plan Approval Process Overview

After one or more portfolio resource plan scenarios have been created by the portfolio manager, the manager typically sends one or more unapproved plan scenarios out for review to stakeholders, sends proposed role allocations to project managers for negotiations, and then sends the final plan scenario out for approval.

Before the process begins, you should **assign users** (see "**Assign User Roles to a Workspace, Portfolio, or Project**" on page 97) to the various approval process roles.

Scenarios can be sent for review and approval by the portfolio manager from the Resource Planning page. There are four options for reviewing or approving a scenario. Send for Review, Propose, and Send for Approval are optional steps.

- ▶ **Send for Review:** The scenario is sent to users assigned the Reviewer role at the portfolio level. These users are typically a committee of people from different departments in the organization that review proposed scenarios before approval, referred to as stakeholders. The reviewers receive notifications about one or more scenarios that include a link to the Scenario Comparison page. On the Scenario Comparison page, reviewers can analyze the data, compare scenarios, and give feedback to the portfolio manager per scenario using the Discussions panel for each scenario.
- ▶ **Propose:** The scenario is sent to users assigned the Owner role (typically project managers) for each project listed in the resource plan. This action is typically done when the portfolio manager has completed the what-if and scenario planning, has had a stakeholder review that resulted in narrowing down to one scenario to be proposed, and is ready to negotiate with the project owner the project dates and proposed role allocation. The project owners receive notifications about the scenario that include a link to the Resource Demand page. On the Resource Demand page, the project owners can review the dates and proposed role allocations from the portfolio manager and have the option to accept the allocations or request changes.
- ▶ **Send for Approval:** The scenario is sent to users assigned the Approver role at the portfolio level. The approvers receive notification about the scenario that includes a link to the scenario on the Resource Planning page. On the Resource Planning page, the approver can review the data in the scenario and provide any final comments and notify the portfolio manager of approval of the scenario by entering comments in the Discussion panel for the scenario.
- ▶ **Approve:** After final comments have been received from the reviewers, the portfolio manager can mark this plan as approved. If the scenario does not require an approval process, the portfolio manager can select to approve the scenario without having it routed to anyone.

When a resource plan scenario is approved, the proposed role allocations become the approved role allocation values for each project, and the approved scenario becomes the resource plan for the planning period.

Send a Resource Plan Scenario for Review

Resource plan scenarios are sent to stakeholders for review after the portfolio manager has selected projects and allocated role units for the projects in the scenario. The portfolio manager can send multiple scenarios for review.

When a portfolio manager begins a review, the reviewers are sent notification of the review and are provided a link to the Scenario Comparison page. Review comments are handled through the Discussion panel.

Note: Before sending the scenario for review, select  **Refresh** to run the portfolio filter to ensure all projects are included in the scenario.

You must have the appropriate security privileges to send a resource plan scenario for review.

To send a resource plan scenario for review:

- 1) In the object selector, select a portfolio.

- 2) In the sidebar, hover over  **Resources**, and select **Resource Planning**.
- 3) On the **Resource Planning** page, select the scenario  menu, and select **Send for Review**.
- 4) In the **Send for Review** dialog box, view the list of reviewers, and select **Send for Review**.

Tips

- ▶ After a resource plan scenario is sent for review, the status, as shown on the scenario tab, is automatically set to *Under Review*.
- ▶ When the status of a scenario is *Under Review*, the scenario cannot be updated. To make changes to the scenario, the status must be set back to *In Planning* by selecting the scenario  menu, and selecting **Plan**.

Review a Resource Plan Scenario Sent for Review

Portfolio managers send resource plan scenarios out for review after projects have been selected and role allocations have been proposed.

Reviewers receive notification when a scenario is ready for review. Scenarios are accessed by selecting the link provided in the Notifications panel or by navigating to the Scenario Comparison page for the portfolio. Reviewers cannot update data on this page. Feedback on the scenario is provided through the Discussions panel for the scenario. The portfolio manager uses this feedback when adjusting the plan scenario before it is approved.

To review a resource plan scenario:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Cost and Funds** or  **Resources**, and select **Scenario Comparison**.
- 3) In the **Status** list, select **Under Review**.
Only the scenarios sent to you for review display.
- 4) Add summary-level scenario columns to the table.
- 5) Select the check box next to the scenario name to view the projects included in each scenario at the project summary-level.
- 6) To review which projects are included in the scenario, review the project table in the lower pane. Use the **Show** list to display included or excluded projects. Use  **Search** to find specific projects within the portfolio.
- 7) Select  **Settings** in the lower pane to add summary-level project columns.
- 8) Provide feedback or review feedback others have provided on each scenario sent for review.
 - ▶ Select  **Discuss** to open the Discussion panel.

Note: If no comments have been posted to the Discussion panel, the  **Discuss** icon is empty.

To post a new comment:

- ▶ In the **Post a comment** field, enter a comment, and select **Post**.

To reply to a comment:

- ▶ Select **Comment**.
- ▶ In the **Post a reply** field, enter a reply, and select **Reply**.

Tips

- ▶ You cannot edit or delete a posted comment.

Monitor a Resource Plan Scenario Review

Monitor review comments during the resource plan scenario review process using the Resource Planning page. Review comments are captured in the Discussion panel that belongs to each scenario.

To monitor a resource plan scenario review:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Resources**, and select **Resource Planning**.
- 3) On the **Resource Planning** page, select the scenario.
- 4) Select  **Discuss** to open the Discussion panel.

Note: If no comments have been posted to the Discussion panel, the  **Discuss** icon is empty.

To post a new comment:

- ▶ In the **Post a comment** field, enter a comment, and select **Post**.

To reply to a comment:

- ▶ Select **Comment**.
- ▶ In the **Post a reply** field, enter a reply, and select **Reply**.

Tips

- ▶ You cannot edit or delete a posted comment.

Propose a Resource Plan Scenario

Resource plan scenario proposals are shared with the project managers, who may also be referred to as project owners, during the role allocation negotiation process. The proposal enables portfolio managers to gain input from the project owners before a final scenario approval. The project owners can accept the proposed allocations or request changes.

When a portfolio manager sends a scenario proposal, the project manager for each project included in the resource plan scenario is sent a notification and is provided with a link to the Resource Demand page.

Note: Before sending the scenario for review, select  **Refresh** to run the portfolio filter to ensure all projects are included in the scenario.

You must have the appropriate security privileges to send a resource plan scenario proposal.

To send a resource plan scenario proposal:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Resources**, and select **Resource Planning**.
- 3) On the **Resource Planning** page, select the scenario  **menu**, and select **Propose**.
- 4) In the **Propose Scenario** dialog box, view the list of project owners that will receive notification, and select **Propose**.

Tips

- ▶ After a resource plan scenario proposal is sent, the status, as shown on the scenario tab, is set to *Pending Proposal*. After the Propose Scenario process completes and the page is reloaded, the scenario is set to *Proposed*.
- ▶ When the status of a scenario is *Proposed*, the scenario cannot be updated. To make changes to the scenario, the status must be set back to *In Planning* by selecting the scenario  **menu** and selecting **Plan**. If the scenario is set back to *In Planning*, project managers will not be able to view the proposed values. The scenario must be shared again to continue with negotiations.
- ▶ Only one scenario can be shared at a time.

Review a Proposed Resource Plan Scenario

Portfolio managers can share proposed role allocations for projects within a resource plan scenario during the planning process.

Typically there is one project manager that has privileges to request allocation changes and accept allocation changes, and other project managers have the privileges to only provide feedback.

Project managers receive a notification when the proposed role allocations for a project are ready for negotiations. Project managers review the proposed allocations on the Resource Demand page and can access this page from the link provided in the Notification panel, or by navigating to the Resource Demand page for the project.

You must have the appropriate security privileges to accept allocations or request changes.

To review the proposed role allocation:

- 1) In the object selector, select a project.
- 2) In the sidebar, hover over  **Resources**, and select **Resource Demand**.
- 3) On the **Resource Demand** page, review the **Proposed Allocation** row, and compare it against the **Demand** row.

Note: If the resource plan for the project has been approved and is being revised, you can also review against the approved allocations in the **Allocation** row.

- 4) Review feedback others have provided or add your own feedback.
 - ▶ Select  **Discuss** to open the Discussion panel.

Note: If no comments have been posted to the Discussion panel, the  **Discuss** icon is empty.

To post a new comment:

- ▶ In the **Post a comment** field, enter a comment, and select **Post**.

To reply to a comment:

- ▶ Select **Comment**.
- ▶ In the **Post a reply** field, enter a reply, and select **Reply**.

5) To indicate you have changes:

- a. Select **Request Changes**.
- b. In the **Request Changes** dialog box, enter change request details.
- c. Select **Save**.

Note: The message is posted to the Discussion panel for the project on the Resource Demand page and for the project in the shared scenario on the Resource Planning page.

6) To accept the allocations:

- a. Select **Accept Proposed Allocations**.
- b. In the **Accept Proposed Allocations** dialog box, optionally enter comments.
- c. Select **Save**.

Note: The message is posted to the Discussion panel for the project on the Resource Demand page and for the project in the shared scenario on the Resource Planning page.

Tips

- ▶ You cannot edit or delete a posted comment.
- ▶ Enable **Demand Cost**, **Commitment Cost**, and **Proposed Allocation Cost** spreadsheet rows to review role costs for the corresponding role units.

Monitor Resource Plan Negotiations for a Proposed Resource Plan Scenario

Monitor the status of the resource plan negotiations with the project managers for each project in the proposed resource plan scenario using the Resource Planning page. Comments are captured in the Discussion dialog box and change requests and approvals are indicated in the Resource Review Status column as well as in the Discussion dialog box for each project.

To monitor resource plan scenario proposals:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Resources**, and select **Resource Planning**.
- 3) On the **Resource Planning** page, select the proposed scenario.
- 4) In the **Show** list, select **Included Projects**.

- 5) View the **Resource Review Status** column to review the status of the role allocation negotiations for each project. The values are Pending, Changes Requested, or Accepted.
- 6) Select  **Discuss** for the project to open the Discussion panel for the project.

Tips

- ▶ When the status of a scenario is *Proposed*, the scenario cannot be updated. To make changes to the scenario, the status must be set back to *In Planning* by selecting the scenario **▼ menu** and selecting **Plan**. If the scenario is set back to *In Planning*, project managers will not be able to view the proposed values. The scenario proposal must be shared again to continue with resource plan negotiations.

Send a Resource Plan Scenario for Approval

After a resource plan scenario is reviewed and its proposal of role allocation values is accepted by the project managers of the projects in the scenario, it can then be sent for approval.

When a portfolio manager sends the chosen scenario for approval, the designated approvers are sent a notification and are provided with a link to the Resource Planning page.

Note: Before sending the scenario for review, select  **Refresh** to run the portfolio filter to ensure all projects are included in the scenario.

You must have the appropriate security privileges to send a resource plan scenario for approval.

To send a resource plan for approval:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Resources**, and select **Resource Planning**.
- 3) On the **Resource Planning** page, select the scenario **▼ menu**, and select **Send for Approval**.
- 4) In the **Send for Approval** dialog box, view the names of the users assigned the approver role on the portfolio who will receive notification, and select **Send for Approval**.

Tips

- ▶ After a resource plan scenario is sent for approval, the status, as shown on the scenario tab, is automatically set to *Under Approval*.
- ▶ When the status of a scenario is *Under Approval*, the scenario cannot be updated. To make changes to the scenario, the status must be set back to *In Planning* by selecting the scenario **▼ menu** and selecting **Plan**.
- ▶ Only one scenario can be shared at a time.

Approve a Resource Plan Scenario

When it is determined that the best possible scenario has been created and the correct group of projects has been selected for execution, then the scenario can be approved. When a resource scenario is approved, the proposed allocation units for the roles in each selected project become the committed unit values for the planning period. Committed units are visible on the Resource Demand page.

You must have the appropriate security privileges to approve a resource plan scenario.

To approve a resource plan scenario:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Resources**, and select **Resource Planning**.
- 3) Select the scenario for approval.
- 4) Select the scenario **▼ menu**, and select **Approve**.

Tips

- ▶ When the status of a scenario is *Approved*, the scenario becomes the approved resource plan and cannot be updated.
- ▶ After a scenario is approved, any existing committed units are overwritten with the approved units.
- ▶ Scenarios that were not selected as the final plan will remain on the **Resource Planning** page. If you do not need to refer back to these plans, you can delete the scenarios or hide them. To delete the scenarios, select the scenario **▼ menu**, and select **Delete**. To hide the scenarios, select **Hide** for each scenario you do not want to view.
- ▶ The discussions for the approved resource plan are stored in the discussions for the plan.

Update an Approved Resource Plan

When it is determined that an approved portfolio resource plan must be revised, an identical scenario can be created by duplicating the approved plan. The new scenario can then be updated as needed. The approved plan will remain in the *Approved* state until the new scenario has been approved.

To update an approved resource plan:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Resources**, and select **Resource Planning**.
- 3) On the **Resource Planning** page, select the approved scenario **▼ menu**, and select **Duplicate**.
- 4) In the **Duplicate Scenario** dialog box, select the Scenario Type, enter a name for the updated plan, and select the Planning Period.

Note: When duplicating across types, resource to budget or conversely, the default displayed planning year is the current planning year.

- 5) Select **Duplicate**.

6) Update the scenario.

Tips

- ▶ You can also duplicate a resource planning scenario from the  **Manage Scenarios** dialog box.
- ▶ When the status of the new scenario is set to *Approved*, the original approved resource plan is set to *Retired*.
- ▶ An approved resource plan can also be updated by selecting **Revise Resource Plan** from the **Scorecard** page.

Resource Plan Scenario Status Reference

The status that displays for each scenario is automatically assigned during difference phases of the selection process.

- ▶ **In Planning:** Default for all new scenarios.
- ▶ **Under Review:** Set when the scenario is sent for review.
- ▶ **Pending Proposal:** Set when the Propose Scenario process is run.
- ▶ **Proposed:** Set when the Propose Scenario process completes and the proposal is shared.
- ▶ **Under Approval:** Set when the scenario is sent for approval.
- ▶ **Pending Approval:** Set when the Approve Scenario process is run.
- ▶ **Approved:** Set when the Approve Scenario process completes and the scenario is approved. An approved scenario becomes the approved portfolio resource plan.
- ▶ **Retired:** Only set when a scenario was approved in the past and another scenario is approved after it.

Monitor

Monitor a Project or Program

When a project or program is in execution, the project or program manager can update data, take snapshots of data, and review how the project or program is progressing by viewing cost curves and variances.

To monitor a project or program:

- ▶ **Update and Review Project or Program Data** (on page 180)
- ▶ **Create a Snapshot of Cash Flow Data** (on page 181)
- ▶ **View a Dashboard** (on page 202) (projects only)

Update and Review Project or Program Data

Costs, dates, and other financial data can be updated manually or brought in if connected with P6 EPPM using Primavera Gateway or integrated with Primavera Unifier. Typically, the Actuals and Forecast fields are updated, but this all depends on the requirements of the organization.

If the source of the Total Cost for the Planned Budget or Forecast values are the Project Current Budget, Program Current Budget, or a configured project field and have been updated, an indicator appears on the page in the Total Cost field.

If costs are updated through a connection with P6 EPPM or Primavera Unifier, discuss the frequency of the updates with your administrator.

To update or review project or program data:

- 1) In the object selector, select a project or program.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Cash Flow**.
- 3) If the cost sheet is the source for Planned Budget or Forecast Actuals values and the  **Score is out of sync** indicator displays in the Total Cost field, perform the following steps:
 - a. Select  **Refresh** to pull in the updated Total Cost values.
 - b. Update distributed values. Review the **Undistributed** field to determine the amount that has increased or decreased and reallocate the amounts in the appropriate time periods.
- 4) To display curves or variances, select  **Settings**.
 - a. In the **Settings** dialog box, select the curves or variances to review.
 - b. Select **Save**.
- 5) To update a curve with values from another curve, select **Copy**  and one of the following options:
 - ▶ **Planned Budget to Forecast:** This is typically done after budget negotiations have completed or the when a project or program has been re-estimated and the project or program manager wants to use the Planned Budget as a basis.
 - ▶ **At Completion to Forecast:** This option copies the At Completion values from the schedule in P6 EPPM to the Forecast curve in the application, enabling project or program managers to review up-to-date information. This option is only available if the application is connected with P6 EPPM.
 - ▶ **Actual Cost from P6 to Actuals:** This option copies the Actual Cost values from the schedule in P6 EPPM to the Actuals curve in the application, enabling project or program managers to adjust the values based on other incoming actuals that are not related to the schedule costs. This option is only available if the application is connected with P6 EPPM.
- 6) To update or view additional project or program data, select the **Financial Fields** detail window.
- 7) Select **Save**.

Create a Snapshot of Cash Flow Data

Capture cash flow data at specific points in time to review how projects and programs are progressing over time.

To create a snapshot:

- 1) In the object selector, select a project or program.
- 2) In the sidebar, hover over  **Cost and Funds**, and select **Cash Flow**.

- 3) On the **Cash Flow** page, select **Save Snapshot**.
- 4) On the **Save Snapshot** dialog box, enter a name for the snapshot, and select **Save**.

Working with Cost Curves

Cost curves present budget, forecast, and actuals data in a time-phased format, enabling project managers, program managers, and budget planners to view and plan costs per time period. The various curves are visible and editable from different pages within the application. The following is a summary of where these curves are used.

Budget Curves

Target Budget

The target budget for the entire planning horizon for the budget plan. This value can be adjusted per budget plan scenario.

Editable: Budget Planning, Published Views

Viewable: Budget Planning, Published Views

Planned Budget

The planned or estimated lifetime cost of a project. Can be configured to show capital and expense sub-cost curves which are displayed as additional rows.

Editable: Cash Flow. This value can be entered manually, replaced with the Project Current Budget or a project cost field from the Cost Sheet, or brought in through a connection with P6 EPPM.

Viewable: Cash Flow, Budget Planning, Published Views, Spending, Scorecard

Portfolio Proposed Budget

The proposed budget allocation for a project or a budget plan scenario spanning the portfolio's planning horizon, entered by the budget planner. The proposed budget allocation for a project is the budget value that the project or program manager and budget planner negotiate on. The Portfolio Proposed Budget is a standard curve on the Cash Flow page at the budget plan level, but not at the project level.

Editable: Budget Planning, Published Views

Viewable: Cash Flow

Portfolio Approved Budget

The multi-year approved budget assigned to the project or budget plan scenario by the budget planner for the current planning year. The Portfolio Proposed Budget becomes the Portfolio Approved Budget after a budget plan scenario is approved.

Editable: This value can only be populated through the approval of a new proposed budget.

Viewable: Cash Flow, Budget Planning, Published Views, Spending, Scorecard

Forecast Curves

Forecast

The remaining or forecast cost of the project. Forecast typically equals the Planned Budget before a project begins.

After a project begins, the Forecast is updated periodically throughout the life of the project, as the remaining cost estimates change and money is spent.

This is a time-phased Forecast for the life of the project, which could span multiple years. Can be configured to show capital and expense sub-cost curves which are displayed as additional rows.

Editable: Cash Flow. This value can be entered manually, replaced with a project cost field from the Cost Sheet, or brought in through a connection with P6 EPPM.

Viewable: Cash Flow, Budget Planning, Published Views, Spending, Scorecard

At Completion

The At Completion Total Cost from a cost-loaded P6 EPPM schedule.

This cost curve will only appear if the application is connected with P6 EPPM. This value can be copied into the Forecast curve by the project manager on the Cash Flow page.

Editable: Cannot be edited.

Viewable: Cash Flow

Actuals Curves

Actuals

The actual costs incurred for the project (such as invoices, payments, and accruals). Can be configured to show capital and expense sub-cost curves which are displayed as additional rows.

Editable: Cash Flow, Cost Sheet. This value can be entered manually on the Cash Flow page, replaced with Project Current Actuals value or project cost field from the Cost Sheet, or brought in through a connection with P6 EPPM. When connected with P6 EPPM, the Actuals from P6 EPPM are always brought into the Actual Cost from P6 curve, and then can either be copied in, or set as the source of the Actuals curve.

Viewable: Cash Flow, Cost Sheet, Budget Planning, Published Views, Spending, Scorecard

Actual Cost from P6

The actual total cost from a cost-loaded P6 EPPM schedule.

This cost curve will only appear if the application is connected with P6 EPPM. This value can be copied into the Actuals curve by the project manager, or set as the source of the Actuals curve on the Cash Flow page.

Editable: Cannot be edited.

Viewable: Cash Flow

Benefits Curves

Benefits

The anticipated income or positive cash flow from which all charges, costs, and expenses are subtracted to arrive at the net income for the project or program. Used to calculate Net Present Value (NPV), Return on Investment (ROI), and Internal Rate of Return (IRR).

Editable: Cash Flow. This value can be entered manually on the Cash Flow page or replaced with a project cost field from the Cost Sheet.

Viewable: Cash Flow, Budget Planning, Published Views, Scorecard

Monitor a Portfolio

Monitor portfolios using scorecards and dashboards. Scorecards are available at the workspace-level and the portfolio-level. Dashboards are available at the portfolio-level.

- ▶ **Monitor a Summary Portfolio Scorecard** (on page 193)
- ▶ **Monitor a Portfolio Scorecard** (on page 194)
- ▶ **View a Dashboard** (on page 202)

For Portfolios that have approved budget plans, see **Monitor an Approved Portfolio Budget Plan** (on page 195).

Measures Overview

Measures are user-defined metrics for quantitatively monitoring the health and performance of your data. You can create separate measures for **portfolios or strategies** (see "**Add a Measure for a Portfolio or Strategy**" on page 61), **programs** (see "**Add a Program Measure**" on page 78), and **projects** (see "**Add a Project Measure**" on page 83). For example, you can create measures to capture the number of on-time projects in your portfolio or program, the return on investment of individual strategies, or the percentage of critical activities in a project. Measures can be added as part of the view on a variety of pages throughout the application.

Depending on the context, different object types are available to be used as the measure's aggregation source, whose data is captured, aggregated, and displayed as the measure's value. The value can be a cost, number, or percentage. Measures have two dimensions: actual and target. The actual value is required, and indicates the current value of the data the measure is defined to track. The target value is optional, and can be used when comparing the measure against a defined threshold that you want to meet. Establish thresholds and indicators to visually represent the status of a measure. Actual and target values can be calculated using a formula or they can be set for manual entry. When defining formulas for the actual or target value, choose whether the expression is based on attributes of the measure's aggregation source object or based on existing measures. Attributes and existing measures cannot be used in the same expression for a measure.

Measures are created at the workspace level and are available to the owning workspace's hierarchy depending on their sharing method. To use a measure for a particular portfolio or strategy within a workspace, the measure must first be associated with that portfolio or strategy. Program and project measures do not need to be associated before they can be used in workspaces where they are available. Use the following table to determine where different measure types are configured, the pages where they are available to be used, and the objects that can be used as an aggregation source.

Configuring Measures

Measure Type	Configuration Location	Available To	Aggregation Source
Portfolio	Workspace Measures Dictionary	<ul style="list-style-type: none"> ▶ Portfolios Inventory ▶ Portfolio: Scorecard ▶ Workspace: Summary Scorecard 	Project
Strategy	Workspace Measures Dictionary	<ul style="list-style-type: none"> ▶ Workspace: Strategy List, Strategy Scorecard 	Project
Program	Program Defaults & Options	<ul style="list-style-type: none"> ▶ Programs Inventory 	Project, Program
Project	Project Defaults & Options	<ul style="list-style-type: none"> ▶ Projects Inventory ▶ Portfolio: Budget Planning, Selection Analysis, Scenario Comparison, Scorecard 	Activity, Risk, Program, Project

Measure tracking is also supported by Primavera Cloud's reporting and dashboard functionality.

Add a Measure for a Portfolio or Strategy

Use the workspace Measures dictionary to add measures for portfolios and strategies. Measures use expressions to quantitatively monitor data important to you. A measure's aggregation source indicates the object type whose data is being captured. Portfolio and strategy measures support projects as an aggregation source and capture data from the projects within a portfolio or associated with a particular strategy node.

The target and actual values used for measures can be configured for manual entry or using a formula. Manual values are entered on pages where the measures appear. Formulas are defined by creating expressions using project attributes or using existing dictionary measures. Project attributes include project-level fields and project measures that exist in the workspace. Measures that use existing measures are called measure-based measures. Measure-based measure expressions can use one or more measures available in the Measures dictionary, or they can use measures referencing specific portfolios or strategies. When choosing a measure, you can select its target or actual expression. Attributes and measure-based measures cannot be used in the same expression.

For information on creating advanced formulas for measures, refer to the *Oracle Primavera Cloud Expression Language Guide on Oracle Help Center*.

After the measure is created, it must be associated with a portfolio or strategy within the workspace before it can monitor project data. See ***Associate a Measure with a Portfolio*** (on page 65) or ***Associate a Measure with a Strategy*** (on page 69) for more information.

To add a measure for a portfolio or strategy:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Measures**.
- 4) Select **+ Add**.
- 5) In the table, complete the following fields:
 - ▶ **Name**: The name of the measure.
 - ▶ (Optional) **Description**: Details about the measure.
 - ▶ **Data Type**: The type of data that the measure generates. Options include Cost, Number, and Percentage.
 - ▶ **Target Type**: Determines whether the Target value of the measure is manually entered or calculated using a formula. Entering a target value is not required.
 - ▶ **Actual Type**: Determines whether the Actual value of the measure is manually entered or calculated using a formula.
 - ▶ **Measure Based**: Determines whether the measure is created using existing measures. This option is available when either Target Type or Actual Type is set to Formula.
 - ▶ **Tracking Frequency**: Determines how frequently you want to monitor the measure. For example, if a formula-based measure's tracking frequency is set to Weekly, it is computed every week. If it is a manual measure with Weekly tracking frequency, you can enter measure values in weekly buckets.
 - ▶ **Aggregation Source**: Determines whether you are capturing project or program data in the measure.
- 6) If **Target Type** or **Actual Type** is set to Formula, select the **Data Source** detail window to configure their formulas.

Note: The Data Source detail window is not displayed if both types are set to Manual.

- 7) In the **Data Source** detail window, select any of the following sections, if applicable:
 - ▶ **Actual**: Formula that calculates the current values for the measure.
 - ▶ (Optional) **Target**: Formula that calculates a value that can be used when setting thresholds to measure against. See ***Set a Threshold for a Portfolio or Strategy Measure*** (on page 64) for more information.
 - ▶ **Base Expression**: The base expression for the Actual or Target formulas when **Percentage** is the selected **Data Type**.
- 8) In the selected section, enter a formula manually or using a formula template.
 - a. To enter a formula manually:

1. Select the **Field** list to locate the field to use in the calculation.
When the **Measure Based** option is selected, the Field list will only show measures available to use in the formula. In the list, select **Referenced Measures** to select measures that are currently assigned to portfolios or strategies.
2. Select **Portfolio** or **Strategy** to specify the context for the measure associated to the formula. You cannot have a mix of portfolio and strategy contexts in a measure.

Note: Portfolio context measures pull values from the projects associated with the portfolio, and Strategy context measures pull from the projects associated with the strategy. If a measure is displayed in a context not specified in the formula, the measure will not display a value.

3. Select **Insert**.
4. Select the mathematical symbols for the expression.
5. Add any other fields or symbols needed for the expression.
- b. To use a formula template:
 1. In the **Aggregation Type** list, select the calculation needed for the formula. The list is only enabled when **Measure Based** is not selected.
 2. Select **Portfolio** or **Strategy** to specify the context for the measure associated to the formula. You cannot have a mix of portfolio and strategy contexts in a measure.

Note: Portfolio context measures pull values from the projects associated with the portfolio, and Strategy context measures pull from the projects associated with the strategy. If a measure is displayed in a context not specified in the formula, the measure will not display a value.

3. Select **Insert**. The formula template appears.
4. To use the template, highlight or delete **Field** or **Filter**, including the angle brackets, select a field from the **Field** list, and select **Insert**. Repeat for any additional fields or fields to filter by.
5. Add any other fields or symbols needed for the expression.
- 9) Select **Validate Formula**.
- 10) Select **Save**.
- 11) In the **Summary & Settings** panel, select **✕ Close**.

Tips

- ▶ After the measures process is complete, you can review the measures log to view details about the process, including process start and finish and what portfolios or strategies were included. You can access the measures log from the **Manage Services** page.
- ▶ Select the  **Context** menu next to an existing measure, and then select **Duplicate** to duplicate the measure. Duplicated measures do not maintain the portfolio or strategy associations of the original measure.

This setting is used in the following apps:

 **Dashboards**

Portfolio Analysis

Strategic Alignment

Set a Threshold for a Portfolio or Strategy Measure

Set thresholds for measures to see the status of measures using visual indicators.

To set a threshold for a portfolio or strategy measure:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Measures**.
- 4) In the table, select the measure.
- 5) Select the **Thresholds** detail window.
- 6) Select **+ Add**.
- 7) In the **Operator** field, select a parameter to use in the threshold calculation.
- 8) In the **Value** field, enter a threshold value to use in the calculation.
- 9) In the **High Value** field, enter the top of the range when the operator is set to Within Range or Not Within Range.
- 10) In the **Indicator Color** field, select a color to visually represent status when the threshold is met.
- 11) In the **Indicator Icon** field, select an icon to visually represent status when the threshold is met.
- 12) In the **Goal** list, select whether a high or low value indicates a positive change in the measure.
For example, High Values would be selected when measuring Net Savings to represent that an increase in value is a positive change.
- 13) In the **Threshold Computation Method**, select how thresholds are calculated using Actual and Target values.
 - ▶ **Actual Value**: The current value. This is the value as calculated by the expression for Actual on the Data Source tab.
 - ▶ **Percent of Target**: The percentage of the actual value compared to the target value.
- 14) Add as many thresholds as necessary for the measure.
- 15) Select **Save**.
- 16) In the **Summary & Settings** panel, select **✕ Close**.

This setting is used in the following apps:

Dashboards

Portfolio Analysis

Strategic Alignment

Associate a Measure with a Portfolio

Before a measure can be used to track data on projects or programs in a portfolio, it must first be associated with the portfolio. This will also make the measure available to add to views on pages where portfolio measures are supported.

To associate a measure with a portfolio:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Measures**.
- 4) In the table, select the measure.
- 5) Select the **Portfolios** detail window.
- 6) Select  **Link**.
- 7) In the **Link Portfolios** dialog box, select one or more portfolios, and then select **Link**.
- 8) Select **Save**.
- 9) In the **Summary & Settings** panel, select **✕ Close**.

You can also perform this task from the Portfolios inventory panel:

- 1) In the object selector, select  **Portfolios**, and then select **View All Portfolios**.
- 2) In the table, select the portfolio, and select the **Measures** detail window.

This setting is used in the following apps:

-  **Portfolio Analysis**
-  **Strategic Alignment**

Update a Portfolio Measure Target and Actual Value Manually

Target and actual values for portfolio measures that require manual input can be updated to display the current and future trends.

To update target and actual values:

- 1) In the object selector, select  **Portfolios**, and then select **View All Portfolios**.
- 2) In the table, select the portfolio, and then select the **Measures** detail window.
- 3) Select the name of the measure.
- 4) In the measure trend dialog box, update **Target** and **Actual** values.
- 5) Select **Save**.
- 6) In the inventory panel, select **✕ Close**.

Tips

- ▶ You can also do this from the portfolio **Scorecard** page or workspace **Summary Scorecard** page.
- ▶ To view the expression defined for the measure, including any applicable thresholds, select **Measures Definition** in the measure trend dialog box.

Working with Measures

Measures are configured metrics used to monitor the health and status of a portfolio, strategy, program, or project. Measures can be created using aggregates of object attributes, by using existing measures, or set for manual entry. Object attributes and existing measures cannot be used in the same expression for a measure.

Measures have two dimensions: actual and target. A target value can optionally be defined to use when setting thresholds for the measure. Thresholds and indicators are defined to visually represent the status of a measure.

Use the workspace Measures dictionary to create portfolio and strategy measures, the Program Defaults & Options page to create program measures, and the Project Defaults & Options page to create project measures. See **Measures Overview** (on page 60) for more information.

For information on creating advanced formulas for measures, refer to the *Oracle Primavera Cloud Expression Language Guide on Oracle Help Center*.

Measures

Name *	Description	Data Type	Target Type	Actual Type	Measure Based	Status
project count measure		Number	Manual	Formula	<input type="checkbox"/>	Enabled
Total Cost		Cost	Formula	Formula	<input type="checkbox"/>	Enabled

Total: 2 [Download](#)

Data Source Thresholds Portfolios Strategies

Aggregation Type: **1** Sum Field: **2** Proposed Role Allocation Cost **3** **4** Validate Formula

Target: 1 sum(object.Project_currentApprovedBudgetBase)

Actual: 1 sum(object.Project_atCompletionCost,object.Project_status=='ACTIVE')

Table of Screen Highlights

Item	Description
1	<p>Aggregation Type: Provides a template for formulas that use Sum, Min, Max, Count, and Average equations. Select the Aggregation Type, and select Insert. For example, the Sum template displays the following:</p> <p>sum(< Field >,< Filter >)</p> <p>Replace <Field> with the name of the field to be summed. Optionally, replace <Filter> with a field that will filter the results by. Add any additional filter requirements using the mathematical symbols provided.</p>

Item	Description
2	<p>Field: Provides all the fields that can be used in formulas.</p> <p>If Measure Based is selected, only existing measures display. Select Referenced Measures in the Field list to view measures that are currently assigned to Portfolios or Strategies. Select either the actual or target value for the measure.</p> <p>Select a field name, and select Insert. The proper formatting for the field displays.</p>
3	<p>Mathematical Symbols: Used when defining formulas manually or when using the aggregation type template.</p>
4	<p>Validate Formula: Verifies the formula works.</p>

The following table provides examples of formulas that can be created. Total Cost is represented in the preceding image.

Table of Measure Examples

Measure Name	Data Type	Target	Actual	Base Expression (Actual)
Total Cost	Cost	sum(object.Project_currentApprovedBudgetBase)	sum(object.Project_atCompletionCost, object.Project_status=='Active')	
Projects on Time	Percentage		count(object.ProjectCode_Code, object.Project_scheduleVariance<10)	count(object.ProjectCode_Code)
Cost/ROI Ratio	Number		object.'PortfolioMeasure_Total Cost'/object.'PortfolioMeasure_Return on Investment' Note: This expression is Measure Based.	
Project Count	Number		count(object.ProjectCode_Code, object.Project_status=='Active')	
Return on Investment	Number		average(object.Project_returnInvestment)	

Measure Name	Data Type	Target	Actual	Base Expression (Actual)
Net ROI	Number		$0.25 * \text{Portfolios.get("Consulting", "Consulting Portfolio").'PortfolioMeasure_ROI'}$ + $0.50 * \text{Portfolios.get("E\&C", "E\&C Portfolio").'PortfolioMeasure_ROI'}$ + $0.50 * \text{Portfolios.get("Energy", "Energy Portfolio").'PortfolioMeasure_ROI'}$ Note: This expression is Measure Based and references measures from other portfolios.	

Defining Thresholds

The following image provides an example of thresholds that can be set for the Total Cost example. These thresholds are used to determine how status for the measure is visually represented on pages where it is displayed.

Measures

Name *	Description	Data Type	Target Type	Actual Type	Measure Based	Status	Sharing Method	Added By	Owning Workspace
+ Add measure		Number	Formula	Formula	<input type="checkbox"/>	Enabled	Manual		
⚙ Total Cost		Cost	Formula	Formula	<input type="checkbox"/>	Enabled	Manual		
Projects on Time		Number	Formula	Formula	<input type="checkbox"/>	Enabled	Manual		
Project Count		Number	Formula	Formula	<input type="checkbox"/>	Enabled	Manual		
Return on Investment		Number	Formula	Formula	<input type="checkbox"/>	Enabled	Manual		

Total: 4 [Download](#)

Data Source: **1** Thresholds | Portfolios | Strategies **2**

Goal: High Values | Threshold Computation Method: Actual Value

3 Operator *	4 Value *	5 High Value	6 Indicator Color	7 Indicator Icon
+ Add threshold				
Within Range	50,000.00	750,000.00		!
Is Less Than	50,000.00			✓
Is Greater Than	750,000.00			⚠

Total: 4

Table of Screen Highlights

Item	Description
1	Goal: Determines whether a high or low value indicates a positive change in the measure.
2	Threshold Computation Method: Determines how thresholds are calculated using Actual and Target values. <ul style="list-style-type: none"> ▶ Actual Value: The current value. This is the value as calculated by the expression for Actual on the Data Source detail window. ▶ Percent of Target: The percentage of the actual value compared to the target value.
3	Operator: The operators necessary for comparing values in the thresholds.
4	Value: The values the operators use for comparison.
5	High Value: The top of the range when the operator is set to Within Range or Not Within Range.
6	Indicator Color: The color to visually represent status when the threshold is met.
7	Indicator Icon: The icon to visually represent status when the threshold is met.

Monitor a Summary Portfolio Scorecard

Monitor the health and status of all portfolios you have access to in a workspace using the Summary Scorecard page. You can customize the view of this page to display the information about your portfolios that is most important to your organization, including measures available to the portfolio. A measure must be **associated with the portfolio** (see "**Associate a Measure with a Portfolio**" on page 65) to view the data.

To review a summary portfolio scorecard:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, hover over  **Portfolio Analysis**, and select **Summary Scorecard**.
- 3) To review more in-depth detail about the portfolio and its projects or portfolios, select the portfolio name to open the scorecard for that portfolio.

Tips

- ▶ Measure values are calculated at the end of every period for formula-based measures. Different measures can have different tracking frequencies, and the end of the period is determined by the tracking frequency. For example, a measure with Weekly tracking frequency would have the values computed for it every Sunday at 11:59 p.m.
- ▶ To ensure the most up-to-date data displays, select  **Recalculate Measures**. After you receive notification that the job is complete, refresh the browser page to see updated values.
- ▶ To choose which currency to view cost data, go to  **Settings** and select the **Currency** tab.

Scorecard Page Overview

The Scorecard page enables portfolio managers and budget planners to monitor the performance of a portfolio. Portfolios that have an approved budget plan are monitored here to determine which projects are influencing the performance of the plan.

Note: The approved budget plan data represents the latest approved budget plan. The latest approved plan could be from the current planning period or any of the past periods. For example, if you plan every 3 years and you had done planning for the 2016 planning period and approved it, in 2018, you would continue to see the budget plan data corresponding to 2016 budget as that is the currently approved plan. If a scenario is approved for 2018, you would start seeing data for 2018.

In addition to the data this page displays for portfolios, the view displays approved budget plan and project performance data (key performance indicators), based on thresholds defined for the budget plan.

Select a portfolio to view that portfolio's details in the detail window. The tabs in the detail window display the Projects, Programs, and Measures associated with the selected portfolio. Use Search to find portfolio data in the detail window, and use the Discussions feature to view communication and exchange information on associated objects.

An additional three levels of data are displayed on the scorecard when there is an approved budget plan.

- ▶ **Portfolio Statistics:** Summarized key performance indicators.
- ▶ **Project Summary:** Summarized values of the projects in the approved budget plan.
- ▶ **Project:** Metric values of the project.

As part of the monitoring process, budget planners can collaborate on the plan with use of Discussions, perform revisions on the plan if issues arise, and maintain versions of the approved plan by creating snapshots.

Tips

- ▶ When codes are displayed on the scorecard, by default only the code values are shown. To view code values with their associated colors, select the **Show Cell Color** toggle on the **Scorecard** page.
- ▶ The scorecard is in context of the portfolio with the **Current** label.

Monitor a Portfolio Scorecard

Monitor the health and status of a portfolio and its projects and portfolios using the Scorecard page. You can customize this page to view the measures defined by your organization that are important to review while monitoring the portfolio. If an approved portfolio budget plan is available, configured thresholds also display on this page.

If projects or programs are included in the portfolio, you can customize the detail windows to view data that provides insight into the status of the projects and programs within the portfolio.

To review a portfolio scorecard:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Portfolio Analysis**, and select **Scorecard**.
- 3) To customize the portfolio data displayed, select  **Settings**.
- 4) Select a portfolio to view key portfolio data in the detail window:
 - ▶ On the **Projects** tab in the detail window, in the **Show** list, select one of the following:
 - **All**: Displays all projects in the portfolio.
 - **Review**: Displays all projects with a selected flag in the **Review** column.
 - **Budget Approved**: Displays all projects in the approved budget scenario.
 - **Resource Approved**: Displays all projects in the approved resource scenario.
 - ▶ To view programs and measures associated with the selected portfolio, select the **Programs** or **Measures** tab in the detail window.
 - ▶ To customize the view to display data useful to you, select  **Settings** on the **Projects**, **Programs**, and **Measures** tabs.

Tips

- ▶ Measure values are calculated at the end of every period for formula-based measures. Different measures can have different tracking frequencies, and the end of the period is determined by the tracking frequency. For example, a measure with Weekly tracking frequency would have the values computed for it every Sunday at 11:59 p.m.
- ▶ To ensure the most up-to-date data displays, select  **Recalculate Measures**. After you receive the notification that the job is complete, refresh the browser page to see updated values.
- ▶ On the **Projects** tab, select  **Refresh** to update the portfolio filter to ensure all projects are included in the Scorecard.
- ▶ Autosave: As you update data on projects or portfolios, a  **Check Mark** displays at the top right to indicate the changes have been saved. Updates to the layout are saved for the View automatically .
- ▶ To choose which currency to view cost data, go to  **Settings** and select the **Currency** tab.
- ▶ When codes are displayed on the scorecard, by default only the code values are shown. To view code values with their associated colors, select the **Show Cell Color** toggle on the **Scorecard** page.

Monitor an Approved Portfolio Budget Plan

After a portfolio budget plan is approved, budget planners and stakeholders can monitor how the overall plan and individual projects included in the plan are progressing. The two main pages in the application for monitoring plans are the Scorecard page and the Spending page. You can also monitor portfolio plans using dashboards.

Scorecard Page Overview (on page 194)

Spending Page Overview (on page 199)

Scorecard Page Overview

The Scorecard page enables portfolio managers and budget planners to monitor the performance of a portfolio. Portfolios that have an approved budget plan are monitored here to determine which projects are influencing the performance of the plan.

Note: The approved budget plan data represents the latest approved budget plan. The latest approved plan could be from the current planning period or any of the past periods. For example, if you plan every 3 years and you had done planning for the 2016 planning period and approved it, in 2018, you would continue to see the budget plan data corresponding to 2016 budget as that is the currently approved plan. If a scenario is approved for 2018, you would start seeing data for 2018.

In addition to the data this page displays for portfolios, the view displays approved budget plan and project performance data (key performance indicators), based on thresholds defined for the budget plan.

Select a portfolio to view that portfolio's details in the detail window. The tabs in the detail window display the Projects, Programs, and Measures associated with the selected portfolio. Use Search to find portfolio data in the detail window, and use the Discussions feature to view communication and exchange information on associated objects.

An additional three levels of data are displayed on the scorecard when there is an approved budget plan.

- ▶ **Portfolio Statistics:** Summarized key performance indicators.
- ▶ **Project Summary:** Summarized values of the projects in the approved budget plan.
- ▶ **Project:** Metric values of the project.

As part of the monitoring process, budget planners can collaborate on the plan with use of Discussions, perform revisions on the plan if issues arise, and maintain versions of the approved plan by creating snapshots.

Tips

- ▶ When codes are displayed on the scorecard, by default only the code values are shown. To view code values with their associated colors, select the **Show Cell Color** toggle on the **Scorecard** page.
- ▶ The scorecard is in context of the portfolio with the **Current** label.

Monitor an Approved Budget Plan from the Scorecard Page

Monitor projects within an approved portfolio budget plan to determine which projects are influencing the performance of the plan.

To monitor an approved budget plan:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Portfolio Analysis**, and select **Scorecard**.
- 3) Select a portfolio to view the details in the detail window:

- ▶ On the **Projects** tab in the detail window, in the **Show** list, select one of the following:
 - **All**: Displays all projects in the portfolio.
 - **Review**: Displays all projects with a selected flag in the **Review** column.
 - **Budget Approved**: Displays all projects in the approved budget scenario.
 - **Resource Approved**: Displays all projects in the approved resource scenario.
 - ▶ To view programs and measures associated with the selected portfolio, select the **Programs** or **Measures** tab in the detail window.
- 4) To compare current project data against project snapshots, in the project row, select the  **Context** menu, and select **View Snapshots**.

Note: The  **Context** menu is only available when there is an approved budget scenario.

- 5) In the dialog box:
- a. Review the historical information provided in the snapshots.
 - b. Select **OK**.
- 6) If a project requires additional attention, mark it for review by selecting **Review** next to the project name.

Note: If further action is required, you can also revise the plan from this page.

Tips

- ▶ On the **Projects** tab, select  **Refresh** to update the portfolio filter to ensure all projects are included in the Scorecard.
- ▶ To ensure the most up-to-date data displays, select  **Recalculate Measures**. After you receive the notification that the job is complete, refresh the browser page to see updated values.
- ▶ When codes are displayed on the scorecard, by default only the code values are shown. To view code values with their associated colors, select the **Show Cell Color** toggle on the **Scorecard** page.

Collaborate on an Approved Budget Plan from the Scorecard Page

When a portfolio budget plan is in execution, questions may arise about the performance of the plan. Collaborate with stakeholders when monitoring the performance of approved budget plans.

To collaborate on an approved budget plan:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Portfolio Analysis**, and select **Scorecard**.
- 3) Select the desired portfolio to view data in the detail window.
- 4) Select the **Project** tab in the detail window.
- 5) In the **Show** list, select **Budget Approved** to review only the projects in the approved budget plan.

- ▶ Select  **Discuss** to open the Discussion panel.

Note: If no comments have been posted to the Discussion panel, the  **Discuss** icon is empty.

To post a new comment:

- ▶ In the **Post a comment** field, enter a comment, and select **Post**.

To reply to a comment:

- ▶ Select **Comment**.
- ▶ In the **Post a reply** field, enter a reply, and select **Reply**.

Tips

- ▶ You cannot edit or delete a posted comment.
- ▶ Discussion comments can also be made on the **Spending** page.
- ▶ On the **Projects** tab, select  **Refresh** to update the portfolio filter to ensure all projects are included in the Scorecard.

Create a Snapshot of a Budget Plan from the Scorecard Page

Snapshots are used to determine how projects are progressing over time and can be viewed when monitoring projects included in approved portfolio budget plans on the Scorecard page or Spending page. Snapshots are automatically created when budget plans are approved. Additional snapshots can be taken of approved plans at any point in time to capture history for the plan. Review snapshots in the portfolio-level settings.

To create a snapshot of an approved budget plan:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Portfolio Analysis**, and select **Scorecard**.
- 3) Select a portfolio from the portfolio list.
- 4) In the detail panel, select the **Measures** tab.
- 5) Select the **Actions** ▼ menu and select **Save Snapshot**.

Note: The **Actions** ▼ menu is only available when there is an approved budget scenario.

- 6) In the **Save Snapshot** dialog box, enter a name for the snapshot, and select **Save**.

Update an Approved Portfolio Budget Plan from the Scorecard Page

When it is determined that an approved budget plan may need to be revised, a new scenario can be created by duplicating the approved plan. The new scenario can then be sent through the same review, propose, and approval processes as needed. The approved plan will remain in the *Approved* state until the new scenario has been approved.

To update an approved budget plan:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over **Portfolio Analysis**, and select **Scorecard**.
- 3) Select a portfolio from the portfolio list.
- 4) In the detail panel, select the **Measures** tab.
- 5) Select the **Actions** ▼ menu, and select **Revise Budget Plan**.

Note: The **Actions** ▼ menu is only available when there is an approved budget scenario.

- 6) Enter a name for the new scenario, and select **Go to Budget Planning**.
- 7) On the **Budget Planning** page, update the plan as necessary.

Tips

- ▶ When the status of the new scenario is set to *Approved*, the original approved budget plan is set to *Retired*.
- ▶ You can update an approved budget plan directly on the **Budget Planning** page.
- ▶ To ensure the most up-to-date data displays, select  **Recalculate Measures**. After you receive the notification that the job is complete, refresh the browser page to see updated values.

Spending Page Overview

Spending Page Overview Video

When a portfolio budget plan is approved and moves into the execution phase, the budget planner can use the Spending page to track costs against the approved budget of the plan. Costs for the projects can be entered monthly, quarterly, or yearly for each project by the project managers using the Cash Flow page or data can be brought in if connected with P6 EPPM. View time-phased budget, forecast, and spend cost curves in the Financial Summary chart, as well as Year End Forecast (sum of all forecast costs for the current year) and Year To Date Actuals (sum of actuals for the current year).

The Financial Summary section can be customized to show the cost curves incrementally, cumulatively, or both. Time-phased values are spread over the planning horizon of the portfolio for which the portfolio budget plan was created.

The Financial Breakdown section enables the budget planner to analyze detailed time-phased cost data. Cost values can be viewed by planning horizon or a specific year and can be compared to historical values from a snapshot. Select a time period from the Period column to view the projects in the budget plan and their individual costs. Projects can be flagged for review.

As part of the monitoring process, budget planners can collaborate on the plan with use of Discussions, perform revisions on the plan if issues arise and maintain version of the plan by creating snapshots.

Monitor a Budget Plan from the Spending Page

Monitor portfolio budget plans to determine which projects are influencing the performance of the plan.

To monitor a budget plan:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Portfolio Analysis**, and select **Spending**.
- 3) In the **Financial Summary** section:
 - a. Select whether to view **Incremental** or **Cumulative** values.
 - b. Select  **Settings** to select which cost curves to view on the chart.
 - c. In the **Chart Options** dialog box, select the curves you want to view, and select **Save**.
- 4) In the **Financial Breakdown** section:
 - a. In the **View** list, select to view cost values by **Planning Horizon** or a specific year.
 - b. In the **Compare To** list, select whether to compare data against a snapshot to review historical data.
 - c. Select a time period from the **Period** column to view the projects in the budget plan and their individual costs.
- 5) In the **Projects** dialog box:
 - a. Review values against the **Approved Budget**.
 - b. If a project requires additional attention, mark it for review by selecting  **Review** next to the project name.
 - c. Select **Save** or **Cancel**.

Collaborate on an Approved Portfolio Budget Plan from the Spending Page

When a portfolio budget plan is in execution, questions may arise about the performance of the plan as a whole or individual projects. Collaborate with stakeholders when monitoring the performance of portfolios and their budget plans.

To collaborate on an approved budget plan:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over  **Portfolio Analysis**, and select **Spending**.
- 3) On the **Spending** page, review data for the projects in the budget plan, and select to review or post a new comment.
 - ▶ Select  **Discuss** to open the Discussion panel.

Note: If no comments have been posted to the Discussion panel, the  **Discuss** icon is empty.

To post a new comment:

- ▶ In the **Post a comment** field, enter a comment, and select **Post**.

To reply to a comment:

- ▶ Select **Comment**.
- ▶ In the **Post a reply** field, enter a reply, and select **Reply**.

Tips

- ▶ Discussion comments can also be made on the **Scorecard** page.

Create a Snapshot of a Budget Plan from the Spending Page

Snapshots are used to determine how projects are progressing over time and can be viewed when monitoring projects included in portfolio budget plans on the Scorecard page or Spending page. Snapshots are automatically created when budget plans are approved. Additional snapshots can be taken of approved plans at any point in time to capture history for the plan. Review snapshot in the portfolio-level settings.

To create a snapshot of a budget plan:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over **Portfolio Analysis**, and select **Spending**.
- 3) On the **Spending** page, select **Save Snapshot**.
- 4) In the **Save Snapshot** dialog box, enter a name for the snapshot, and select **Save**.

Update an Approved Budget Plan from the Spending Page

When it is determined that an approved portfolio budget plan may need to be revised, a new scenario can be created by duplicating the approved plan. The new scenario can then be sent through the same review, propose, and approval processes as needed. The approved plan will remain in the *Approved* state until the new scenario has been approved.

To update an approved budget plan:

- 1) In the object selector, select a portfolio.
- 2) In the sidebar, hover over **Portfolio Analysis**, and select **Spending**.
- 3) On the **Spending** page, select **Revise Budget Plan**.
- 4) Enter a name for the new scenario, and select **Go to Budget Planning**.
- 5) On the **Budget Planning** page, update the plan as necessary.

Tips

- ▶ When the status of the new scenario is set to *Approved*, the original approved budget plan is set to *Retired*.
- ▶ You can update an approved budget plan directly on the **Budget Planning** page.

Dashboards Overview

Building a Dashboard Video

The Dashboards app enables you to create, manage, and view custom dashboards with visual representations of workspace, project, portfolio, and program data. Dashboards provide an overview of data that is critical when monitoring your projects. Multiple dashboards can be created to meet the needs of different audiences, such as administrators, project managers, field employees, and executives.

Dashboards can be created at the workspace, project, portfolio, and program levels. At the workspace level, all dashboards created can be inherited by child workspaces. Therefore, you should create your dashboards as high up in the workspace hierarchy as necessary. Project, portfolio, and program dashboards that are created in a workspace can be configured to be available in all projects, portfolios, and programs in the workspace. You can also create additional project, portfolio, and program dashboards at that object level to be available for that object only. You can use the Currency drop-down located on the upper right of a dashboard to choose which currency to view cost data.

All workspaces, projects, portfolios, and programs have a default Overview Dashboard. You cannot edit or delete the default Overview Dashboard. However, you can determine which dashboards are displayed on the Dashboard List page for the object that you are in, and rearrange the order of dashboards.

All security privileges apply to dashboards. For example, if you do not have access to see data contained within a certain project, you will not see the data for this project on the dashboard. If you do not have the required security privileges to see any data, you will see a blank tile on the dashboard. The amount of projects and data that users see depends on their security privileges.

View a Dashboard

Dashboards provide visual representations of workspace, project, portfolio, and program data. Dashboards are composed of individual tiles. Depending on its contents, you can view tile data, drill into an area of the tile, maximize a tile's size, and navigate to the page that the tile represents.

To view a dashboard:

- 1) In the object selector, select a workspace, project, portfolio, or program.
- 2) In the sidebar, hover over  **Dashboards**, and select **Dashboard List**.
- 3) On the **Dashboard List** page, select a dashboard tab to view that dashboard.
- 4) On the dashboard, view the available tiles or choose a tile and do any of the following, if applicable:
 - ▶ On supported charts, select a chart area to drill down to a configured sub-chart. Some charts may have multiple levels of sub-charts. Select **Back** to navigate to the previous level.
 - ▶ Select  **Maximize** to enlarge an individual tile. Select  **Minimize** to return the tile to its default size.
 - ▶ Select  **Refresh** to load the most up-to-date tile data.
 - ▶ Select  **More** to navigate to object pages. You can also select individual fields or data entries to navigate to the object page.

Tips

- ▶ Use the **Currency** drop-down on a dashboard to choose which currency to view cost data. Charts, Project Budget Plan, and Program Budget tiles support multicurrency. Subject areas that do not support multicurrency will display base currency. Subject areas that support multicurrency but contain cost data columns from a subject area that does not support multicurrency will be blank.
- ▶ Risk and History data displays in base currency.
- ▶ You can select the  **Print** icon to print either the dashboard or an enlarged tile.
- ▶ All workspaces, portfolios, projects, and programs have a default Overview Dashboard. You cannot edit or delete this dashboard. If you do not see the Overview Dashboard on the Manage Dashboards or Dashboard List page, then you must assign a dashboard.
- ▶ When activity date indicators are enabled, the pre-configured **Activities** charts display indicators on the **Start** and **Finish** date columns of the activities that have actual dates or assigned constraints. The indicators are displayed for the following charts: **Top 10 Activities**, **Top 10 Activities Starting This Week**, and **Top 10 Activities Finishing This Week**.

Tips for Troubleshooting the External URL Tile

- ▶ If you experience problems using the External URL tile in a dashboard, consider the following issues:
 - ▶ When configuring the External URL tile for the dashboard, you must comply with the following standards:
 - The web address must begin with http:// or https://
For example: https://www.example.com
 - ▶ If you are configuring a portlet such as P6 or Unifier, you must be logged in to the application to see data. This is a static image in which you cannot make changes. If you do not have access to the application shown in the portlet, you will not see any data.
 - ▶ Select Preview when configuring an External URL tile to validate the web address. If the web address is invalid, you will receive a message.
 - ▶ Some web pages are set to not allow their content to be embedded in another page. To view the content from these web pages, you will need to open a new browser tab.

Refresh a Dashboard Tile

Refresh individual dashboard tiles to get the most up-to-date data. Dashboard tiles are refreshed every 10 minutes and when a user logs out and logs back in. However, you can manually refresh tiles to show updates to any charts that have had data changes.

To refresh a dashboard tile:

- 1) In the object selector, select a workspace, project, portfolio, or program.
- 2) In the sidebar, hover over  **Dashboards**, and select **Dashboard List**.
- 3) Select a dashboard.
- 4) On the dashboard, choose a tile, and select  **Refresh**.

Create a Dashboard

Creating a dashboard involves adding a dashboard, adding tiles to the dashboard, and customizing the layout of the dashboard.

You can create workspace, project, portfolio, and program dashboards at the workspace level. These dashboards can be inherited by child workspaces and can be made available to the projects, portfolios, and programs that exist in the workspace. You can create additional dashboards in projects, portfolios, and programs.

Create as many dashboards as necessary to satisfy the needs of your organization. You can consider creating customized dashboards for different user groups such as administrators, project managers, field employees, and executives.

If you want to use chart tile types in your workspace, project, and portfolio dashboards, ensure charts are configured before you begin creating a dashboard. See **Add a Chart** (on page 212).

To create a dashboard:

- ▶ **Add a Dashboard** (on page 204)
- ▶ **Add a Tile to a Dashboard** (on page 205)
 - ▶ **Working with Workspace Dashboard Tile Types** (on page 207)
 - ▶ **Working with Project Dashboard Tile Types** (on page 207)
 - ▶ **Working with Portfolio Dashboard Tile Types** (on page 208)
 - ▶ **Working with Program Dashboard Tile Types** (on page 209)
- ▶ **Customize the Layout of a Dashboard** (on page 210)

Add a Dashboard

Add dashboards to display a meaningful view of workspace, project, portfolio, and program data. New dashboards must contain at least one tile.

To add a dashboard:

- 1) In the object selector, select a workspace, project, portfolio, or program.
- 2) In the sidebar, hover over  **Dashboards**, and select **Manage Dashboards**.
- 3) (Workspaces only) On the **Manage Dashboards** page, select the **Workspace**, **Project**, **Program**, or **Portfolio** tab.
- 4) On the selected tab, select **+ Add**.
- 5) On the **Edit** page, in the properties pane, complete the following fields:
 - ▶ **Name:** Enter a unique name for the dashboard.
 - ▶ **Title:** Enter a title. The title appears in the list of available dashboards that a user can view.
 - ▶ (Optional) **Description:** Enter a description.
 - ▶ **Display in Viewer:** Clear this check box if you do not want the dashboard to be available on the **Dashboard List** page.

- ▶ In the **Available Tiles** section, drag and drop available tile types from the settings pane to the dashboard. You can use the **Search** field to search for a tile type or use the **Tile Type Filter** field to filter your options by available tile types.

Note: To add an already existing chart to a Chart tile type, the chart must be owned by or assigned to the current workspace. You can also add a new chart on the Dashboard Edit page from the properties pane for a selected Chart tile.

- 6) In the properties pane for a selected tile, complete the following fields:
 - ▶ (Optional) **Title:** Enter a title. Select **Hide title on tile** to hide the title.
 - ▶ **Tile Column Width:** Select the screen width of the selected tile. Tile width can vary from 1/8 of the screen to full screen.
 - ▶ **Tile Row Height:** Select the screen height of the selected tile. Tile height can vary from 1/8 of a screen to full screen.
 - ▶ **Tile Type:** Choose a tile type from the **Select Tile Type** dialog box if you want to change the tile type.
 - ▶ Configure any additional settings based on the tile type.
- 7) Select **Save** or **Save and View** to view the dashboard in the dashboard list.

Tips

- ▶ You can also double click a tile icon in the **Available Tiles** section of the properties pane to add the tile type to the next open space on the dashboard.
- ▶ You can create a chart directly from the **Tile** settings pane by selecting **+ Create Chart**. See **Add a Chart** (on page 212) for more information.
- ▶ To enable drill-down functionality on a chart tile, in the **Tile** settings pane select **Enable Drill Down**, and then select **Link Sub Chart**. In the **Select Chart** dialog box, select a chart to drill into. In the sub-chart list, use the **Context** menu to edit a chart title, replace the selected chart with a different chart, or unlink a chart to remove it from the list. Unlinking a chart will also remove all subordinate charts from the list. For more information, see **Charts Overview** (on page 212).

Add a Tile to a Dashboard

You can add a tile to any dashboard that you have the security privilege to edit.

To add a tile to a dashboard:

- 1) In the object selector, select a workspace, project, portfolio, or program.
- 2) In the sidebar, hover over **Dashboards**, and select **Manage Dashboards**.
- 3) (Workspaces only) On the **Manage Dashboards** page, select the **Workspace**, **Project**, **Portfolio**, or **Program** tab.
- 4) Select a dashboard, select the **Context** menu, and then select **Edit**.
- 5) On the **Edit** page, in the **Dashboard** settings pane:

- ▶ In the **Available Tiles** section, drag and drop available tile types from the settings pane to the dashboard. You can use the **Search** field to search for a tile type or use the **Tile Type Filter** field to filter your options by available tile types.

Note: To add an already existing chart to a Chart tile type, the chart must be owned by or assigned to the current workspace. You can also add a new chart on the Dashboard Edit page from the properties pane for a selected Chart tile.

- 6) In the properties pane for a selected tile, complete the following fields:
 - ▶ (Optional) **Title:** Enter a title. Select **Hide title on tile** to hide the title.
 - ▶ **Tile Column Width:** Select the screen width of the selected tile. Tile width can vary from 1/8 of the screen to full screen.
 - ▶ **Tile Row Height:** Select the screen height of the selected tile. Tile height can vary from 1/8 of a screen to full screen.
 - ▶ **Tile Type:** Choose a tile type from the **Select Tile Type** dialog box if you want to change the tile type.
 - ▶ Configure any additional settings based on the tile type.
- 7) Select **Save** or **Save and View** to view the dashboard in the dashboard list.

Tips

- ▶ You can create a chart directly from the **Tile** settings pane by selecting **+ Create Chart**. See **Add a Chart** (on page 212) for more information.
- ▶ To enable drill-down functionality on a chart tile, in the **Tile** settings pane select **Enable Drill Down**, and then select **Link Sub Chart**. In the **Select Chart** dialog box, select a chart to drill into. In the sub-chart list, use the  **Context** menu to edit a chart title, replace the selected chart with a different chart, or unlink a chart to remove it from the list. Unlinking a chart will also remove all subordinate charts from the list. For more information, see **Charts Overview** (on page 212).
- ▶ You can use Ctrl + Click to select multiple statuses for a Gantt tile.
- ▶ If you experience problems using the External URL tile in a dashboard, consider the following issues:
 - ▶ When configuring the External URL tile for the dashboard, you must comply with the following standards:
 - The web address must begin with http:// or https://
For example: https://www.example.com
 - ▶ If you are configuring a portlet such as P6 or Unifier, you must be logged in to the application to see data. This is a static image in which you cannot make changes. If you do not have access to the application shown in the portlet, you will not see any data.
 - ▶ Select Preview when configuring an External URL tile to validate the web address. If the web address is invalid, you will receive a message.
 - ▶ Some web pages are set to not allow their content to be embedded in another page. To view the content from these web pages, you will need to open a new browser tab.

Related Video Tips

Using Interactive Charts Video Add an External URL Tile to a Dashboard Video

Working with Workspace Dashboard Tile Types

You can choose from a variety of tile types to create a custom dashboard.

Overview: Overview tile types provide general information about the workspace such as name, ID, and description.

Chart: Chart tile types provide a visual representation of data contained within the workspace. Charts are created on the Charts page. Only charts with project or program subject areas will be available for workspace dashboards.

Gantt: Gantt tile types provide a graphical representation of date fields for projects contained within a workspace. You can configure the standard date fields plotted on the Gantt tile when you add it to a dashboard. You do not have to select a chart to add a Gantt chart.

Map Viewer: The Map Viewer provides a high-level view of the locations of projects contained within a workspace. Specify what data is shown on each map pin using the Select Map Fields dialog box.

Photo: Use the photo tile type to add an image to a dashboard. For example, you may want to add an image of your organization's corporate headquarters for a root level workspace dashboard. You can customize the image sizing to fit, fill, or be positioned in the center of the tile. Photos uploaded to the workspace are not available to projects within the workspace.

Text: The text tile type enables you to enter custom text. For example, you can add a link to your organization's homepage or your line of business.

List: Lists at the workspace level can be customized to display a top ten list of projects, programs, and direct child workspaces. If you select a top ten list for projects or programs, you can configure how the list is sorted from the Sort By menu.

Count: Count tile types display the total number of objects contained within a workspace that a user has access to view. Choose from reports, projects, programs, resources, roles, portfolios, and strategies. Counts are an effective way to show a total amount of a specific object within that workspace. Users can navigate to object pages when they hover over the count tile and select  **More**.

External Content: Enter an external URL to display the content of a website in the dashboard. If the content cannot be viewed in the dashboard, there will be a link to the website which will open in a new window.

Working with Project Dashboard Tile Types

You can choose from a variety of tile types to create a custom dashboard.

Overview: Overview tile types provide general information about the project such as name, ID, description, status, location, and manager.

Chart: Chart tile types provide a visual representation of data contained within the workspace. Charts are created on the Charts page.

Map Viewer: The Map Viewer provides a high-level view of the location of the project. Specify what data is shown on each map pin using the Select Map Fields dialog box.

Photo: Use the photo tile type to add an image to a dashboard. For example, you may want to add an image that shows the physical status of your project. You can customize the image sizing to fit, fill, or be positioned in the center of the tile.

Text: The text tile type enables you to enter custom text. For example, you can add a link to your organization's homepage or your line of business.

List: Lists at the project level can be customized to display a top ten list of activities, risks, scope assignments, work packages, activities starting this week, and activities finishing this week. If you select a top ten list for projects, you can configure how the list is sorted from the Sort By menu.

Count: Count tile types display the total number of objects contained within a project that a user has access to view. Choose from activities, risks, files, scope items, reports, assignments, and work packages. Counts are an effective way to show a total amount of a specified object within that project. Users can navigate to object pages when they hover over the count tile and select

 **More.**

Cost Summary: The Project Budget tile displays the costs of the project including Approved Manual Current Budget, Approved Original Manual Budget, Approved Manual Budget Changes, Approved Manual Budget Transfers, Pending Original Manual Budget, Pending Manual Budget Changes, and Pending Manual Budget Transfers.

Measure: Use measure tile types to display information about pre-configured measures of the project.

External Content: Enter an external URL to display the content of a website in the dashboard. If the content cannot be viewed in the dashboard, there will be a link to the website which will open in a new window.

Working with Portfolio Dashboard Tile Types

You can choose from a variety of tile types to create a custom dashboard.

Overview: Overview tile types provide general information about the portfolio such as name, ID, and description.

Chart: Chart tile types provide a visual representation of data contained within the workspace. Charts are created on the Charts page. Only charts with project subject areas will be available for portfolio dashboards.

Gantt: Gantt tile types provide a graphical representation of date fields for projects contained within a portfolio. You can configure the standard date fields plotted on the Gantt tile when you add it to a dashboard. You do not have to select a chart to add a Gantt chart.

Map Viewer: The Map Viewer provides a high-level view of the locations of projects contained within a portfolio. Specify what data is shown on each map pin using the Select Map Fields dialog box.

Photo: Use the photo tile type to add an image to a dashboard. For example, you may want to add an image that shows the physical status of your portfolio. You can customize the image sizing to fit, fill, or be positioned in the center of the tile.

Text: The text tile type enables you to enter custom text. For example, you can add a link to your organization's homepage or your line of business.

List: Lists at the portfolio level can be customized to display a top ten list of projects. You can configure how the list is sorted from the Sort By menu.

Count: Count tile types display the total number of objects contained within a portfolio that a user has access to view. Choose from projects, files, scenarios, or measures. Counts are an effective way to show a total amount of a specified object within the portfolio. Users can navigate to object pages when they hover over the count tile and select  **More**.

Measure: Use measure tile types to display information about pre-configured measures of the portfolio.

External Content: Enter an external URL to display the content of a website in the dashboard. If the content cannot be viewed in the dashboard, there will be a link to the website which will open in a new window.

Working with Program Dashboard Tile Types

You can choose from a variety of tile types to create a custom dashboard.

Overview: Overview tile types provide general information about the program such as name, ID, and description.

Chart: Chart tile types provide a visual representation of data contained within the program. Charts are created on the Charts page. Only charts with program subject areas will be available for program dashboards.

Map Viewer: The Map Viewer provides a high-level view of the locations of projects contained within a program. Specify what data is shown on each map pin using the Select Map Fields dialog box.

Photo: Use the photo tile type to add an image to a dashboard. For example, you may want to add an image that shows the physical status of your program. You can customize the image sizing to fit, fill, or be positioned in the center of the tile.

Text: The text tile type enables you to enter custom text. For example, you can add a link to your organization's homepage or your line of business.

List: Lists at the program level can be customized to display a top ten list of projects. If you select a top ten list for programs, you can configure how the list is sorted from the Sort By menu.

Count: Count tile types display the total number of objects contained within a program that a user has access to view. Choose from risks, files, or projects. Counts are an effective way to show a total amount of a specified object within the program. Users can navigate to object pages when they hover over the count tile and select  **More**.

Cost Summary: The Program Budget tile displays the costs of the program including Approved Manual Current Budget, Approved Original Manual Budget, Approved Manual Budget Changes, Approved Manual Budget Transfers, Pending Original Manual Budget, Pending Manual Budget Changes, and Pending Manual Budget Transfers.

External Content: Enter an external URL to display the content of a website in the dashboard. If the content cannot be viewed in the dashboard, there will be a link to the website which will open in a new window.

Measure: Use the measure tile types to display information about pre-configured measures of the program.

Customize the Layout of a Dashboard

Customize the layout of your dashboards to provide the best view for web-based application users and Oracle Primavera Cloud users who are using iPads. Arrange and resize tiles until you find the view you like.

To customize the layout of your dashboard:

- 1) In the object selector, select a workspace, project, portfolio, or program.
- 2) In the sidebar, hover over  **Dashboards**, and select **Manage Dashboards**.
- 3) In the table, select a dashboard row, select the  **Context** menu, and then select **Edit**.
- 4) On the **Edit** page, customize the layout:
 - ▶ Select a tile and drag it to another location on the dashboard. Tiles are arranged in rows without any empty space.
 - ▶ Select the bottom right corner of a tile and drag to increase or decrease the height or width. Tile width and height can vary from 1/8 of a screen to full screen.
 - ▶ Select **X Close** on a tile to remove the tile from the dashboard.
- 5) Select **Save**.

Assign a Dashboard

On the Manage Dashboards page, assign a workspace, project, program, or portfolio dashboard owned by the current or parent workspace to the current workspace, project, program, or portfolio.

An assigned dashboard can only be edited at its owner level.

To assign a dashboard:

- 1) In the object selector, select a workspace, project, portfolio, or program.
- 2) In the sidebar, hover over  **Dashboards**, and select **Manage Dashboards**.
- 3) (Workspaces only) On the **Manage Dashboards** page, select the **Workspace**, **Project**, **Program**, or **Portfolio** tab.
- 4) Select **Assign**.
- 5) In the dialog box, select a dashboard to assign to the current object, and then select **Assign**.

Tips

- ▶ All workspaces, portfolios, projects, and programs have a default Overview Dashboard. You cannot edit or delete this dashboard. If you do not see the Overview Dashboard on the Manage Dashboards or Dashboard List page, then you must assign the dashboard.

Duplicate a Dashboard

You can duplicate and edit dashboards that have similar configurations instead of creating a new dashboard each time.

To duplicate a dashboard:

- 1) In the object selector, select a workspace, project, portfolio, or program.
- 2) In the sidebar, hover over  **Dashboards**, and select **Manage Dashboards**.
- 3) (Workspaces only) On the **Manage Dashboards** page, select the **Workspace**, **Project**, **Program**, or **Portfolio** tab.
- 4) In the table, select a dashboard row, select the  **Context** menu, and then select **Duplicate**.
- 5) In the **Duplicate Dashboard** dialog box, in the **Name** field, enter a new dashboard name, and select **Duplicate**.
- 6) Select **Save**.

Organize Dashboards

You can organize dashboards to set the order that the dashboard tabs appear on the Dashboard List page. You can only organize dashboards for the workspace, project, portfolio, or program that you are currently working in.

To organize dashboards:

- 1) In the object selector, select a workspace, project, portfolio, or program.
- 2) In the sidebar, hover over  **Dashboards**, and select **Manage Dashboards**.
- 3) In the table, select a dashboard row, select the  **Context** menu, and then select **Move Up** or **Move Down**.
- 4) Select **Save**.

Tips

- ▶ Hide a dashboard from view on the Dashboard List page for the workspace, project, portfolio, or program you are in by clearing the Display check box.
- ▶ All workspaces, portfolios, projects, and programs have a default Overview Dashboard. You cannot edit or delete this dashboard. However, you can rearrange the order of the dashboards if you want another dashboard to appear first, or hide the Overview Dashboard from view. If you do not see the Overview Dashboard on the Manage Dashboards or Dashboard List page, then you must *assign the dashboard* (see "*Assign a Dashboard*" on page 210).

Update the Owing Workspace of a Dashboard

Update the owning workspace of a dashboard to move it to another workspace that you are assigned. If you move a dashboard to a workspace that is higher in the workspace hierarchy, it will be available to more workspaces.

To update the owning workspace of a dashboard:

- 1) In the object selector, select a workspace, project, portfolio, or program.

- 2) In the sidebar, hover over  **Dashboards**, and select **Manage Dashboards**.
- 3) (Workspaces only) On the **Manage Dashboards** page, select the **Workspace**, **Project**, **Program**, or **Portfolio** tab.
- 4) In the table, select a dashboard row.
- 5) Select the  **Context** menu, and then select **Change Owing Workspace**.
- 6) In the **Select Workspace** dialog box, select the new owning workspace, and select **Select**.
- 7) Select **Save**.

Charts Overview

Charts are visual representations of data from projects and portfolios. You can configure charts to render a variety of chart types including bar, bubble, line, pie, pivot table, stacked bar, status meter, table, and tree map. Charts serve as the building blocks for dashboards. They can be created from the Charts page of the Dashboards app at the workspace level, or they can be created while you are creating and editing your dashboards.

For example, your organization may want to show the variation of costs for all projects contained within a workspace. You can create a custom chart that displays a selection of cost fields for each project. You could create a vertical bar chart with each bar representing a unique cost field such as At Completion Cost. You can even customize the colors that the data will appear in. This chart will provide users a visual representation of the data contained within each project, eliminating the need to navigate to individual projects.

Some charts provide drill-down functionality, enabling you to focus on a subset of data by clicking a single area of a chart. For example, in a vertical bar chart showing Planned Effort by Phase, you could click an individual bar to drill down into the Design phase and view the distribution of planned effort by activities in that phase. Drill-down functionality is supported by stacked and non-stacked vertical and horizontal bar charts. Any chart type can be used as a sub-chart. If the sub-chart type supports drill-down, it can also have a sub-chart. Add sub-charts to sub-charts to support your organization's needs.

You can also enable trending on a chart. For example, your organization may want to create a chart to view the progress of scope assignments over time. You can create a chart for a scope assignment with daily trending enabled. As the actual units are updated, the chart will show the project trend at the specified granularity.

Add a Chart

Add a Chart Video

Charts can be used in workspace, project, program, or portfolio dashboards. They are created either from the Charts page of the Dashboards app in a workspace or from the dashboard editor in a workspace, project, or portfolio. Create charts to use as building blocks for dashboards. Specify the grouping, filtering, and trending of the chart. You can also specify which metrics are used to configure charts.

Charts can be created for the following subject areas:

- ▶ Activities (Project, Portfolio, and Program dashboards)

- ▶ Budget (Project, Portfolio, and Program dashboards)
- ▶ Budget Transactions (Project dashboards only)
- ▶ Programs (Workspace and Portfolio dashboards)
- ▶ Project Cost Sheets by CBS Code (Project dashboards only)
- ▶ Project Cost Sheets by Cost Category (Project dashboards only)
- ▶ Projects (Workspace, Project, Program, and Portfolio dashboards)
- ▶ Resources (Workspace, Portfolio, Program, and Project dashboards)
- ▶ Resource Assignments (Workspace, Portfolio, Program, and Project dashboards)
- ▶ Risks (Workspace, Project, Program, and Portfolio dashboards)
- ▶ Roles (Workspace, Portfolio, Program, and Project dashboards)
- ▶ Scope Items (Project dashboards only)
- ▶ Strategies (Portfolio, Program, and Workspace dashboards)
- ▶ Tasks (Portfolio, Program, Project, and Workspace dashboards)
- ▶ Workspace Cost Sheets (Workspace dashboards only)
- ▶ Workspace Cost Sheets by CBS Code (Workspace dashboards only)

To add a chart from the Charts page:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, hover over  **Dashboards**, and select **Charts**.
- 3) On the **Charts** page, select **+ Add**.
- 4) In the **Configure Chart** wizard, configure the following sections:
 - I. **Chart Details:**
 - a. **Chart Name:** Enter a chart name.
 - b. **Chart ID:** Enter a chart ID if you would like to change the automatically generated one.
 - c. **Chart Type:** Select the chart type.
 - **Note:** The **Chart Settings** available to you change based on your selected chart type.
 - d. **Subject Area:** Select the chart subject area and a grouping type, if applicable. By default, charts are not grouped.
 - e. **Project Preview:** If applicable, select a project or portfolio to use for the data preview.
2. **History Range** (not available for Pie, Bubble, or Table chart types):
 - a. **Enable Trending:** Select **Enable Trending** to show trend data and display the history of a numeric field over a specified period of time or interval of time.
 - **Show history data from:** Specify a starting date from which to show trend data.
 - **Specify number of day, weeks, or months ago:** Specify trending date as number of days, weeks, or months ago.
 - **Show history data between:** Specify the date range to show history data.
 - **Time Series Data Granularity:** Choose the granularity or the intervals at which data points are recorded and displayed. For example, select **Daily** to enable trending daily at midnight or **Mid Daily** to enable trending daily at noon.

3. **Filters:** Choose the criteria you want to use to filter, such as custom date filtering.
Filter criteria can match some or all of your specifications. You can add up to 5 rows of filtering criteria.
 4. **Sort** (available only for Table chart type): Specify how you want your filtered data to be sorted in the table data:
 - a. **Sort By:** Select the field to sort your data by. The drop-down menu displays fields based on your selected subject area.
 - b. **Sort Order:** Specify the order in which you want to sort data.
 5. **Chart Settings:** Specify chart settings to display your charts exactly how you want.
 - **Note:** The available chart setting options change based on your selected chart type.
-
- a. **Tooltips:** Enable tooltips to provide information about a data field when you hover over it on the chart.
 - b. **Axis Title:** Provide the titles for horizontal and vertical axes.
 - c. **Labels:**
 - **Value:** Select this option to show data value in charts and specify the position in the chart where you want to display the values.
 - **Stack Total** (available only for Stacked Horizontal Bar and Stacked Vertical Bar chart types): Select this option to show an overall total of the stacks.
 - d. **Grid Lines:** Select whether the grid lines are horizontal, or vertical, or both.
 - e. **Miscellaneous:** Specify miscellaneous settings, such as the position of the chart legend.
 - f. **Axis Bounds** (available only for Horizontal Bar, Stacked Horizontal Bar, Vertical Bar, Stacked Vertical Bar, and Line chart types): Specify the minimum and maximum values for an axis. Select the **Automatic** check box if you want the minimum and maximum values for the data axis to be computed automatically.
 - g. **Meter Values** (available only for Status Meter chart type):
 - **Colors:** Select the **High**, **Medium**, and **Low Colors** for the status meter chart.
 - **Orientation:** Select the orientation of the status meter chart.
 - h. **Color** (available only for Tree Map chart type): Select the color for the tree map chart.
 - i. **Table Values** (available only for Table chart type):
 - **Rearrange Column:** Select this check box if you want to be able to rearrange columns on your table chart.
 - **Sort Columns:** Select this check box if you want to sort the columns on your chart.
 - **Column Width:** Specify the column width.
 - **Limit Number of rows to:** Specify the number of rows that you want to display on the chart.
 - **Note:** The filtered and sorted data is used when the number of rows is set to a value. For example, if rows are set to 10, then 10 rows at the top of the filtered and sorted data are displayed.
-
- a. **Table Settings** (available only for Pivot Table chart type):

- **Column Label:** Specify the column label of your pivot chart.
 - **Row Label:** Specify the row label of your pivot chart.
 - **Column Width:** Specify the column width.
 - **Limit Number of rows to:** Specify the number of rows that you want to display on the chart.
6. **Chart Data:** Choose fields for the chart. The metrics available depend on the subject area. Choose the sorting options for the data set. The options available are dependent on the fields selected.

- **Note:** The available **Chart Data** options change based on your selected chart type.
- Specify grouping type or aggregation type, if applicable. Choose the colors you want the data to be plotted in. Depending on the data field type chosen, the following aggregate options might be available:
 - **None:** No aggregate type is applied to the data field.
 - **Average:** The average amount of the values in the data field.
 - **Count:** The number of the selected data fields. For example, if you have three values in the data field, then the Count will be three.
 - **Summation:** The sum of all of the values in the data field.
 - **Distinct Count:** The number of distinct values of the selected data fields. For example, if you have five values, and four of the values are the same, then the distinct count for the data will be two.
 - **Maximum:** The maximum value in the data field.
 - **Minimum:** The minimum value in the data field.
- 5) Select **Apply** to generate a preview.
- 6) Select **Save**.

Tips

- ▶ You can also create charts while you are adding or editing dashboards by selecting **+** **Create Chart** from the **Tile** settings pane of a Chart tile type in the Dashboard Editor. Charts that you save will be added to the corresponding workspace's Charts page and can be edited later. See **Add a Dashboard** (on page 204) for more information on adding and editing dashboards.
- ▶ When grouping by code values in a chart, the default colors for the code values will be the colors that are set at the workspace level, if they have been assigned. You can choose to override the default colors and assign different colors for the code values.
- ▶ If you are adding companies to a chart for a project dashboard, the default colors will be the colors that are set for the companies in the Project Team app. You can't override these default colors.
- ▶ When creating program dashboards with charts displaying risk information the chart will display risk information for the program. If you create a chart displaying risk information for a portfolio dashboard the risk information for the project will display.

- ▶ When the activity date indicators are enabled, specific chart types with the Activities subject area support displaying indicators in their tooltips or columns. See Configure Activity Date Indicators and **Working with Chart Types** (on page 216) for more information.

Working with Chart Types

Chart Type	Chart Subtype	Description
Bar	Horizontal Stacked Horizontal Vertical Stacked Vertical	<p>Bar graphs show categories as bars and quantities as bar lengths and are useful for comparing differences among like items. Bar graphs support drill-down functionality.</p> <p>For a horizontal bar graph, you can select multiple X Axis values. For a vertical bar graph, you can select multiple Y Axis values. On an axis with multiple data values, a separate bar will represent each data value. The bars will be stacked on a stacked bar graph.</p>
Bubble		<p>Bubble graphs display data elements as circles or "bubbles". It shows four variables in two dimensions. One value is represented by the location of the circle on the horizontal axis. Another value is represented by the location of the circle on the vertical axis. The third value is represented by the radius of the circle. The fourth value is represented by the color of the circle. The color of the bubble is optional.</p> <p>Bubble graphs are useful for plotting data with three or four variables, and for displaying financial data over a period of time.</p>
Line		<p>Line graphs are useful for visualizing trends or quantities over time.</p>
Line Bar	Vertical Stacked Vertical	<p>Line-bar graphs plot two sets of data with different ranges: one set as bars, and one set as lines overlaid on the bars. This visual makes line-bar graphs useful for displaying relationship trends between data sets.</p> <p>You can select multiple values to plot as lines on a line bar graph and a stacked line bar graph.</p> <p>For a vertical line bar graph, you can select multiple Y Axis values to create separate bars that represent each data value. The bars will be stacked on a stacked vertical line bar graph.</p>
Pie		<p>Pie charts are useful for comparing parts of a whole, such as projects by manager or location within a workspace. Pie charts support drill-down functionality.</p>

Pivot Table		Pivot tables display the aggregated data from rows and columns in a table. For example, you can use a pivot table to measure the number of tasks assigned to each company for every activity in a project. Aggregated values are totaled for each row and column. The row totals and column totals are combined into a Grand Total value.
Status Meter		Status meters measure data against predefined values. A gauge usually plots one data point with an indication of whether that point falls in a high, medium, or low range, making gauges useful for showing performance against goals.
Table		Tables display results organized by rows and columns. A table provides a summary view of data and enables users to see different views of data by arranging rows and columns.
Tree Map		Tree Maps display a space-constrained, two-dimensional visualization for hierarchical structures with multiple levels. Tree maps are limited by a predefined area and display two levels of data and contain rectangular tiles. The size of the tile is based on a measure, and the color of the tile is based on a second measure.

Notes:

- When activity date indicators are enabled, charts with the **Activities** subject area display indicators on the **Start** and **Finish** dates of the activities that have actual dates or assigned constraints. See *Configure Activity Date Indicators* to enable indicators.
- Indicators are supported in the tooltip when Start and Finish dates are added as axes to the following charts: **Horizontal Bar**, **Vertical Bar**, **Line**, **Vertical Line Bar**, **Stacked Vertical Line Bar**. **Table** charts support indicators in columns.
- Indicators are not supported when charts are aggregated.

Assign a Chart to a Child Workspace

On the Charts page, assign a chart owned by a parent workspace to the current workspace. A chart must be assigned to the workspace before a dashboard can be assigned to it.

An assigned chart can only be edited at its owner level.

To assign a dashboard:

- 1) In the object selector, select a workspace.

- 2) In the sidebar, hover over  **Dashboards**, and select **Charts**.
- 3) Select **Assign**.
- 4) In the dialog box, select a chart to assign to the current object, and then select **Assign**.

Duplicate a Chart

You can duplicate and edit charts that have similar configurations instead of creating a new chart each time. You can also duplicate a chart inherited from a parent workspace in order to edit the new version of that chart.

To duplicate a chart:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, hover over  **Dashboards**, and select **Charts**.
- 3) In the table, select a chart row, select the  **Context** menu, and then select **Duplicate**.
A new chart will be added to the Chart List with the same name as the duplicated chart.

Set a Chart as Inactive

Set a chart as inactive so that it will not appear in the available chart list when configuring a dashboard.

You cannot set a chart as inactive if it is being used in a dashboard. A chart can only be set as inactive at its owner level.

To set a chart as inactive:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, hover over  **Dashboards**, and select **Charts**.
- 3) In the table, select a chart row, select the  **Context** menu, and then select **Set Inactive**.

Tips

- ▶ To set an inactive chart as active, select the  **Context** menu, and then select **Set Active**.

Update the Owing Workspace for a Chart

Update the owning workspace of a chart to move it to another workspace that you are assigned. If you move a chart to a workspace that is higher in the workspace hierarchy, it will be available to more workspaces.

To update the owning workspace of a chart:

- 1) In the object selector, select a workspace.
- 2) In the sidebar, hover over  **Dashboards**, and select **Charts**.
- 3) In the table, select a chart.
- 4) Select the  **Context** menu, and then select **Change Owing Workspace**.

- 5) In the **Select Workspace** dialog box, select the new owning workspace, and select **Select**.
- 6) Select **Save**.

Configure View Settings

A view is a configured visual layout of a page.

The following section contains view options common throughout Oracle Primavera Cloud. Available options will vary by page.

Note: Certain page view settings are not maintained when the page is refreshed using the Safari browser.

Views Overview

A view is a configured visual layout of a page. Views allow you to customize content and layout choices such as column selection, filtering, grouping, and sorting. Some pages support additional view options, such as Gantt charts, Gantt bars, and spreadsheet rows. Selecting the best view for your needs can facilitate the process of managing data in Primavera Cloud.

Some pages support the ability to save named views. Named views can be saved as one of the three following types: Personal, Project, and Workspace. Personal views are private and only accessible to the user who created them. Project views are saved at the project level and can be accessed by other members of the project. Likewise, workspace views are saved at the workspace level and are available to all users in the workspace. Available view types may vary by page. A fourth named view type, standard, can be found on the Activities and Budget Planning pages. Standard views are views that come with Primavera Cloud and contain pre-configured view options. They are read-only, but you can modify the view options and save the modifications as a new view.

On pages that support named views, you can create any number of views necessary to display your layouts. Personal, project, and workspace named views can be added, modified, and deleted in the Manage Views panel on a page. On pages without named views, available view options are configured in the Settings panel and are applied and saved to the page.

For pages that support named views and autosave, you can configure if view changes to those pages are saved manually or automatically by configuring the **Save Views** options in Preferences.

Available view options will vary by page. The title of the  **Settings** icon may be specific to the grid or detail window that the icon pertains to. For example, the title of the icon for the Activities grid is Activities Grid Settings.

Add a View

Some pages support the ability to add and save named views. Named views can be configured and applied at any time. Add multiple views to display different layouts.

There are four types of named views:

- ▶ **Standard:** Accessible by all users. Available on the Activities and Budget Planning pages. You cannot add, edit, or delete standard views, but you can modify the view and save the changes as a new view of another type.
- ▶ **Project:** Accessible by other members of the project.
- ▶ **Workspace:** Accessible by all members of the workspace.
- ▶ **Personal:** Only accessible to the user who created them.

Notes:

- Your security privileges determine your ability to create project and workspace views.
 - View options may vary per page.
-

To add a view:

- 1) Navigate to a page, and then select the  **Settings** icon.
- 2) In the **Manage Views** panel, select a view type, select the  **Context** menu, and then select **Add**.
- 3) Enter a name for the new view.
- 4) Add the view:
In the **Manage Views** panel:
 - a. Select **Save**.
 - b. Select **Apply**. When selected, you are returned to the grid. The grid displays any changes you have made; however, those changes are not saved. To save the view select **Save** in the **View** list.
 - c. Select **Reset**. Reset deletes the view that was previously added.

Tips

- ▶ On the  **Context** menu next to an existing view, you can cut, copy, and paste the view into any of the view types. Select **Delete** to delete the view. Select **Set Active** to apply the view to the page.

Apply a View

Select a view to apply its display settings to a page.

Note: You can only apply a view on pages that support named views.

To apply a view:

- 1) Navigate to a page, and then select the  **Settings** icon.
- 2) In the **Manage Views** panel, select a view.
- 3) Select the  **Context** menu, and then select **Set Active**.

Tips

- ▶ For quicker selection, the **View** list displays a list of the five most recently applied views. Select a view to apply it.
- ▶ When edits are made to a view and the **Save Views** preference is set to manual, a warning icon is displayed in the **View** list and you will have the option to reset the view, save the view, or save the changes as a new view directly from the **View** list.

Configure a Column

Configure columns to select and position the columns of data that appear on a page.

Note: View options may vary per page. The title of the  **Settings** icon may be specific to the grid or detail window that the icon pertains to.

To configure a column:

- 1) Navigate to a page, and then select the  **Settings** icon.
- 2) In the **Manage Views** or **Settings** panel, select the **Columns** tab.
- 3) In the **Available Columns** section, select columns and select **Add Column to Selected Columns** to add them to the **Selected Columns** section.
- 4) To position the columns in the **Selected Columns** section by:
 - a. Using the up and down arrows to change the positioning of the columns.
 - b. Dragging columns between the pinned and unpinned sections or by dragging the **Pinned Columns Above** slider up or down. Pinned columns are displayed in a section at the beginning of the table and will not move when the rest of the table is scrolled horizontally. Pinned columns are not available on every page.
- 5) Apply the view:

In the **Manage Views** panel:

 - a. Select **Save**. When selected, you are saving all changes to the current view.
 - b. Select **Save As**. When selected, you can create a new Personal, Project, or Workspace view with a new name in the **Save View as** window.
 - c. Select **Apply**. When selected, you are returned to the grid. The grid displays any changes you have made; however, those changes are not saved. To save changes select **Save** or **Save As** in the View list.
 - d. Select **Reset**.
 - e. Select **× Close**.

In the **Settings** panel:

 - ▶ Select **Save**.

Tips

- ▶ You can choose to show or hide the discussion icon in a table. Select the  **Settings** icon and, in the **Standard Column Options** section, select the **Show Discussion Indicator** option.
- ▶ Expand or collapse hierarchical data for an object in a single table row from the row's  **Context** menu. To expand all or collapse all hierarchical data for all object rows, use the  **Context** menu in the table header.
- ▶ Collapse a selection to a certain grouping band level by selecting the Collapse To option, and then selecting the grouping band you want to collapse in the current layout. The selection available in the list is based on the grouping bands displayed in the current view.

Note: Expand All/Collapse All row settings can be saved to a view; however, individual Expand/Collapse row settings can only be maintained in the active view. If you switch views after expanding/collapsing hierarchical data in individual rows, you will need to readjust when you return to that view.

Related Video Tips

Using Drag-and-Drop Video

Configure a Saved Filter

Filters reduce the data displayed on a page without deleting or otherwise removing it. Data that has been filtered out is still used for all calculations and reports. Some pages offer saved filters, which enable you to create multiple filters and apply them later.

Filters can be saved as one of three types: Workspace, Project, or Personal. Workspace filters are accessible to all users in the workspace. Project filters are accessible to all users in a project. Personal filters are private and only accessible to the user who created them. Users can view and edit all visible filters for a page, but can only apply a filter if it is accessible by the current view. For example, workspace views can only apply workspace filters, but personal views can apply workspace, project, and personal filters. Project views can apply project and personal views, if applicable. To apply a filter that is not accessible by the current view, you can cut or copy it to a type that is accessible to the view. A fourth filter type, standard, contains read-only filters that come with Primavera Cloud. Standard filters cannot be added, edited, or deleted, but then can be copied to a different type of filter and then modified.

Applied filters are saved to the selected view. On a page without named views, saved filters are saved and applied to the page.

Note: View options may vary per page. The title of the  **Settings** icon may be specific to the grid or detail window that the icon pertains to.

To configure a saved filter:

- 1) Navigate to a page, and then select the  **Settings** icon.

- 2) In the **Manage Views** or **Settings** panel, select the **Saved Filters** tab, and then select **Manage Filters**.
- 3) In the **Manage Filters** panel, in the navigation tree, select a filter type, select the  **Context** menu, and then select **Add**.

Note: Filters applied in the Manage Filters panel are applied to the currently active view. To change the active view, in the **Manage Views** panel, select the  **Context** menu next to a view, and then select **Set Active**.

- 4) Enter a name for the new filter.
- 5) Do the following to define the filter criteria:
 - a. In the **Match** list, select an option to define the filter conditions:
 - **All of the following:** Data is filtered only if it matches all the specified rules.
 - **Any of the following:** Data is filtered if it matches any of the specified rules.
 - b. Select **+ Add a filter condition**.
 - c. In the first empty row, use the following fields to define a filter rule:
 - **Field:** The data field to which the rule is applied.
 - **Operator:** The comparison operation for the rule.
 - **Value:** The value against which the rule compares the data field.
 - d. Add rows for each filter rule you want to define.
 - e. Add filter groups to define additional sets of conditions.
- 6) Apply the view:

In the **Manage Views** panel:

 - a. Select **Save**. When selected, you are saving all changes to the current view.
 - b. Select **Save As**. When selected, you can create a new Personal, Project, or Workspace view with a new name in the **Save View as** window.
 - c. Select **Apply**. When selected, you are returned to the grid. The grid displays any changes you have made; however, those changes are not saved. To save changes select **Save** or **Save As** in the View list.
 - d. Select **Reset**.
 - e. Select **✕ Close**.

In the **Settings** panel:
- 7) Select **Save**.

Tips

- ▶ On the page, select  **Filters** to open the **Manage Filters** panel, apply a recently used filter, or clear filters currently in use.
- ▶ For information on applying a saved filter, see **Apply a Saved Filter** (on page 224).

Apply a Saved Filter

Apply a filter to reduce the data displayed on a page without deleting or otherwise removing it. Data that has been filtered out is still used for all calculations and reports. Saved filters enable you to create multiple filters and apply them later.

Applied filters are saved to the selected view. On a page without named views, applied filters are saved to the page. For information on configuring a saved filter, see **Configure a Saved Filter** (on page 222).

Note: View options may vary per page. The title of the  **Settings** icon may be specific to the grid or detail window that the icon pertains to.

To apply a saved filter:

- 1) Navigate to a page, and then select the  **Settings** icon.
- 2) In the **Manage Views** or **Settings** panel, select the **Saved Filters** tab.
- 3) In the **Manage Views** panel, select the view to which you want to apply the filter.

Note: In the **Settings** panel, applied filters are saved directly to the page.

- 4) In the **Match** field, select an option to define the filter application conditions:
 - **All applied:** Data is filtered only if it matches all of the selected filters.
 - **Any applied:** Data is filtered if it matches any of the selected filters.
- 5) In the filters tree, select the filters to apply to the view.

Note: If you want to edit a filter before you apply it, select **Manage Filters**. Any filter in the **Manage Filters** panel can be edited, but you can only apply a filter if it is accessible by the currently active view. To change the active view, in the **Manage Views** panel, select the  **Context** menu next to a view, and then select **Set Active**.

- 6) Apply the view:
 - In the **Manage Views** panel:
 - a. Select **Save**. When selected, you are saving all changes to the current view.
 - b. Select **Save As**. When selected, you can create a new Personal, Project, or Workspace view with a new name in the **Save View as** window.
 - c. Select **Apply**. When selected, you are returned to the grid. The grid displays any changes you have made; however, those changes are not saved. To save changes select **Save** or **Save As** in the View list.
 - d. Select **Reset**.
 - e. Select **✕ Close**.
 - In the **Settings** panel:
 - ▶ Select **Save**.

Tips

- ▶ Some pages include several standard filters, preconfigured for your use. You can apply them to your view at any time.
- ▶ On the page, select  **Filters** to open the **Manage Filters** panel, apply a recently used filter, or clear filters currently in use.
- ▶ When you apply a filter to a view, the filter icon changes to indicate that the data on the page has a filter applied.

Configure and Apply Filtering

On pages without saved filters, you can configure and apply filtering options as part of the current view. Filters reduce the data displayed on a page without deleting or otherwise removing it. Data that has been filtered out is still used for all calculations and reports.

On pages with named views, you can configure a different set of filtering options for each view. On pages without named views, filtering options are applied to the page.

Notes:

- For information on configuring a saved filter, see ***Configure a Saved Filter*** (on page 222).
- View options may vary per page.

To configure and apply filtering options:

- 1) Navigate to a page, and then select the  **Settings** icon.
- 2) In the **Manage Views** or **Settings** panel, select the **Filtering** tab.
- 3) In the **Manage Views** panel, select the view to which you want to apply the filter.

Note: In the **Settings** panel, filtering options are configured and applied directly to the page.

- 4) Add a filter:
 - a. In the **Match** list, select an option to define the filter conditions:
 - **All of the following:** Data is filtered only if it matches all the specified rules.
 - **Any of the following:** Data is filtered if it matches any of the specified rules.
 - b. Select  **Add a filter condition**.
 - c. In the first row, use the following fields to define a filter rule:
 - **Field:** The data field to which the rule is applied.
 - **Operator:** The comparison operation for the rule.
 - **Value:** The value against which the rule compares the data field.
 - d. Add rows for each filter rule you want to define.
 - e. Add filter groups to define additional sets of conditions.
- 5) Apply the view:

In the **Manage Views** panel:

- a. Select **Save**. When selected, you are saving all changes to the current view.
- b. Select **Save As**. When selected, you can create a new Personal, Project, or Workspace view with a new name in the **Save View as** window.
- c. Select **Apply**. When selected, you are returned to the grid. The grid displays any changes you have made; however, those changes are not saved. To save changes select **Save** or **Save As** in the View list.
- d. Select **Reset**.
- e. Select **✕ Close**.

In the **Settings** panel:

- ▶ Select **Save**.

In addition to the standard filtering options, the Work Plan, Hand-offs, Task List, and Constraints pages in the Tasks app also support the ability to configure and apply planning period options from the Filtering tab. On the Work Plan, Hand-offs, and Task List pages, you are filtering activities and tasks based on their start and finish dates. On the Constraints page, you are filtering task constraints based on their dates needed, promised dates, and assigned task start and finish dates.

To configure planning period filtering options:

- 1) On the **Filtering** tab, in the **Planning Period** section, select one of the following:
 - ▶ **All Weeks**: Select to display all objects regardless of their dates.
 - ▶ **Rolling Time Frame**: Select to filter objects according to a planning period:
 - **Weeks Before**: Display any object whose dates occur within the specified number of weeks before the current date.
 - **Weeks After**: Display any object whose dates occur within the specified number of weeks after the current date.

Tips

- ▶ Tasks that fall outside the planning period may still be visible if any of the following are true:
 - ▶ Any of its dates occur within the period.
 - ▶ Assigned activity dates occur within the period.
 - ▶ It is part of a hand-off chain that occurs within the period.
- ▶ Depending on the fields selected in the standard filtering options, the Work Plan, Hand-offs, and Task List pages support the filtering of tasks by a variety of task values, including the activities and WBS nodes with which the tasks may be associated.
- ▶ You can also update Planning Period settings directly from the Work Plan, Hand-offs, Task List, or Constraints page.

Configure Grouping Options

Configure grouping options for views to specify how data is grouped on a page. You can customize the color and appearance of your grouping bands by level.

Note: View options may vary per page. The title of the  **Settings** icon

may be specific to the grid or detail window that the icon pertains to.

To configure grouping:

- 1) Navigate to a page, and then select the  **Settings** icon.
- 2) In the **Manage Views** or **Settings** panel, select the **Grouping** tab.
- 3) To configure the grouping options, select the **Configure** tab and do the following:
 - a. In the **Group By** section, select your grouping options:
 - **Group By**: Defines how data is grouped together on the page.
 - **Sort Order**: Defines how data is sorted within groupings.
 - **Grouping Interval**: Specifies an interval by which to separate your groupings. This field is only available when grouping by hierarchical fields.

Note: To add grouping rows, select the  **Context** menu, and select **Add Above** or **Add Below**.

- b. In the **Band Options** section, select view options:
 - **Show field title**: Displays the title of the field by which data is grouped in a band.
 - **Show field rollups**: Displays the calculated total of all data in a grouping band.
 - **Hide if empty**: Hides grouping bands that do not contain any data.
 - In the **Display text in band using** field, select an option to specify the text to appear in the band.

Note: This field only applies to group by fields that have both an ID and name.

- 4) To configure grouping band color options, select the **Theme** tab and do the following:
 - a. In the **Style** list, select a grouping style.
 - b. In the **Colors** list, select a default or custom color theme.
 - c. To add a custom theme, select **Add Custom Colors**, and then choose up to six colors for the custom theme. Each color corresponds to a grouping band level. You can create multiple custom color themes and select them in the **Colors** list. After choosing a custom theme from the list, you can edit its individual colors or select  **Remove Custom Colors** to delete the theme.
 - 5) Apply the view:

In the **Manage Views** panel:

 - a. Select **Save**. When selected, you are saving all changes to the current view.
 - b. Select **Save As**. When selected, you can create a new Personal, Project, or Workspace view with a new name in the **Save View as** window.
 - c. Select **Apply**. When selected, you are returned to the grid. The grid displays any changes you have made; however, those changes are not saved. To save changes select **Save** or **Save As** in the View list.
 - d. Select **Reset**.

e. Select **✕ Close**.

In the **Settings** panel:

- ▶ Select **Save**.

Tips

- ▶ Use the **Show/Hide empty groups** toggle on the **Activities** page or the **Schedule Comparison** page to automatically show or hide grouping bands that do not have any data.
- ▶ All resource assignments in a group must be the same type (labor or nonlabor) to be included in grouping bands. Materials are not calculated together because there may be different units of measure.
- ▶ WBS items have an additional sorting option for grouping on the Task List page. Select **Hierarchy** on the Grouping tab to apply a hierarchical sort order when managing views.

Related Video Tips

Style a Grid Video

Configure the Schedule Variance Analysis Panel

Configure comparison options to determine what is displayed on the Schedule Variance Analysis panel.

To configure the Schedule Variance Analysis panel tab options:

- 1) **Navigate to the Schedule Comparison page** (see page 245)
- 2) In the **Settings** panel, select the **Comparison Panel** tab.
- 3) To configure the comparison panel, select from the following:
 - a. In the **New** section, select the new items to display:
 - **New Activities**
 - **New Relationships**
 - **New Resources Assignments**
 - **New Risk Mappings**
 - b. In the **Deleted** section, select the deleted items to display:
 - **Deleted Activities**
 - **Deleted Relationships**
 - **Deleted Resource Assignments**
 - **Deleted Risk Mappings**
 - c. In the **Changed** section, select the changed items to display:
 - **Changed Scheduler Settings**
 - **Changed Project Values**
 - **Changed Entered Values**
 - **Changed Calculated Values**
 - **Changed Relationships**
 - **Changed Resources Assignments**

- 4) Select **Apply**.

Configure Sorting Options

Configure sorting options to specify how data is arranged on a page.

Note: View options may vary per page. The title of the  **Settings** icon may be specific to the grid or detail window that the icon pertains to.

To configure sorting options on a page:

- 1) Navigate to a page, and then select the  **Settings** icon.
- 2) In the **Manage Views** or **Settings** panel, select the **Sorting** tab.
- 3) Complete the following fields to define a sort order:
 - ▶ **Sort By:** Select a column by which to order the data.
 - ▶ **Order:** Select a direction in which to arrange the sorted data.
- 4) To define additional levels of sorting, select the  **Context** menu, and then select **Add Above** or **Add Below**.
- 5) Apply the view:
 - In the **Manage Views** panel:
 - a. Select **Save**. When selected, you are saving all changes to the current view.
 - b. Select **Save As**. When selected, you can create a new Personal, Project, or Workspace view with a new name in the **Save View as** window.
 - c. Select **Apply**. When selected, you are returned to the grid. The grid displays any changes you have made; however, those changes are not saved. To save changes select **Save** or **Save As** in the View list.
 - d. Select **Reset**.
 - e. Select **× Close**.
 - In the **Settings** panel:
 - ▶ Select **Save**.

Related Video Tips

Using Multi-Column Sorting Video

Configure Gantt Bars on the Activities Page

To visually distinguish the different activity-specific bars displayed in the Gantt chart, you can configure bar settings for the Gantt chart view on a page. Some bars, such as the Current bar on the Activities page, have additional configuration options.

To configure Gantt chart bars:

- a) In the object selector, select a project or program.
 - 1) In the sidebar, hover over  **Schedule**, and select **Activities**.

- 2) In the **Manage Views** or **Settings** panel, select the **Bars** tab.
- 3) To add a new bar, do the following:
 - a. Select **+ Add ▼**, and then select **Bar**.
 - b. In the **Bar Type** list, select one of the available bar types.
 - c. In the **Height** list, specify a bar height.
 - d. In the **Bar Color** list, use the color picker to select a color for the bar. Optionally you can select a theme from the **Theme** list to apply a pre-configured color theme for all bars in the Gantt chart.
 - e. Click and drag one or more bars to change the order in which they appear.
- 4) To configure the Current bar for the **Activities** list, navigate to the **Bar Type** list, and select **Current**. Apply any of the following options:
 - ▶ Select **Show Progress** to show activity progress as a separate bar color. Select a **Progress Color** from the list.
 - ▶ If you want to color your activities according to their assigned code values, select the check box next to **Color by Activity Code**, and then select a workspace-level or project-level activity code. The code's values and their associated colors are shown below the list. Select **Configure** to configure the code value colors in the corresponding Codes dictionary. If Show Progress is enabled, you can configure the same options for **Progress Color by Activity Code**. Other bars also support the ability to color by activity code.
 - ▶ Select **Swap Colors** to switch the positions of the bar and progress colors or the bar and progress activity codes.
 - ▶ In the **Progress Style** list, select a progress style.
 - ▶ Select **Show Critical** to represent critical activities with a red bar instead of the colors selected for the Current bar.
- 5) To configure labels for a bar, do the following:
 - a. Select the bar, select **+ Add ▼**, and then select **Label**.
 - b. In the **Label Field** list, select a label for the bar.
 - c. In the **Color** list, use the color selector to select a font color.
 - d. In the **Height** list, select a font height.
 - e. Click and drag the label to position it next to or inside the bar.
- 6) Apply the view:

In the **Manage Views** panel:

 - a. Select **Save**. When selected, you are saving all changes to the current view.
 - b. Select **Save As**. When selected, you can create a new Personal, Project, or Workspace view with a new name in the **Save View as** window.
 - c. Select **Apply**. When selected, you are returned to the grid. The grid displays any changes you have made; however, those changes are not saved. To save changes select **Save** or **Save As** in the View list.
 - d. Select **Reset**.
 - e. Select **× Close**.

In the **Settings** panel:

- ▶ Select **Save**.

Tips

- ▶ Select the **Summary Bar**. Enable **Show Expanded Summary Bars** to show summary bars for each expanded and collapsed grouping band in the Gantt view. When this option is disabled, a summary bar will only be displayed if its corresponding grouping band is collapsed.
- ▶ To preview how your Gantt chart bars will look, select **Preview**.
- ▶ To reset your Gantt chart settings to the default configuration, select **Reset**.

Configure Gantt Bars on the Task List Page

To visually distinguish project level task bars displayed in the Gantt chart, you can configure bar and bar label settings for the Gantt chart view on the Task List page.

To configure Gantt bars on the Task List page:

- 1) In the object selector, select a project or program.
- 2) In the sidebar, hover over  **Tasks**, and select **Task List**.
- 3) In the **Manage Views** or **Settings** panel, select the **Bars** tab.
- 4) In the editor grid, select the **Task Name** to make changes to the following label settings:
 - ▶ Adjust the bar label position: Click and drag the Task Name box to change the bar label position in respect to the Task Bar. For example, you can drag the label above, below, before, or after the task bar to customize the position of the task name label. By default, the task name displays after the bar.
 - ▶ Change the bar label color: After selecting **Task Name**, use the **Color** selector to change the task name label color.
 - ▶ Remove the bar label: Click the **X** beside Task Name to completely remove the bar label.
- 5) In the **Height** list, specify a bar height. Options include Small, Medium, and Large.
- 6) Apply the view:

In the **Manage Views** panel:

 - a. Select **Save**. When selected, you are saving all changes to the current view.
 - b. Select **Save As**. When selected, you can create a new Personal, Project, or Workspace view with a new name in the **Save View as** window.
 - c. Select **Apply**. When selected, you are returned to the grid. The grid displays any changes you have made; however, those changes are not saved. To save changes select **Save** or **Save As** in the View list.
 - d. Select **Reset**.
 - e. Select **X Close**.

In the **Settings** panel:
- 7) Select **Save**.

Tips

- ▶ To preview how your Gantt chart bars will look, select **Preview**.
- ▶ To reset your Gantt chart bar settings to the default configuration, select **Reset**.
- ▶ Tasks bars are colored by specific attributes. Go to Project Settings to modify this option.

Configure Gantt Chart Settings

Configure Gantt chart settings to determine how the chart will display.

You can configure Gantt chart settings on the following pages:

- ▶ Activities
- ▶ Task List

Note: View options may vary per page. The title of the  **Settings** icon may be specific to the grid or detail window that the icon pertains to.

To configure Gantt chart settings:

- 1) Navigate to a page, and then select the  **Settings** icon.
- 2) In the **Manage Views** or **Settings** panel, select the **Gantt** tab.
- 3) In the **Show** section, define your chart display options:
 - ▶ **Data date line:** Determines whether to show the project data date in the Gantt chart.
 - ▶ **Relationship lines** (Activities Page only): Determines whether to show activity relationship lines in the Gantt chart.
 - **Critical relationships:** Determines whether to show relationships for activities that must start or finish on time to ensure the project completes on schedule.
 - **Non-driving relationships:** Determines whether to show relationships for activities not on the longest path to project completion.
 - ▶ **Hand-offs** (Task List Page only): Determines whether to show hand-offs in the Gantt chart.
 - ▶ **Sight Lines:** Determines whether to show lines of demarcation for the selected timescale.
 - ▶ **Non-working time shading:** Determines whether to gray out time periods in which no work will be performed, as defined by the project calendar.
 - ▶ **Progress Spotlight** (Activities Page only): Enables the Progress Spotlight highlighting feature in the Gantt chart.
- 4) In the **Timescale** section, define your timescale options:
 - ▶ In the Timescale list, select a timescale for the Gantt chart:
 - **Week/Day:** The Gantt chart is divided into weeks which are then divided into days.
 - **Month/Week:** The Gantt chart is divided into months which are then divided into weeks.
 - **Quarter/Month:** The Gantt chart is divided into quarters which are then divided into months.

- **Year/Month:** The Gantt chart is divided into years which are then divided into months.
- **Year/Quarter:** The Gantt chart is divided into years which are then divided into quarters.
- **Reporting Period** (Activities Page only): The Gantt chart is divided into the units set by the reporting cycle. This option is only available in a project view on the Activities page, and a reporting cycle must be defined for the project.
 - ▶ (Reporting Period timescale only) For the **Reporting Period Label** option, select **Custom label only** to display the reporting period as the label on the Gantt chart (such as WK3). When deselected, the label uses the dates (such as Sat 24 - Fri 30).

5) Apply the view:

In the **Manage Views** panel:

- a. Select **Save**. When selected, you are saving all changes to the current view.
- b. Select **Save As**. When selected, you can create a new Personal, Project, or Workspace view with a new name in the **Save View as** window.
- c. Select **Apply**. When selected, you are returned to the grid. The grid displays any changes you have made; however, those changes are not saved. To save changes select **Save** or **Save As** in the View list.
- d. Select **Reset**.
- e. Select **✕ Close**.

In the **Settings** panel:

- ▶ Select **Save**.

Tips

- ▶ You can also enable some or all of these options by selecting  **Gantt Settings** under the Gantt chart.
- ▶ Tasks bars are colored by specific attributes. Go to Project Settings to modify this option.

Configure Network Settings

The Activity Network is a view that displays a full diagram of the activities and relationships in your project. Configure the number of activity-related fields to display in each activity box.

You can configure network settings on the following pages:

- ▶ Activities

To configure Activity Network settings:

- 1) Navigate to a page, and then select the  **Settings** icon.
- 2) In the **Manage Views** or **Settings** panel, select the view to configure.
- 3) Select the **Network Setting** tab.
- 4) In the **Customize Activity Box Fields** section, display up to eight additional fields across two columns. Select **One field per line** to limit the display to a single column of four fields.

- 5) In the **Preview** section, you can preview the display of an activity box based on your selected fields.
- 6) Apply the view:
In the **Manage Views** panel:
 - a. Select **Save**. When selected, you are saving all changes to the current view.
 - b. Select **Save As**. When selected, you can create a new Personal, Project, or Workspace view with a new name in the **Save View as** window.
 - c. Select **Apply**. When selected, you are returned to the grid. The grid displays any changes you have made; however, those changes are not saved. To save changes select **Save** or **Save As** in the View list.
 - d. Select **Reset**.
 - e. Select **✕ Close**.In the **Settings** panel:
 - ▶ Select **Save**.

Configure Quick Filters

You can use quick filters to reduce the number of visible items on a page.

Notes:

- View options may vary per page.
 - Due to slight differences in functionality, some pages in the application have their own set of help topics for quick filters.
-

To configure quick filters:

- 1) Navigate to a page, and then select the  **Settings** icon.
- 2) In the **Manage Views** or **Settings** panel, select the **Quick Filters** tab.
- 3) In the **Show** section, select up to three quick filters to apply to the view.
- 4) Apply the view:
In the **Manage Views** panel:
 - a. Select **Save**. When selected, you are saving all changes to the current view.
 - b. Select **Save As**. When selected, you can create a new Personal, Project, or Workspace view with a new name in the **Save View as** window.
 - c. Select **Apply**. When selected, you are returned to the grid. The grid displays any changes you have made; however, those changes are not saved. To save changes select **Save** or **Save As** in the View list.
 - d. Select **Reset**.
 - e. Select **✕ Close**.In the **Settings** panel:
 - ▶ Select **Save**.

Apply a Quick Filter

You can use quick filters to refine the data displayed on a page. In a filter list, select one or more values on which to filter. Use multiple quick filters to further reduce how much data is displayed. Clear a filter to show more results. Quick filter selections are not saved with the view.

Notes:

- View options may vary per page.
- Due to slight differences in functionality, some pages in the application have their own set of help topics for quick filters.

To apply a quick filter to a page:

- 1) In the **Quick Filters** list, select applicable filter values.
- 2) To remove a filter, expand a filter list, and select **Clear Filter**.

Configure Task Counts

Task counts display the number of tasks of a specific status that are assigned to an activity. Use the Task Counts tab to configure which task counts are displayed in the activity details popover. Activity details provide additional information about the activities in your project, including associated WBS, start and finish dates, and activity percent complete. All task counts are enabled by default. Task counts are for public tasks only and do not include private tasks.

You can configure task counts on the following pages:

- ▶ Work Plan
- ▶ Hand-offs
- ▶ Task List

Note: View options may vary per page. The title of the  **Settings** icon may be specific to the grid or detail window that the icon pertains to.

To configure task counts:

- 1) Navigate to a page, and then select the  **Settings** icon.
- 2) In the **Manage Views** or **Settings** panel, select the **Task Counts** tab.
- 3) Select the task counts that you want to display:
 - ▶ **Total Tasks:** The total number of tasks assigned to the activity.
 - ▶ **Unplanned tasks:** Tasks without a due date.
 - ▶ **Planned tasks, not completed:** Tasks with a due date or committed date that are not complete.
 - ▶ **Planned tasks, completed:** Tasks with a due date or committed date that are marked as complete.
 - ▶ **Planned tasks outside of activity dates:** Tasks with a due date before the activity start date or after the activity finish date.

- ▶ **Tasks hidden by filters and security:** Tasks that are not visible due to the planning period, enabled task filters or quick filters, or due to the current user's security settings. Tasks with assigned activities that occur within the planning period dates are visible.

Note: The **Unplanned tasks**; **Planned tasks, not completed**; and **Planned tasks, completed** task counts contain the total number of tasks associated with the selected activity. The **Planned tasks outside of activity dates** and **Tasks hidden by filters and security** task counts contain tasks already counted in the other categories.

4) Apply the view:

In the **Manage Views** panel:

- Select **Save**. When selected, you are saving all changes to the current view.
- Select **Save As**. When selected, you can create a new Personal, Project, or Workspace view with a new name in the **Save View as** window.
- Select **Apply**. When selected, you are returned to the grid. The grid displays any changes you have made; however, those changes are not saved. To save changes select **Save** or **Save As** in the View list.
- Select **Reset**.
- Select **✕ Close**.

In the **Settings** panel:

- ▶ Select **Save**.

Configure a Timescale

Configure the timescale interval for a page.

Note: View options may vary per page. The title of the  **Settings** icon may be specific to the grid or detail window that the icon pertains to.

To configure a timescale:

- 1) Navigate to a page, and then select the  **Settings** icon.
- 2) On the **Manage Views** or **Settings** panel, select **Timescale**.
- 3) In the **Timescale Standards Settings** section, select a timescale interval.
- 4) Apply the view:
In the **Manage Views** panel:
 - a. Select **Save**. When selected, you are saving all changes to the current view.
 - b. Select **Save As**. When selected, you can create a new Personal, Project, or Workspace view with a new name in the **Save View as** window.
 - c. Select **Apply**. When selected, you are returned to the grid. The grid displays any changes you have made; however, those changes are not saved. To save changes select **Save** or **Save As** in the View list.
 - d. Select **Reset**.

e. Select **✕ Close**.

In the **Settings** panel:

- ▶ Select **Save**.

Note: If you are changing the timescale on the **Time Phase** view of the **Fund Sources** page, remember this: You can only distribute quantities for a time-phased fund if the **Timescale** setting you choose here matches that fund's **Distribution Type** value. For example, if you want to distribute quantities for a fund that has a **Distribution Type** value of **Yearly**, you must first set the **Timescale** value to **Yearly**.

Tips

- ▶ You can also change the timescale interval by right-clicking on the timescale on a page and selecting an option.

Configure Spreadsheet Rows

Configure spreadsheet rows to show summary and spread values for each item in a table. For example, a resource spreadsheet lists all of the available resources in a project. Each resource may display separate rows for demand hours, commitment hours, demand costs, and commitment costs. Each field row can show values across a timescale and rolled up to a summary level.

Note: View options may vary per page. The title of the  **Settings** icon may be specific to the grid or detail window that the icon pertains to.

To configure a spreadsheet row:

- 1) Navigate to a page, and then select the  **Settings** icon.
- 2) In the **Manage Views** or **Settings** panel, select the **Spreadsheet Rows** tab.
- 3) In the **Available Spreadsheet Rows** section, select rows and select **Add Row to Selected Rows** to add them to the **Selected Spreadsheet Rows** section.
- 4) Use the up and down arrows to change the positioning of the columns in the **Selected Spreadsheet Rows** section.
- 5) Apply the view:

In the **Manage Views** panel:

 - a. Select **Save**. When selected, you are saving all changes to the current view.
 - b. Select **Save As**. When selected, you can create a new Personal, Project, or Workspace view with a new name in the **Save View as** window.
 - c. Select **Apply**. When selected, you are returned to the grid. The grid displays any changes you have made; however, those changes are not saved. To save changes select **Save** or **Save As** in the View list.
 - d. Select **Reset**.
 - e. Select **✕ Close**.

In the **Settings** panel:

- ▶ Select **Save**.

Related Video Tips

Quickly Add a Row Video

Customize Task Cards

Customize Task Cards Video

The Work Plan page and the Hand-offs page support the display of multiple task card types. The **basic task card** shows a task's name, type, and status icons. The color of the card indicates the company assigned to work on the task. When the size of the planning board columns are decreased, a smaller, more generic task card may be shown. You can also enable **configurable task cards** to display task information most important to you. Customize configurable task cards with task fields and status icons. Just like basic task cards, configurable task cards are colored according to their assigned company. See **Task Icon Reference** (https://docs.oracle.com/cd/E80480_01/English/user_guides/task_management_user_guide/224775.htm#t224775).

When configurable task card are enabled, you can double-click a basic task card to display configurable task information. Quickly rename a task by editing the task name in the card header. Select a status icon on the card or select a field with an edit icon to modify its value. On non-touchscreen devices, this icon is shown when you hover over an editable field. On touchscreen devices, this icon will always be shown on editable fields. Read-only fields will not have this icon. The right-click menu functions the same for both basic and configurable task cards. Configurable task cards do not support group selection functionality.

If you want to access all of a task's information, you can select the Task Details icon in the card header to open the Task Details dialog box. When configurable task cards are disabled, double-clicking a basic task card will open the Task Details dialog box directly.

To customize basic and configurable task cards:

- 1) In the object selector, select a project.
- 2) In the sidebar, hover over  **Tasks**, and select **Work Plan** or **Hand-offs**.
- 3) Select  **Settings**.
- 4) In the **Manage Views** panel, select the **Task Cards** tab. Modify task card settings and view the changes in each **Preview** section.
- 5) In the **Basic Task Card** section, select any of the following:
 - ▶ **Show Task Icons**: Display icons on basic task cards on the planning board. This setting is enabled by default for all views.
 - ▶ **Wrap Text on Tasks**: Wrap long task names to the next line of a basic task card.
- 6) In the **Configurable Task Card** section, select **Enable Configurable Task Card**, and then do any of the following:
 - ▶ Select **Add section**  to add a blank section to the task card. You can add up to eight sections.

- In each section, select up to three fields. Each field can only be used once.
 - Select **Hide Label** to hide the selected field's name. Some labels cannot be hidden.
 - Click and drag section dividers to resize the height and width of each section.
 - Select  **Delete** to delete a section.
- 7) In the **Icons** list, choose to show task icon at the top of the card, bottom or the card, or not at all.
 - 8) In the **Font Size** list, choose to show a standard font size across all fields or enable each field value to fit the available cell space.
 - 9) Select **Apply**.
 - 10) All changes made to this page are saved automatically.

Tips

- ▶ To open the Task Details dialog box from a configurable task card, double-click a basic task card, and then select **Task Details** in the configurable task card header, or select the constraints, predecessor, or successors count to open the Task Details dialog box to the respective tab.
- ▶ To modify the other view options in the Manage Views panel, see **Configure View Settings** (on page 219).

Configure Currency Settings

Configure the currency display settings on a page. Currency settings are user-specific and are saved across views.

On project-level pages that support currencies, you can choose to view your costs in terms of the application's base currency, the workspace currency, or the project currency.

Note: View options may vary per page. The title of the  **Settings** icon may be specific to the grid or detail window that the icon pertains to.

To configure a currency view:

- 1) Navigate to a page, and then select the  **Settings** icon.
- 2) On the **Manage Views** or **Settings** panel, select **Currency**.
- 3) Configure the following settings:
 - ▶ Select **Show currency symbols** to display the symbol of the currency.

Note: This option is only enabled if the **Show currency symbol** option is also enabled in the user preferences. See **Configure the Currency Format** for more information.

- ▶ Select **Show currency banner** to display the chosen currency in the page toolbar.
- ▶ In the **In what currency do you want to view costs?** section, choose which currency to view costs. If all available currencies are the same, this field is disabled. Currencies that can be edited are labeled Editable.

Note: If workspace currency is selected but is not supported, cost data will display in the base currency. For more information on workspace currency, see [Workspace Currency Overview](#).

4) Apply the view:

In the **Manage Views** panel:

- a. Select **Save**. When selected, you are saving all changes to the current view.
- b. Select **Save As**. When selected, you can create a new Personal, Project, or Workspace view with a new name in the **Save View as** window.
- c. Select **Apply**. When selected, you are returned to the grid. The grid displays any changes you have made; however, those changes are not saved. To save changes select **Save** or **Save As** in the View list.
- d. Select **Reset**.
- e. Select **✕ Close**.

In the **Settings** panel:

- ▶ Select **Save**.

Configure Formatting

Highlight Read-Only Fields Video

Configure the formatting on a page.

The Work Plan page in the Tasks app contains additional page formatting options.

Note: View options may vary per page. The title of the  **Settings** icon may be specific to the grid or detail window that the icon pertains to.

To configure the formatting:

- 1) Navigate to a page, and then select the  **Settings** icon.
- 2) In the **Manage Views** or **Settings** panel, select the **Formatting** tab.
- 3) In the **Read-only Styling** section, select **Highlight Read-only cells** to highlight read-only cells on the page.
- 4) (Work Plan page only) Do any of the following:
 - ▶ In the **Band Options** section, select **Hide if empty on Hopper** or **Hide if empty on Planning Board** to hide empty grouping bands in the hopper or planning board for activities that have not been assigned any tasks.
 - ▶ In the **Planning Board Options** section, select **Show Info Bar** to display details for the selected task or activity below the planning board.
- 5) Apply the view:

In the **Manage Views** panel:

 - a. Select **Save**. When selected, you are saving all changes to the current view.
 - b. Select **Save As**. When selected, you can create a new Personal, Project, or Workspace view with a new name in the **Save View as** window.

- c. Select **Apply**. When selected, you are returned to the grid. The grid displays any changes you have made; however, those changes are not saved. To save changes select **Save** or **Save As** in the View list.
- d. Select **Reset**.
- e. Select **✕ Close**.

In the **Settings** panel:

- ▶ Select **Save**.

Tips

- ▶ Configure formatting specific to list table elements by navigating to the Activities List page or the Task List page. See **Configure Cell, Column, and Row Formatting** (on page 241).

Configure Cell, Column, and Row Formatting

Fast Formatting in Views Video

Configure cell, column, and row formatting to determine how a table will display. Apply a different font color, add a background color, or use filter options to create conditional formatting.

You can customize table formatting on the following pages:

- ▶ Activities
- ▶ Task List

To customize table formatting:

- 1) In the object selector, select a project or a program.
 - 2) Navigate to the Activities or Task List page. Find the cell, column, or row in the table that you would like to format.
 - ▶ **Columns:** Right-click a column header, then select **Format** to change formatting options for a column, a column using a filter, or a row using a filter.
 - ▶ **Rows:** From the item  **Context** menu, select **Format Row**.
-
- Note:** You can apply filters to rows from the format options in the column headers.
-
- ▶ **Cells:** Right-click the cell that you would like to format and select **Format Cell** or **Format Cell by Filter**.
 - 3) Select an option to make needed formatting adjustments:
 - ▶ **Format Cell/Column/Row:** Opens a formatting menu with basic font styles and color preset options. Select **Apply** to keep your changes, or select **Clear** to discard them.
 - ▶ **Format Cell/Column/Row by Filter:** Select **Add** to open a formatting menu and create a custom filter for conditional formatting based on specified criteria, such as a text color preset option. For example, if you want only rows that meet certain criteria to display red, you could create a filter specifying those details here. Select **Add** to add your filter to the selected table element.

Notes:

- Formatting changes are saved with the current Named view and display on all printing outputs with the option to turn them on or off. You can view your selected formatting options from the Settings page.
- Formatting selections are processed sequentially, and some changes overlap, depending on the type of change you apply. Row formatting applies first, followed by column formatting, and then cell formatting. Each type displays basic formatting in order of creation, followed by conditional formatting—by filter—in order of creation. For example, if you apply green as an alternating background color for rows, but then apply a yellow background color to a cell, the cell will have a yellow background color.

Tips

- ▶ Include a hyperlink that directs team members to an internal or external site with more information than the grid can provide. See [Create a Hyperlink in a Grid](#).
- ▶ Expand or collapse hierarchical data within a table row from the row's  **Context** menu. To expand or collapse hierarchical data for every row, use the  **Context** menu in the table header.
- ▶ Collapse a selection to a certain grouping band level by selecting the Collapse To option, and then selecting the grouping band you want to collapse in the current layout. The selection available in the list is based on the grouping bands displayed in the current view.

Note: Expand All/Collapse All row settings can be saved to a view; however, individual Expand/Collapse row settings can only be maintained in the active view. If you switch views after expanding/collapsing hierarchical data in individual rows, you will need to readjust when you return to that view.

Configure Plan By Options

Configure your plan by options for the Hand-offs page to specify what grouping options are available in the **Plan By** drop down. The options available for selection are Activity, Company, Codes, and WBS.

To configure Plan By grouping:

- 1) Navigate to the Hand-offs page, and then select the  **Settings** icon.
- 2) In the **Manage Views** panel, select the **Plan By** tab.
- 3) In the **Available** section, select the options you want to appear in the **Plan By** filters list.
- 4) When an option is selected, drag and drop the option to the **Selected** section or use the arrow buttons to move the selected options between **Available** and **Selected**.

Note: The codes category lists all codes that apply to both tasks and

activities.

- 5) (Optional) To display WBS and Code value grouping bands hierarchically select **Display lanes for WBS and Code values hierarchically**.
- 6) Apply the view:
In the **Manage Views** panel:
 - a. Select **Save**.
 - b. Select **Save As**. When selected, you can create a new Personal, Project, or Workspace view with a new name in the **Save View as** window.
 - c. Select **Apply**. When selected, you are returned to the grid. The grid displays any changes you have made; however, those changes are not saved. To save changes select **Save** or **Save As** in the View list.
 - d. Select **Reset**.
 - e. Select **Close**.

Tips

- ▶ For more information on how to configure codes, review the **Codes Overview** (on page 51) topic.
- ▶ The WBS Plan by grouping option can be set to any WBS level such as the children or parent level.
- ▶ All child levels under the WBS are displayed by default. You can use the WBS quick filter options to control the child WBS levels displayed on the Hand-offs and Work Plan pages.
- ▶ The WBS Plan by grouping option will display all WBS options including those that do not have an activity associated with them.
- ▶ If you're planning by an activity or task and no activities have been created or assigned to those tasks, they will not display in the schedule.
- ▶ Right-click a selection of one or more tasks, and then select **Assign Activity** to assign the same activity to all of the selected tasks. In the **Assign Activity** dialog box, leave the **Activity** field blank to remove any existing activity assignment from the selected tasks.

Appendix of Referenced Navigation Steps

Navigate to the WBS page

- a) In the object selector, select a project.
- b) In the sidebar, hover over  **Schedule** or  **Scope**, and select **WBS**.

Navigate to the Activities page

- a) In the object selector, select a project or program.
- b) In the sidebar, hover over  **Schedule**, and select **Activities**.

Navigate to the project Activities page

- 1) In the object selector, select a project.
- 2) In the sidebar, hover over  **Schedule**, and select **Activities**.

Navigate to the Baselines page

- a) In the object selector, select a project.
- b) In the sidebar, hover over  **Scope** or  **Schedule**, and select **Baselines**.

Navigate to the Baselines or Activities page

- 1) In the object selector, select a project.
- 2) In the sidebar, hover over  **Scope** and select **Baselines**, or hover over  **Schedule** and select **Baselines** or **Activities**.

Navigate to the Schedule Comparison page

- 1) In the object selector, select a project.
- a) In the sidebar, hover over  **Schedule**, and select **Schedule Comparison**.

Navigate to the workspace resource page

- a) In the object selector, select a workspace.
- b) In the sidebar, hover over  **Resources**, and select **Resource List**.

Navigate to the project resources page

- a) In the object selector, select a project.
- b) In the sidebar, hover over  **Resources**, and select **Resource List**.

Navigate to the workspace or project resources page

- a) In the object selector, select a workspace or project.
- b) In the sidebar, hover over  **Resources**, and select **Resource List**.

Navigate to the workspace role page

- a) In the object selector, select a workspace.
- b) In the sidebar, hover over  **Resources**, and select **Role List**.

Navigate to the project roles page

- a) In the object selector, select a project.
- b) In the sidebar, hover over  **Resources**, and select **Role List**.

Navigate to the workspace or project roles page

- a) In the object selector, select a workspace or project.
- b) In the sidebar, hover over  **Resources**, and select **Role List**.

Navigate to the workspace resource assignments page

- a) In the object selector, select a workspace.
- b) In the sidebar, hover over  **Resources**, and select **Assignment List**.

Navigate to the project or program resource assignments page

- a) In the object selector, select a project or program.
- b) In the sidebar, hover over  **Resources** or  **Schedule**, and select **Assignment List**.

Navigate to the workspace resource analysis page

- a) In the object selector, select a workspace.
- b) In the sidebar, hover over  **Resources**, and select **Analysis**.

Navigate to the project or program resource analysis page

- a) In the object selector, select a project or program.
- b) In the sidebar, hover over  **Resources**, and select **Analysis**.

Navigate to the files page

- a) In the object selector, select a project, portfolio, program, or idea.
- b) In the sidebar, hover over  **Files**, and select **File List**.

Navigate to the project files page

- a) In the object selector, select a project.
- b) In the sidebar, hover over  **Files**, and select **File List**.

Navigate to the project or portfolio files page

- a) In the object selector, select a project or portfolio.
- b) In the sidebar, hover over  **Files**, and select **File List**.

Navigate to the project Details page

- a) In the object selector, select a project.
- b) In the sidebar, select  **Summary & Settings**.
- c) On the **Summary & Settings** menu, select **Details**.

Navigate to the project settings page

- a) In the object selector, select a project.
- b) In the sidebar, select  **Summary & Settings**.
- c) On the **Summary & Settings** menu, select **Settings**.

Navigate to the program settings page

- 1) In the object selector, select a program.
- 2) In the sidebar, select  **Summary & Settings**.
- a) On the **Summary & Settings** menu, select **Settings**.

Navigate to the program codes page

- 1) In the object selector, select a program.

- a) In the sidebar, select  **Summary & Settings**.
- b) On the **Summary & Settings** menu, select **Codes**.

Navigate to a dictionary page

- a) In the object selector, select a workspace.
- b) In the sidebar, select  **Summary & Settings**.
- c) On the **Summary & Settings** menu, select **Dictionaries**, and then select a dictionary item.

Navigate to the Calendars dictionary page

- a) In the object selector, select a workspace.
- b) In the sidebar, select  **Summary & Settings**.
- c) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Calendars**.

Navigate to the Codes dictionary page

- a) In the object selector, select a workspace.
- b) In the sidebar, select  **Summary & Settings**.
- c) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Codes**.

Navigate to the Curve Profiles dictionary page

- 1) In the object selector, select a workspace.
- 2) In the sidebar, select  **Summary & Settings**.
- 3) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Curve Profiles**.

Navigate to the Units of Measure dictionary page

- a) In the object selector, select a workspace.
- b) In the sidebar, select  **Summary & Settings**.
- c) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Units of Measure**.

Navigate to the Locations dictionary page

- a) In the object selector, select a workspace.
- b) In the sidebar, select  **Summary & Settings**.
- c) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Locations**.

Navigate to the Currencies dictionary page

- a) In the object selector, select a workspace.
- b) In the sidebar, select  **Summary & Settings**.
- c) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Currencies**.

Navigate to the project Calendars dictionary page

- a) In the object selector, select a project.
- b) In the sidebar, select  **Summary & Settings**.
- c) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Calendars**.

Navigate to the project Codes dictionary page

- a) In the object selector, select a project.
- b) In the sidebar, select  **Summary & Settings**.
- c) On the **Summary & Settings** menu, select **Dictionaries**, and then select **Codes**.

Navigate to an object configuration page

- a) In the object selector, select a workspace.
- b) In the sidebar, select  **Summary & Settings**.
- c) On the **Summary & Settings** menu, select **Defaults & Options**, and then select an object.

Navigate to the Activity configuration page

- a) In the object selector, select a workspace.
- b) In the sidebar, select  **Summary & Settings**.
- c) On the **Summary & Settings** menu, select **Defaults & Options**, and then select **Activity**.

Navigate to the File configuration page

- a) In the object selector, select a workspace.
- b) In the sidebar, select  **Summary & Settings**.
- c) On the **Summary & Settings** menu, select **Defaults & Options**, and then select **File**.

Navigate to the Project configuration page

- a) In the object selector, select a workspace.
- b) In the sidebar, select  **Summary & Settings**.
- c) On the **Summary & Settings** menu, select **Defaults & Options**, and then select **Project**.

Navigate to the Program configuration page

- a) In the object selector, select a workspace.
- b) In the sidebar, select  **Summary & Settings**.
- c) On the **Summary & Settings** menu, select **Defaults & Options**, and then select **Program**.

Navigate to the Resource/Role configuration page

- a) In the object selector, select a workspace.
- b) In the sidebar, select  **Summary & Settings**.
- c) On the **Summary & Settings** menu, select **Defaults & Options**, and then select **Resource/Role**.

Navigate to the Resource Assignment configuration page

- a) In the object selector, select a workspace.
- b) In the sidebar, select  **Summary & Settings**.
- c) On the **Summary & Settings** menu, select **Defaults & Options**, and then select **Resource Assignment**.

Navigate to the WBS configuration page

- a) In the object selector, select a workspace.
- b) In the sidebar, select  **Summary & Settings**.
- c) On the **Summary & Settings** menu, select **Defaults & Options**, and then select **WBS**.

Navigate to the Manage Services page

- a) In the header, select your username.
- b) On the **User** menu, select **Manage Services**.

Navigate to the Preferences page

- a) In the header, select your username.
- b) On the **User** menu, select **Preferences**.